BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

Scoped Environmental Impact Assessment (Revised)

1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Town of Oakville

Prepared For:

Bronte River Limited Partnership
Eaglewood Communities Inc.

Prepared By:

Beacon Environmental Limited

Date: **March 2023**

Project: **220262 and 221306**

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Report Versions Issued

Version	Date	Revisions
1.	January 2022	
2.	February 2022	Revised Site Plan for Eaglewood only
3.	March 2023	Address Agency Comments; Revised Site Plans

1. Introduction

Beacon Environmental Limited (Beacon) was retained by Bronte River Limited Partnership and Eaglewood Communities Inc. to prepare a Scoped Environmental Impact Assessment (EIA) in support of two separate applications to redevelop the properties located at 1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Oakville, Ontario, herein referred to as Subject Lands (**Figure 1**).

The Subject Lands include 12.5 hectares (ha) of land located west of Bronte Road, south of Upper Middle Road, north of the Queen Elizabeth Way and east of the Bronte Creek valleylands. The northern half of the Subject Lands support existing development and the southern half supports woodlands and valleylands. The existing developed areas are comprised of several properties that support individual residences, outbuildings, landscaped areas (lawns, ornamental plantings and artificial ponds). It is proposed that these existing developed areas be redeveloped to create a single community comprised of a mix of residential townhouses, detached homes, and a six-storey residential building.

The developed portions of the Subject Lands are designated by the Town of Oakville as Low and Medium Density Residential and Natural Area. The undeveloped portions of the Subject Lands are designated as Greenbelt.

The developed portions of the Subject Lands are surrounded by environmentally designated lands including the Greenbelt Protected Countryside, Bronte Creek Provincial Park and components of the Region of Halton (Region) Natural Heritage System (**Figure 2**). These environmentally designated areas correspond with the Bronte Creek valleylands, woodlands, buffers and adjacent undeveloped lands to the north that form part of the Bronte Creek Provincial Park.

As the Subject Lands overlap in part with the Regional Natural Heritage System (RNHS) and lands identified as Greenbelt Natural Area by the Town of Oakville, an EIA is required to assess the potential impacts of the redevelopment proposal on any significant natural heritage features and functions. Additionally, due to proximity to the Bronte Creek valleylands, portions of the Subject Lands fall within the regulation limits of Conservation Halton (CH) and are subject to CH development policies and permitting (**Figure 3**). Note that the CH's regulation mapping, which is provided in this report, is approximate and does not represent finalized hazard limits or constraints that have been further refined through the site-specific technical studies.

Because the proposed redevelopment will be limited primarily to portions of the Subject Lands that are already developed and will not encroach into any adjacent key natural heritage features, it was proposed that the EIA could be scoped. Additionally, previous environmental studies were completed on the Subject Lands between 2012–2015 as part of the Merton Tertiary Planning process which established the current land use designations and zoning (Dance Environmental 2013).

Draft Terms of Reference for a Scoped EIA were submitted to the Town of Oakville (Town) on July 9, 2021. Following a site walk with CH and the Town (August 18, 2021), and a site walk with the Region (September 7, 2021), comments on the Terms of Reference were received from the Town (October 15, 2021) and CH (October 12, 2021). Responses to the comments as well as Revised EIA Terms of Reference were submitted to the Town, CH and Region on October 25, 2021. These are included in **Appendix A**.

A Scoped EIA report in support of the proposed redevelopment was previously submitted in January 2022. Since that time, the proposed redevelopment plans have been revised. The current EIA report has been updated to incorporate the revised plan and address comments received from agencies.

Additionally, a site walk with the Town and the Region was conducted on March 24, 2023, to discuss some comments received, namely the natural channel design and erosion protection works of the Bronte Creek tributary and the presence of seeps.

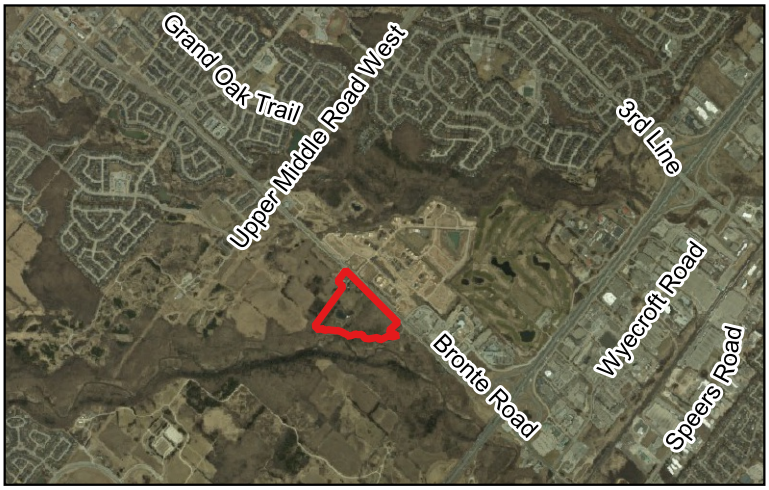
1.1 Study Team

This EIA report was prepared using an integrated approach with input from a multi-disciplinary team comprised of experts in the fields of land use planning, ecology, hydrology, hydrogeology, and fluvial geomorphology.

A list of Study Team members, their qualifications, and role in the project is provided in **Table 1**.

Table 1. Composition of Study Team, Key Roles and Reports Provided

Firm	Individuals	Title - Qualifications	Key Role and Reporting
Beacon Environmental Limited	Ken Ursic	M.Sc. / Senior Ecologist	Project Management *EIA – Reviewer, Author*
	Todd Smith	B.Sc., M.L.A., OALA / Senior Landscape Architect	*EIA – Reviewer*
	James Seery	B.Sc., CERPIT / Ecologist, Certified Arborist	*EIA – Co-Author*
	Devon Fowler	B.Sc., Dipl. Eco. Restoration / Aquatic Ecologist	Fisheries *EIA – Author*
	Mark Dorriesfield	B.Sc., Cert. GIS / Ecologist	Breeding Bird Surveys *EIA – Author*
	Dan Westerhof	B.Sc., MES / Terrestrial Ecologist, Certified Arborist	Vegetation Survey *EIA - Author*
GEO Morphix Ltd.	Paul Villard	Ph.D., P.Geo., EP., CERP., CAN-CISEC / Director, Principal Geomorphologist	Conceptual Channel Design and Erosion Assessment Report
	John Tweedie	M.Sc / Environmental Scientist	Conceptual Channel Design and Erosion Assessment Report
Urbantech Consulting	Steve A. Hader	P.Eng. / Senior Project Manager	Functional Servicing Report
	Janna Ormond	B.Eng., EIT / Water Resources Designer	Functional Servicing Report
	Andrew Fata	P.Eng.	
DS Consultants Ltd.	Martin Gedeon	M.Sc., P.Geo. / Vice President	Project Management
Terraprobe Inc.	Madan Talukdar	B.A.Sc., P.Eng. / Associate	Geotechnical Investigator
Kuntz Forestry Consulting Inc.	Peter Kuntz	B.Sc.F., R.P.F., BNA, TRAQ, TPAQ/ President	Tree Inventory
Jennifer Lawrence and Associates Inc.	Jennifer Lawrence	Principal, B.E.S., MCIP, RPP / Environmental Planner	Project Management
Korsiak Urban Planning	Terry Korsiak	Principal – M.A., MCIP, RPP	Planning
	Alison Bucking	Planner – B.E.S., RPP	



Site Location	Figure 1
Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville,	
BEACON ENVIRONMENTAL	Project: 220262 Last Revised: March 2023
Client: Bronte River Limited Partnership and Eaglewood Communities Inc.	Prepared by: SZ Checked by: KU
N 1:5,000	Inset Map: 1:50,000

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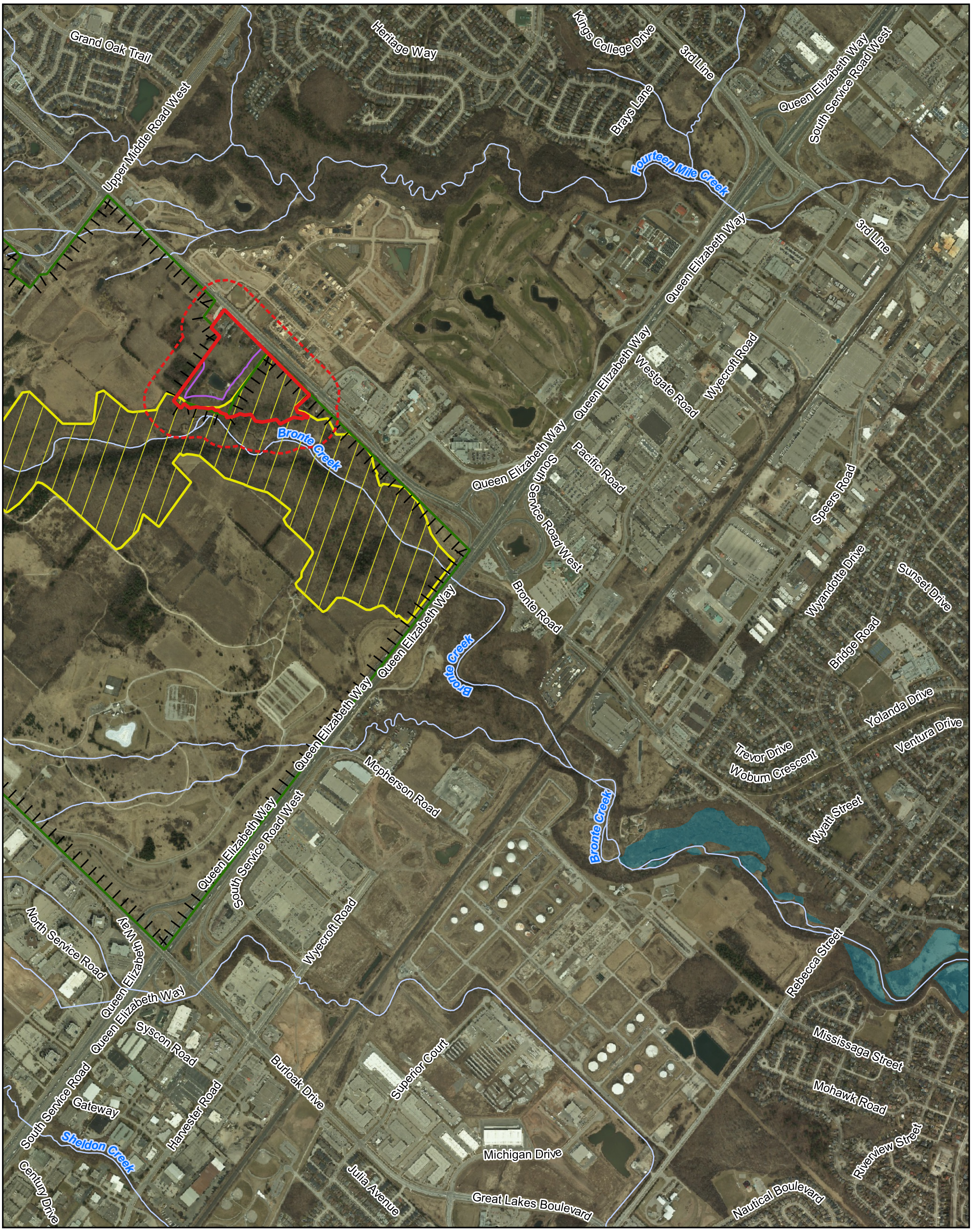

Legend

- Subject Lands
- Study Area
- Bronte Creek Provincial Park Nature Reserve Zone, Provincially Significant Life Science Area of Natural and Scientific Interest
- Greenbelt Plan Protected Countryside
- Lower Bronte Creek Wetland Complex, Evaluated Provincially Significant
- Watercourse (MNRF 2021)
- Natural Area (Town of Oakville Official Plan)/ Regional Natural Heritage System (Region of Halton Official Plan)

Natural Heritage Areas and Features

Figure 2

Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville, ON

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: March 2023

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.

Prepared by: SZ
Checked by: KU

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0 300 600 m

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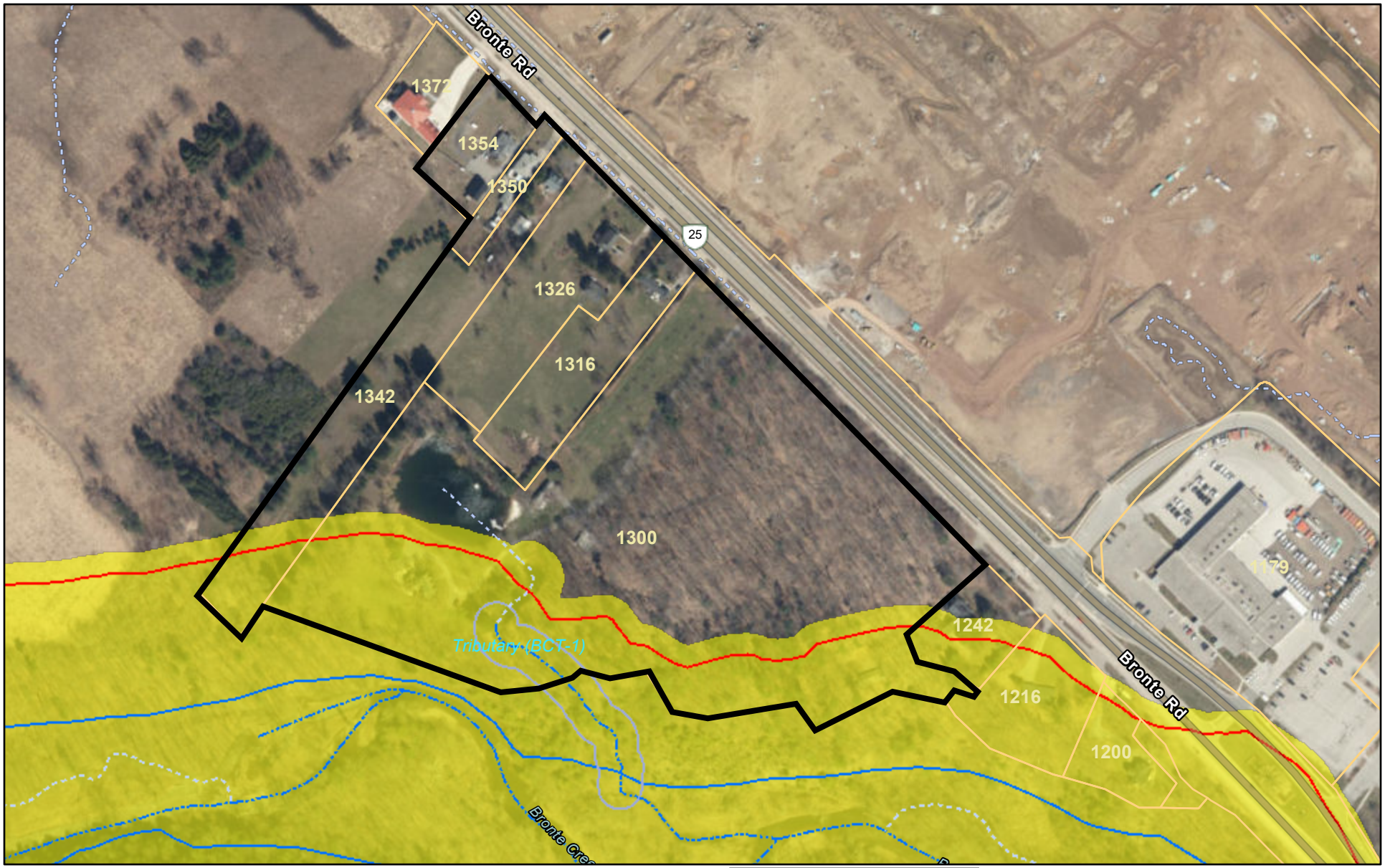
Conservation Halton Approximate Regulation Mapping



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- Parcels
- Stable Top of Bank (STOB) Hazard
- Approximate Regulation Limit
- Meander Belt Hazard
- Headwater Floodplain Hazard
- Floodplains Hazard
- Spill Zones Hazard
- Wetland Hazard
- Spill Lines

Figure 3

Note: This figure is provided for context and reflects Conservation Halton's approximate regulation limit prior to field staking and study refinement. The final constraints are shown on Figure 6.

1:5,161

0 175 350 700 ft

0 50 100 200 m

Conservation Halton, 2021

Conservation Halton, 2021

1.2 Study Area

As the EIA adopts an integrated multi-disciplinary study approach that considers not only natural heritage resources, but also the interrelationships with the physical environment, the Study Area limits vary based on the subject of investigation. For example, when characterizing surface water resources, the Study Area boundaries extend to the limits of the catchments, however when characterizing natural heritage resources, the Study Area includes lands within 120 metres (m) of the Subject Lands that were screened to confirm the presence of significant natural heritage resources (**Figure 1**).

2. Environmental Regulatory Framework

One of the objectives of an EIA is to identify how the proposal complies with applicable environmental protection legislation, regulations, and policies. A framework for evaluating compliance is provided in **Table 2** which provides a general overview of key federal, provincial and local environmental policies, legislation, and regulations that may be relevant to the project and should be considered. An evaluation of conformity using this framework is presented in **Section 10**.

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Table 2. Regulatory Framework for Environmental Protection

Level of Government	Act/Regulation/ Policy/Guideline	Type	Purpose	Relevance to the Subject Lands
Federal	*Fisheries Act* (1985) and Ontario Fisheries Regulations	Act and Regulation	To ensure the conservation and protection of fish and fish habitat.	Fish habitat is present in the Study Area. Fish and fish habitat are protected under the federal *Fisheries Act,* which was last amended on August 28, 2019, and is administered by the Fish and Fish Habitat Protection Program within Fisheries and Oceans Canada (also known as "DFO"). The protection provisions of the *Fisheries Act* apply to all fish and fish habitat throughout Canada and the Act sets out authorities for the regulation of works, undertakings or activities that risk harming fish and fish habitat. Specifically, the protection provisions include two core prohibitions. One is against persons carrying on works, undertakings or activities that result in the "death of fish by means other than fishing" (subsection 34.4[1]), and the other is "harmful alteration, disruption or destruction of fish habitat" (subsection 35[1]; also referred to as "HADD"). The protection provisions are applied in conjunction with other applicable federal laws and regulations related to aquatic ecosystems, including the federal *Species at Risk Act*. Proponents are responsible for planning and implementing works, undertakings or activities in a manner that avoids harmful impacts, specifically the death of fish and HADD of fish habitat. Where proponents believe that their work, undertaking or activity will result in harmful impacts to fish and fish habitat, DFO will work with proponents to assess the risk of their proposed work, undertaking or activity resulting in the death of fish or HADD of fish habitat and provide advice and guidance on how to comply with the *Fisheries Act*.
	Migratory Birds Convention Act (1994)	Act	To protect listed migratory bird species and their nests.	Breeding habitat for listed migratory birds is present on the Subject Lands. To comply with this legislation, activities that can potentially impact breeding birds must be avoided. Compliance with the Act will need to be demonstrated as a condition of the development application approval and prior to commencing site preparation, earthworks and construction.
	Species at Risk Act (2002)	Act	To protect the habitats of federally listed species at risk.	Habitat for federally listed Species at Risk may be present on the Subject Lands. Note that the *Species at Risk Act* applies primarily to lands under federal jurisdiction. Outside of federal lands, the *Species at Risk Act* prohibitions apply only to aquatic species and migratory birds that are also listed in the *Migratory Birds Convention Act*. This is applicable to the Subject Lands as nesting birds are present.
Provincial	*Conservation Authorities Act* (1990) and Ontario Regulation 162/06	Act and Regulation	To provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario.	The Subject Lands and Study Area contain lands that are regulated by Conservation Halton pursuant to Ontario Regulation 162/06, which is a regulation made under the *Conservation Authorities Act*. Regulated areas include the erosion hazards (i.e., stable top of bank) associated with the main Bronte Creek valley and tributary plus an additional 15m regulatory allowance. Work within Conservation Halton's regulated area requires a Permit from that agency. In addition to their regulatory role, Conservation Halton also provides peer review advice to the Region of Halton through a Memorandum of Understanding on various natural heritage and natural hazard elements of the PPS.
	Endangered Species Act (2007) and Ontario Regulations 242/08 and 830/21	Act and Regulations	This Act provides protection to the habitats of endangered and threatened species in Ontario.	Habitat for provincially listed Species at Risk may be present adjacent to the Subject Lands within the Bronte Creek valleylands. Where habitat exists for threatened or endangered species, such habitats are to be protected in accordance with the provisions of the Act and its regulations (Ontario Regulations 242/08 and 830/21). If a proposed activity has the potential to impact the habitats of threatened or endangered species, then the activity must be authorized by Ministry of Environment, Conservation and Parks (MECP). In some cases, a permit may be required to undertake an activity, while in other cases a Notice of Activity may be registered with the MECP. The Regulation provides exemptions for some species and certain types of activities.
	Fish and Wildlife Conservation Act (1997)	Act and Regulation	The *Fish and Wildlife Conservation Act* enables the Ministry of Natural Resources and Forestry (MNRF) to provide sound management of the province's fish and wildlife.	The *Fish and Wildlife Conservation Act* protects the nest or eggs of birds not already protected on the *Migratory Birds Convention Act* with some exceptions.
	Greenbelt Act (2005) and Greenbelt Plan (2017)	Act and Provincial Plan	The Greenbelt Plan identifies where development may and may not occur in order to provide permanent protection to the agricultural land base and the ecological and hydrological features, areas and functions occurring on this landscape. The Greenbelt Plan includes lands within the Greenbelt Plan area and builds upon the ecological protections provided by the Niagara Escarpment Plan	Schedule 1 (*Greenbelt Area*) confirms that portions of the Subject Lands are located within the Greenbelt Plan Area and are designated as Protected Countryside. The lands on the south and west sides of the Subject Lands, and the lands surrounding the Subject Property, overlap with portions of the Greenbelt Plan Area that are designated as Protected Countryside and subject to the policies of the Greenbelt Plan (**Figure 2**). These policies limit the types of land uses that are permitted within the Protected Countryside.

Level of Government	Act/Regulation/ Policy/Guideline	Type	Purpose	Relevance to the Subject Lands
			(NEP) and the Oak Ridges Moraine Conservation Plan (ORMCP). The Greenbelt Plan, together with the Growth Plan, the NEP and the ORMCP, builds on the Provincial Policy Statement (PPS) to establish a land use planning framework for the Greater Golden Horseshoe that supports a thriving economy, a clean and healthy environment and social equity.	*3.2.5.1 - Development or site alteration is not permitted in key hydrologic features and key natural heritage features within the Natural Heritage System, including any associated vegetation protection zone, with the exception of:* *a. Forest, fish and wildlife management;* *b. Conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all alternatives have been considered; or* *c. Infrastructure, aggregate, recreational, shoreline and existing uses, as described by and subject to the policies of section 4.*
	Planning Act (1990) and Provincial Policy Statement (2020)	Act and Policy	The Provincial Policy Statement (PPS) provides policy direction to municipalities on matters of provincial interest as they relate to land use planning and development. The PPS provides for appropriate land use planning and development while protecting Ontario's natural heritage and water resources and managing impacts of natural hazards.	All land use planning in Ontario is required to be consistent with the policies of the PPS. The PPS is to be read in its entirety however, for the purpose of this EIA, the following policies are the focus: • Section 2.1 - Natural Heritage (Policies 2.1.1 - 2.1.9); • Section 2.2 – Water (Policies 2.2.1-2.2.2); and • Section 3.1 - Natural Hazards (Policies 3.1.1-3.1.8).
	Natural Heritage Reference Manual (2010)	Guideline	This manual provides guidance for implementing the natural heritage policies of the Provincial Policy Statement.	Natural heritage features as described under Section 2.1 of the PPS are located within the Subject Lands. The protection of significant features within an NHS will need to be considered in the proposed site alteration.
	Significant Wildlife Habitat Criteria for Ecoregion 7E (2015)	Guideline	Provides the recommended criteria for identifying Significant Wildlife Habitat (SWH) within Ecoregion 7E.	SWH has been identified as one of the natural heritage feature areas under the Provincial Policy Statement. Tables 1.1 through 1.4 within the Schedules provide guidance for SWH designation for the four categories of SWH outlined in the Significant Wildlife Habitat Technical Guide and its Appendices, while Table 1.5 contains and provides descriptions for exceptions criteria for ecoregional SWH which will be identified at an ecodistrict scale. The EIA will assess the Subject Lands for potential SWH.
	Significant Wildlife Habitat Technical Guide (2000)	Guideline	This guide supports the Natural Heritage Reference Manual. It provides detailed information on the identification, description, and prioritization of significant wildlife habitat.	Planning authorities require proponents to use the guide when completing an ecological site assessment for SWH. This resource will be used to assess SWH on the Subject Lands as part of the EIA.
	Ontario Planning and Development Act (1994) and Parkway Belt West Plan (1978)	Act and Provincial Plan	The Parkway Belt West Plan (PBWP) was implemented in 1978 for the purposes of planning a multipurpose utility corridor, urban separator and linked open space system in the western GTA. A consolidated version of the PBWP was prepared in 2008, which incorporates numerous previous amendments.	In 2019, the developable limits of 1300, 1316, 1326 and 1342 Bronte Road were all removed from the PBWP through Amendment 182. In 2022, 1350 Bronte Road was removed from the PBWP. The woodlot remains within the limits of the PBWP. The woodlot is designated 'Public Open Space and Buffer Areas' which permits public, open space and linear facility uses.
Regional	Region of Halton Official Plan (2018)	Policy	The Halton Region Official Plan is made under the *Planning Act* (1990) and includes policies related to natural heritage systems, water management, servicing, soil erosion / contamination, and trees. It identifies a Natural Heritage System (NHS) that consists of both the Greenbelt NHS and the Regional NHS.	Currently, Map 1 of the Regional Official Plan identifies portions of the Subject Lands as Regional NHS. Additionally, the Subject Lands and areas adjacent to it are shown as overlaying Greenbelt Plan Protected Countryside Boundary. One of the objectives of the EIA is to evaluate features that may qualify as components of the Regional NHS System, to identify which of these are to be included within the future NHS and to demonstrate how the proposed site alteration accommodates the NHS and demonstrates no negative impacts.
Municipal	Town of Oakville Official Plan (2021 Consolidation)	Policy	The Town of Oakville Official Plan (2021 Consolidation) is made under the *Planning Act* (1990) and provides direction as to the land use within the Town. Section 27.3.8 of the Plan contains area-specific policies applicable to the Subject Lands	Like the Region of Halton NHS, the Town of Oakville has a Natural Heritage System. Schedule A1 shows the municipal NHS which is composed of a "*linked system of natural areas including natural features, hazard lands, buffers and linkages*". One of the objectives of the EIA is to evaluate features that may qualify as components of the municipal natural heritage system, to identify which of these are to be included within the refined NHS and to demonstrate how the proposed site alteration accommodate the NHS and demonstrates no negative impacts.
Conservation Authority	Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document (Conservation Halton 2020)	Policy / Guideline	These policies relate to how Conservation Halton manages its watersheds and regulates activities within areas under its jurisdiction as well as land use planning.	Portions of the Subject Lands fall within the regulation limits of Conservation Halton and these policies and guidelines provide direction to land use planning within regulated areas to ensure that land use planning and site alteration are consistent with their regulation and Provincial Policy.

3. Methodology

3.1 Background Review

To develop an understanding of past and current conditions, all available background information related to the natural heritage resources on the Subject Lands was obtained and reviewed as outlined in the EIA TOR. This included but was not limited to the following:

- Ministry of Natural Resources' Natural Heritage Information Centre (NHIC) rare species database (accessed October 2021);
- MECP Response to Species at Risk Screening Request (March 2021);
- Functional Servicing Report (Urbantech 2023);
- Geotechnical Slope Stability and Streambank Erosion Analysis 1300 Bronte Road, Oakville Ontario (Terraprobe 2016);
- Geotechnical Slope Stability and Streambank Erosion Study Long Term Stable Slope Crest Update 1300 Bronte Road, Oakville Ontario (Terraprobe 2023);
- Preliminary Geotechnical Investigation Proposed Residential Development 1300–1350 Bronte Road Oakville Ontario (DS Consultants 2023a);
- Hydrogeological Investigation: 1300, 1316, 1326, 1342, and 1350 Bronte Road, Oakville, Ontario (DS Consultants 2023b);
- Tree Inventory and Preservation Plan 1300–1350 Bronte Road Oakville Ontario (Kuntz Forestry Consulting 2023);
- Phase 2 Environmental Impact Study Merton Tertiary Planning Study Town of Oakville, Ontario (Beacon Environmental 2014);
- Enns Property 2013 Spring and Summer Inventory Results (Dance Environmental Inc. 2013);
- Enns Property 2014 and 2015 Inventory Results (Dance Environmental Inc. 2015);
- Merton Tertiary Plan Enns Property (Dance Environmental 2013);
- Halton Natural Areas Inventory (Dwyer 2006);
- Halton Region Environmentally Sensitive Areas Consolidation Report (Halton Region and North-South Environmental 2005); and
- Historical and current aerial photography and topographic mapping.

3.2 Field Investigations

3.2.1 Aquatic Habitat Assessment

Aquatic habitat in the Study Area is limited to the Bronte Creek adjacent to and outside of the Subject Lands, the Bronte Creek Tributary (BCT-1) on and adjacent to the Subject Lands, and the two artificial waterbodies (i.e., private ponds). A habitat assessment of Bronte Creek was not completed as it is distant to the proposed re-development area. An assessment of BCT-1 and the two artificial waterbodies was however completed by Beacon Environmental aquatic ecologists on June 7, 2021.

The aquatic habitat assessment followed a modified version of the Rapid Assessment Methodology as described in Section 4, Module 4 of the Ontario Stream Assessment Protocol (OSAP; Stanfield *et al*.,

2010), and involved walking around the waterbodies, following BCT-1 downstream to its confluence with the Bronte Creek and collecting information on the following aquatic habitat characteristics (where applicable):

- Stream morphology, runs, pools, riffles;
- Channel width and depth profile, bank height, bank stability;
- Substrate types and distribution;
- Seepage areas;
- Dams and obstructions;
- Riparian and in-stream cover type and extent;
- Floodplain vegetation;
- Wetland and pond areas; and
- Side channels and floodplain.

Representative photographs were also taken at the time of the assessment.

3.2.2 Ecological Land Classification and Flora

Ecological communities and flora within the Study Area have been well documented and mapped through past investigations completed by Dance Environmental on June 8, June 10, and September 20, 2012. As it has been close to a decade since these communities were last studied, Beacon conducted supplemental surveys on the Subject Lands on May 25, 2021, June 15, 2021, August 18, 2021, and September 30, 2022, to confirm community classifications, boundaries, and to document flora. Additional refinements to ecological community boundaries in the Bronte Creek valleylands on March 17, 2023, while confirming and mapping seepage areas.

Ecological communities associated with the Bronte Creek Provincial Park and distant from the area of proposed development and site alteration were subject to desktop review only.

All ecological communities in the Study Area are classified and mapped according to the *Ecological Land Classification System for Southern Ontario* (Lee *et al*. 1998).

A checklist of all vascular plant species observed from the Subject Lands, from prior studies as well as from the more recent surveys, has been compiled along with their regional and provincial status.

3.2.3 Anuran Surveys

The amphibian communities associated with the Subject Lands have been well documented through past surveys completed by Dance Environmental. Anuran (frog and toad) surveys were conducted by Dance Environmental in May 2013 in accordance with the Bird Studies Canada Marsh Monitoring Program Guidelines (Bird Studies Canada 2008). Surveys were conducted between a half hour before sunset and midnight (Dance Environmental 2013). Incidental anuran observations were also noted during other fieldwork (Dance Environmental 2013).

Beacon repeated the surveys in 2021. The surveys were completed using the standard survey protocols of the Marsh Monitoring Program (Bird Studies Canada 2008). Surveys were conducted on the evenings of April 5, May 25, and June 23, 2021, from two survey locations. The Subject Lands were visited at

least a half hour after sunset during suitable weather conditions to listen for calling frogs and toads. Survey details are included in **Table 3.**

Table 3. Anuran Survey Details

Date	Time of Survey	Weather Conditions
April 5, 2021	22:00 - 22:15	8°C, wind Beaufort 0, cloud 30%, no precipitation
May 25, 2021	23:00 - 23:15	26°C, wind Beaufort 0, cloud 80%, no precipitation
June 23, 2021	23:15 – 23:30	20°C, wind Beaufort 0, cloud 90%, no precipitation

As per the Marsh Monitoring Program, calling anurans detected were identified to species and chorus activity was assigned a code from the following options:

0 No calls;
1 Individuals of one species can be counted, calls not simultaneous;
2 Some calls of one species simultaneous, numbers can be reliably estimated; and
3 Full chorus, calls continuous and overlapping.

Using this code method, areas that support a Code 1 indicate very low population numbers in the local area, and/or low-quality breeding habitat; Code 2 is taken to indicate a moderate population and/or lower quality breeding habitat; and Code 3 is taken to indicate a healthy population and high-quality breeding habitat.

3.2.4 Bat Surveys

The forest communities on and adjacent to the Subject Lands likely support habitat for various species of bats, and possibly species that are listed as endangered in Ontario. Confirming the presence/absence of specific bat species requires acoustic monitoring which can reveal species based on their call signatures. As no development has been proposed within any of the forested communities on the Subject Lands, no snag surveys or acoustic monitoring was completed in these protected areas.

Certain bat species are however known to roost and overwinter in buildings, provided the structures can be accessed and conditions are suitable. Generally, newer buildings are well sealed and do not provide openings for bats to enter attics, however older buildings and those in disrepair can be colonized by bats. There are several structures associated with the Subject Lands, including residential dwellings, garages, and outbuildings. These structures were inspected on March 29, 2021, to confirm their suitability for supporting bats. This was confirmed visually and with handheld acoustic detectors. It was determined that there are two buildings on the Subject Lands that could potentially support habitat for bats. One building is the old garage located in the woodland at the southwestern corner of the property and the other is a residence at 1316 Bronte Road (**Figure 1**).

As the garage in the woodland is not proposed to be redeveloped, no surveys were completed at this time, however surveys should be completed in the future in advance of demolition.

Surveys of the building at 1316 Bronte Road were completed by Beacon staff on June 16 and June 17, 2021, in accordance with the methods outlined in MNRF Guelph District's *Use of Buildings and Isolated*

Trees by Species at Risk Bats: Survey Methodology (2014). The weather conditions on both nights were warm with no precipitation. Surveys began half an hour before sunset and ended an hour after sunset to capture any potential bats emerging from the surveyed building. Per the protocol, two persons completed each survey; survey locations were selected so that surveyors would have an unobstructed and comprehensive view of any bats that may be entering or exiting the building being surveyed.

3.2.5 Breeding Bird Surveys

The breeding bird community on the Subject Lands has been well documented through past surveys completed by Dance Environmental who completed on-site and off-site breeding bird surveys in 2012, 2013, 2014 and 2015 following the protocols of the 2001 Ontario Breeding Bird Atlas. Area surveys were conducted in the early mornings of June 6, 2012, June 20, 2013, June 20 and July 11, 2014, and June 24 and July 8, 2015, one half hour before sunrise to 9:00 am when winds were low and there was no precipitation.

As it has been over six years since the Subject Lands were last surveyed, Beacon repeated the breeding bird surveys in 2021. Beacon conducted two breeding bird surveys on the mornings of May 26 and June 7, 2021. These surveys were on days with low to moderate winds (0-2 Beaufort Scale), no precipitation and temperatures within 5°C of normal average temperatures. The breeding bird community was surveyed using a roving type survey, in which all parts of the Subject Lands were walked to within 50 m and all birds heard or observed and showing some inclination toward breeding were recorded as breeding species. All birds heard and seen were recorded in the location observed on an aerial photograph of the site. This survey method is superior to the point count methods as it more comprehensively documents the communities present.

A checklist of all breeding birds observed from the Subject Lands, from prior studies as well as from the more recent surveys, has been compiled along with their regional and provincial status.

3.2.6 Other Bird Related Surveys

3.2.6.1 Crepuscular Surveys

Crepuscular or twilight surveys are undertaken to confirm whether certain bird species such as Common Nighthawk, Eastern Whip-poor-will or Chimney Swift may be using an area as habitat. These species are all listed as threatened in Ontario.

Dance Environmental completed crepuscular surveys on June 19, 2013, to confirm whether Common Nighthawk or Eastern Whip-poor-will were present. This survey was conducted on a night with low wind, no precipitation, minimal cloud cover and an air temperature of 16 °C. Three inventory stations were monitored in locations where Eastern Whip-poor-will and Common Nighthawk might forage (one at the northwest edge of 1342 Bronte Road facing west off-site, one in the centre of the residential lawn associated with 1326 Bronte Road and one at the eastern edge of the large man-made pond on 1300 Bronte Road). The survey was conducted between half an hour after sunset to sunrise. Ten-minute point counts were conducted at each survey station. Common Nighthawk calls were broadcast for 1-1.5 minutes followed by 2-3 minutes of listening to see if response were observed.

Beacon conducted crepuscular surveys for Chimney Swift at 1354 Bronte Rd on June 24, 2021, between the hours of 8:30 pm and 9:45 pm. This building is the only structure proposed for removal with potentially suitable habitat (a chimney without a chimney cap). This survey was conducted following Ontario Swift Watch Protocol, with monitoring beginning half an hour before sunset and running until the monitored chimney was no longer visible. Two biologists monitored the open chimney at the surveyed building for Chimney Swift use. Surveys for Common Nighthawk and Eastern Whip-poor-will were not repeated as conditions have not changed since the time of the original surveys in 2013.

3.2.6.2 Henslow's Sparrow Survey

Surveys for Henslow's Sparrow (*Centronyx henslowii*) were conducted in open field on the adjacent Bronte Creek Provincial Park lands to the north by Dance Environmental in 2013. These surveys were conducted to determine species presence/absence, likelihood of breeding, abundance and to identify protected habitat. Point count and transect surveys were conducted on the evening of June 19 between 19:17 – 21:23, the evening of July 17 between 20:52 – 21:38 and the morning of July 20, 2013, between 7:04 – 8:00. At each survey station a four-minute period of silence was observed to listen for/observe any nearby sparrows. A pre-recorded Henslow's Sparrow song was then played for one minute, followed by a minute of silence to allow biologists to record any calling individuals. The recorded call was again played for one minute, followed by three minutes of silence. Transects were then walked between survey stations while listening for species calls. Due to size limitations of the potential habitat on adjacent lands, the distance between point counts were closer than those recommended by MNR guidelines. Surveys for Henslow's Sparrow were not repeated as suitable habitat is not present on the Subject Lands and the likelihood of this species occurring in the area is extremely low.

3.2.7 Dragonfly, Damselfly and Butterfly Surveys

The insect community on the Subject Lands has been well documented through past surveys completed by Dance Environmental. Dance Environmental conducted Lepidoptera and Odonata surveys in 2014 and 2015. Locations on the Subject Lands and within the adjacent Bronte Provincial Park Lands were surveyed on warm sunny days with low winds (Dance 2015). A butterfly net was used along with a 10x hand lens to identify species.

Field investigations for species of Odonata (dragonflies and damselflies) and Lepidoptera (butterflies, skippers and moths) were conducted by Beacon during warm, sunny days with minimal winds on June 13, July 6, August 13 and September 8, 2021. Binoculars were used to observe insect species. If required, individuals were captured using a net and examined using a hand lens before being released. Species locations were noted if they had a ranking of S4 or lower (more sensitive) or if a species generally occurs in densities low enough as to warrant mention.

3.2.8 Reptile Surveys

Dance Environmental completed turtle surveys on May 30, June 20 and July 11, 2014. Turtle surveys were also conducted on May 24, June 24 and July 8, 2015. Locations around the on-site ponds were monitored for 10 minutes, and locations were mapped on air photos. Locations were selected for clear visibility of the ponds. Surveys were conducted early in the season, on warm sunny days with limited clouds (Dance 2015).

Beacon also completed turtle surveys on the Subject Lands in 2021. These surveys consisted of slowly walking along the outer edge of the pond using binoculars to scan its perimeter and other potential basking sites within the pond. Surveys were completed between 8:00 am and 5:00 pm during sunny periods when the air temperature was greater than water temperature and after inclement weather.

Details of these surveys, including weather conditions, are included in **Table 4**.

Table 4. Basking Turtle Survey Details (Beacon)

	Survey 1	Survey 2	Survey 3
Date:	April 23, 2021	May 13, 2021	September 17, 2021
Start time:	12:30 pm	9:50 am	11:00 am
End time:	12:45 pm	10:15 am	12:00 pm
Temp:	12 °C	12 °C	24 °C
Wind (Beaufort Scale):	2	1	0
Cloud cover:	0%	0%	30%
Precipitation:	None	None	None

Dance Environmental also conducted snake coverboard surveys in 2013 to monitor for snake Species at Risk (Dance Environmental 2013). Plywood coverboards were set in suitable snake habitat throughout the Subject Lands. The coverboards were placed in areas that had good contact with the ground that received lots of sunlight (Dance Environmental 2013). The boards provide cover from predators and as the board radiates heat to the ground it attracts snakes for basking.

Snakes were also searched for as incidental observations during other field surveys completed by Dance in 2013, 2014 and 2015.

In 2021, Beacon scanned potential basking sites and the tree line near ponds for snakes on April 23 and May 13. On June 7, Beacon flipped cover objects in unmaintained areas and along BCT-1 for snakes. Note that the majority of the site is unsuitable for snakes as it is very manicured, with frequently mown grass, no debris, or brush.

3.2.9 Incidental Wildlife

Incidental wildlife observations for other wildlife groups were recorded during the course of regular fieldwork conducted by Dance Environmental and Beacon in 2021. Incidental wildlife species were identified by sight of the animal (e.g., egg, larvae, juvenile, or adult), sound of the animal, signs of the animal (e.g., tracks, scat, or fur), where the opportunity presented itself. Incidental wildlife observations were recorded by Beacon on all field investigation days.

3.3 Feature Staking

The top of slope along the Bronte Creek valley and BCT-1 was staked by Conservation Halton on August 18, 2021. The boundaries of woodlands associated with the Subject Lands and adjacent lands were staked by Region of Halton representatives on September 7, 2021. The staked limits of these

features were surveyed by an OLS from JD Barnes. Copies of the survey plans were subsequently circulated to the agencies for review and confirmation.

4. Existing Conditions

The following sections characterize biophysical resources associated with the Study Area using background information that has been supplemented with site-specific investigations or studies.

4.1 Physical Resources

4.1.1 Physiography

The Subject Lands are located on the south slope of the Trafalgar Moraine, a 'till moraine' originally mapped by Chapman and Putnam (1984). The Trafalgar Moraine consists of a belt of gently undulating topography extending across the Oakville area. The Iroquois Plain is mapped to the south of the moraine. The Iroquois Plain formed in the basin of glacial Lake Iroquois and is often characterized by coarse sand and gravel. The north edge of this plain, referred to as the Lake Iroquois shoreline, is roughly coincident with Highway 403/QEW (Karrow 1964) to the south of the Subject Lands.

4.1.2 Soils

Soils are described in the *Preliminary Geotechnical Investigation*'s for 1300–1350 Bronte Road (DS Consultants 2023a) as generally consisting of a layer of topsoil followed by fill material consisting of sandy silt/silty sand, sand, gravel and clayey silt to depths of 3 m below existing grade. Below the fill, cohesionless deposits consisting of silt, silty sand to sand silt and gravelly sand to sand and gravel were encountered in most boreholes except BH20-5 to BH20-7 and BH 20-11 at depths ranging from 2.3 to 6 m (DS Consultants 2023a). Cohesive deposits were encountered in all boreholes below the cohesionless deposits and consisted of silty clay and clayey silt till. Sandy deposits below this ranged from 6 m to 8.2 m below ground surface (DS Consultants 2023a). Topsoil typically ranged in thickness from 75 mm to 180 mm, however the depth may vary across the site (DS Consultants 2023a). Fill was identified at all boreholes at depths varying from 0.8 to 3 m.

Inferred shale bedrock of the Queenston Formation was encountered at depths varying from 6.1 to 12.2 m below existing grade (Terraprobe 2016, 2023).

4.1.3 Topography and Drainage

The tableland portion of the Subject Lands is relatively flat and comprised of well landscaped residential properties. The western limits of the Subject Lands and Study Area are defined by the steep slopes of the Bronte Creek valleylands. The slope elevations range from 132 m above sea level (masl) on top to 98 masl at the bottom of the valley located off the Subject Lands (Terraprobe 2016, 2023).

Bronte Creek is the main watercourse adjacent to the Subject Lands. The tableland portion of the Subject Lands supports two artificial waterbodies (dug ponds), one large (0.41 ha) and another smaller (0.05 ha) that are connected by a culvert. The large pond drains into the smaller pond which then outlets to BCT-1. The artificial waterbodies are not individually mapped within the CH regulated area (**Figure 3**). However, the southern portion of the smaller artificial waterbody and the associated BCT-1 exist within the defined regulated limit of Bronte Creek and therefore may be regulated by CH.

BCT-1 conveys drainage from the artificial waterbodies into a steep gully and onto the Bronte Creek floodplain. BCT-1 terminates in an alluvial fan comprised of coarse sediments which diffuses the flow. Flows in the upper portion of BCT-1 are ephemeral and only flow during storm events, however in the lower reach and on the floodplain of Bronte Creek, flows are supplemented by seeps on the valley slope and are intermittent.

4.1.4 Hydrogeology

A hydrogeological investigation report was completed for the Subject Lands by DS Consultants Ltd. (2023b). This report describes groundwater levels as being between 0.92 m and 5.1 m below existing ground surface (DS Consultants 2023b). Groundwater flow was inferred to be northeast towards Fourteen Mile Creek and west towards Bronte Creek (DS Consultants 2023b).

4.2 Aquatic Habitat

4.2.1 Artificial Waterbodies

The larger of the two artificial waterbodies (herein referred to as the 'large pond') has a surface area of 0.41 ha. It is steep sided and has a depth of up to 3.0 m. The large pond is largely open water with areas of emergent aquatic vegetation (mostly along the northern shoreline), an extending dock and small beach within its margins. In-water habitat is provided by the nearshore emergent and submergent aquatic vegetation. The south/west shoreline area is comprised of maintained lawn to the water's edge, and the north/northeast shore is lawn with planted trees.

A small patch of iron staining was observed along the margin of the large pond. While the large pond is considered to be groundwater fed (DS Consultants 2023b), the observations of iron staining along the pond edge are consistent with shallow interflow, rather than a seep or spring produced by groundwater discharge.

Baitfish species, such as Pumpkinseed (*Lepomis gibbosus*) and Largemouth Bass (*Micropterus salmoides*), were observed to be utilizing the in-water cover provided by the aquatic vegetation and a small wooden dock within the large pond. The previous landowner noted that all fish species had been anthropogenically introduced into the pond habitat.

The smaller of the two artificial waterbodies (herein referred to as the 'small pond') has a surface area of 0.05 ha and is located south of the large pond and is approximately 3 m deep. The large pond discharges to the small pond through a culvert (approximately 30 m in length) under an existing driveway. The small pond appeared to drain via an overflow drain that outlet through a small, constructed berm at the top of the valley slope and into the BCT-1. At the time of investigation, the water levels were not overtopping the drain. The nearshore slope of the small pond is steep. At the time of

investigation, the centre of the small pond was open water, presumably maintained by a small bottom circulation system. Dense aquatic macrophyte growth provided most of the in-water cover which included floating, emergent and submergent (in order of dominance) plants. Large woody debris provides some nearshore cover, however in minimal amounts. Other than the open water area being agitated by the aeration system, the water was stagnant in the ponds marginal areas. The surrounding riparian area is dominated by large mature trees and the pond was heavily shaded. No fish were observed at the time of the investigation; however, dense vegetation may have limited visibility.

4.2.2 Bronte Creek Tributary (BCT-1)

BCT-1 conveys drainage from the small pond in a southwest direction for approximately 130 m to its confluence with the floodplain of Bronte Creek. The geomorphic assessment (GEO Morphix 2023) divided BCT-1 into three distinct reaches. To maintain consistency this report will use the same naming convention for when describing the aquatic existing conditions within BCT-1. These are identified from upstream to downstream as reaches BCT-1a, BCT-1b and BCT-1c (see **Figure 4**). Furthermore, the aquatic and fish habitat features described below have been greatly influenced by the varying geomorphic conditions identified for each reach.

South of the small pond is a small, constructed berm, below which the small pond outlets into the beginning of the BCT-1 feature at the top of valley slope. At the pond outlet, there was a collection of standing water within the channel. As mentioned above, water levels in the small pond were not high enough to be conveying flow to the tributary. The BCT-1a reach is channeled through a high gradient ravine associated with the Bronte Creek valley slope. Its banks are defined by the surrounding steeply sloping gully, of which, a small (0.5 m) incision that defines the frequent flow path was observed. The channel bed comprises a silt- and sand-dominant substrate under a leaf litter layer and was saturated; however, there was no flowing water throughout the investigated reach. The gully feature is approximately 13 m wide and 6-7 m deep. The observed exposed banks and tree roots are indicative of active erosion. Woody vegetation, shrubs, and trees are not present in the areas of active erosion. The base of the steep gully contains a deposit of large woody debris and leaf litter. The woody debris at the bottom of the reach has created several knickpoints; one knickpoint approximately 0.5 m in height and one knickpoint approximately 1.0 m in height. The accumulation of large woody debris associated with the knickpoints, and the high gradient sloped gully feature, present an impediment for any potential upstream fish movement.

The base of the sharp slope is where the reach break for BCT-1a ends and BCT-1b starts. Within reach BCT-1b, the gully widens, the slope is reduced, and the channel follows a more natural morphology. The channel substrates associated with this reach are comprised of silt, sand, and cobble dominant and there is more vegetative (herbaceous and groundcover) growth throughout. In stream cover is provided by cobble and small woody debris. As noted throughout this report, one confirmed seep was identified west of BCT-1b, and another seep was associated with BCT-1c. The location of seeps, as well as others that occur along the valley slope, are illustrated on **Figure 4.**

Portions of reach BCT-1b appear to have intermittent flow within the channel. In areas of flowing water, the mean wetted width of the channel is approximately 0.75 m wide. Further downstream in this reach, the accumulation of groundwater inputs throughout the surrounding valley slope significantly increased the amount of water and the rate of flow within the channel.

Downstream of reach BCT-1b, in reach BCT-1c, the channel intersects with an alluvial fan and flows are dispersed. The gradient is less steep and drainage to Bronte Creek is conveyed as sheet flow through dense herbaceous vegetation. There is no distinct channel outlet to Bronte Creek.

No fish were observed within any of the reaches of BCT-1. Impediments to fish passage are evident in all reaches; however, under high flood stage conditions in Bronte Creek, fish movement into reaches BCT-1c and perhaps even BCT-1b may be possible.

As noted by GEO Morphix during the agency site meeting on March 24, 2023, the upstream reach of BCT-1 has been subject to previous alteration including a small outbuilding adjacent to the channel and berm at the top of slope. Immediately adjacent to the small outbuilding, there is a knickpoint in the channel, which is approximately 1.0 m in height, significant bank undercutting, and exposed tree root masses.

4.2.3 Fish Community

The fish community in Bronte Creek is known and has been well documented through multiple studies. Fish community sampling was not completed within the artificial waterbodies on the Subject Lands. Field investigations have identified a fish population in the large pond, however, correspondence with the previous landowner has confirmed that all fish species have been historically introduced by the landowner. Known introduced species include Pumpkinseed, Bluegill (*Lepomus macrochirus*) and Largemouth Bass (Dance Environmental 2015).

As is noted in the preceding section, no fish were observed in any of the BCT-1 reaches. The upper most reach BCT-1a represents a significant impediment to fish movement and is considered indirect fish habitat. The lower reaches, BCT1-b and BCT1-c also contain impediments to fish moving upstream from Bronte Creek, however under flooded conditions, it is possible that fish can access these reaches. As a result, BCT1-b and BCT1-c provide seasonal habitat for the fish community within Bronte Creek.

4.3 Ecological Land Classification

Eight ecological communities were identified as being associated with the Subject Lands (ELC Units 1-8). An additional four ecological communities (ELC Units 9-12) were identified on the broader Study Area and were ground-truthed. One additional ecological community (ELC Unit 13) was identified in the broader Study Area based on desktop review only. These are described below and illustrated on **Figure 4**.

ELC Unit 1: Dry-Fresh Sugar Maple-Beech Deciduous Forest (FOD5-2)

This mature deciduous forest community is located along the south/east edge of the property. The forest is dominated by mid-aged to mature Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), Red Oak (*Quercus rubra*), and Black Cherry (*Prunus serotina*). The canopy is closed resulting in a relatively sparse understorey. Understorey species include Chokecherry (*Prunus virginiana*), Sugar Maple saplings, and Alternate-leaved Dogwood (*Cornus alternifolia*). Dominant ground cover species include Garlic Mustard (*Alliaria petiolata*), Enchanter's Nightshade (*Circaea canadensis*), Sugar Maple seedlings, Jack-in-the-pulpit (*Arisaema triphyllum*), and Herb Robert

Legend

- Subject Lands
- Study Area
- Contours (1 m interval - CH, 2021)
- Ecological Communities (Ground Truthed)
- Ecological Communities (Desktop Analysis)
- Reach Break (digitized from GEO Morphix 2023)
- Bronte Creek Tributary [BCT-1] (GEO Morphix - Mar 2023)
- Watercourse (MNRF 2021)
- Butternut Assessed by Kuntz Forestry Consulting (2021, 2023)
- Wood Thrush Singing Male (Dance 2013)
- Snake Cover Board Aggregation (Dance 2013b)
- Confirmed Seeps

Unit	ELC Community Type
1	Dry-Fresh Sugar Maple-Beech Deciduous Forest (FOD5-2)
2	Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3)
3	Mineral Meadow Marsh (MAM2)
4	Duckweed Mixed Shallow Aquatic (SAM1-2)/Open Water Aquatic (OAO)
5	Open Water Aquatic (OAO)
6	Hedgerow
7	Anthropogenic
8	Dry-Fresh Hemlock Mixedwood Forest
9	Mixed Plantation (CUP2)
10	Cultural Meadow (CUM) - Some areas subject to prairie restoration efforts in Bronte Creek Prov. Park
11	Cultural Woodland (CUW)
12	Fresh-Moist White Cedar-Sugar Maple Mixed Forest (FOM7-1)
13	Deciduous Swamp (SWD)
	*ELC Unit 2c contains an Open Bluff inclusion

Existing Conditions and ELC Communities

Figure 4

Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville, ON

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: April 2023

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.

Prepared by: SZ
Checked by: KU

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(*Geranium robertianum*). This community has a high proportion of native species, however there are patches of invasive species that may over time impact upon the composition.

ELC Unit 2: Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3)

This mature deciduous forest community is located along the steep valley wall of Bronte Creek on the west side of the property. The canopy consists of White Oak (*Quercus alba*), Sugar Maple, Red Oak, Basswood (*Tilia americana*), Black Cherry, with some White Pine (*Pinus strobus*), and Eastern Hemlock (*Tsuga canadensis*). Understory shrubs include Maple-leaf Viburnum (*Viburnum acerifolium*), Round-leaved Dogwood (*Cornus rugosa*), Witch-hazel (*Hamamelis virginiana*), and Bush Honeysuckle (*Diervilla lonicera*). This forest supports a high diversity of native ground covers, including a number of regionally uncommon species (see **Section 4.4**). Dominant ground covers include False Solomon's Seal (*Maianthemum racemosum*), Pennsylvania Sedge (*Carex pennsylvanica*), Zig-zag Goldenrod (*Solidago flexicaulis*) and Large-leaved Aster (*Eurybia macrophyllum*). A Butternut (*Juglans cinerea*), identified by Kuntz Forestry Consulting (2023) as NT26, is present in ELC Subunit 2a, but it is more than 25 m from the limit of the proposed development.

This community spans the Subject Lands boundary. ELC Subunit 2c is located outside of the Subject Lands and contains an (~0.5 ha) Open Bluff (BLO1) inclusion.

ELC Unit 3: Mineral Meadow Marsh (MAM2)

This small marsh (0.01 ha) is located along the south/east side of the property and is associated with a low area at the outlet of the small artificial pond (ELC unit 4). This feature is dominated by Common Reed (*Phragmites australis*), Spotted Jewelweed (*Impatiens capensis*), Field Horsetail (*Equisetum arvense*), and Coltsfoot (*Tussilago farfara*).

ELC Unit 4: Duckweed Mixed Shallow Aquatic (SAM1-2) / Open Water Aquatic (OAO)

This unit corresponds with the small artificial pond feature (0.05 ha). It supports Lesser Duckweed (*Lemna minor*), pondweeds (*Potomageton* spp.), and Eurasian Water-milfoil (*Myriophyllum spicatum*). The edges support emergent vegetation such as Common Reed, Reed Canary Grass (*Phalaris arundinacea*), and Broad-leaved Cattail (*Typha latifolia*). The center of the community is open water.

ELC Unit 5: Open Water Aquatic (OAO)

This feature corresponds with the large artificial pond (0.41 ha) and supports minimal aquatic vegetation, consisting of Eurasian Water-milfoil and Fragrant Water-lily (*Nymphaea odorata*). Emergent vegetation along the pond margins includes Pickerelweed (*Pontedaria cordata*), Fox Sedge (*Carex vulpinoidea*), Narrow-leaved Cattail (*Typha angustifolia*), and Joe-Pye Weed (*Eutrochium maculatum*).

ELC Unit 6: Hedgerow

This hedgerow feature consists of Norway Spruce (*Picea abies*), Sugar Maple, Austrian Pine (*Pinus nigra*), and three Butternut (identified as Trees 461, 467, and 468 by Kuntz Forestry Consulting (2023)).

Ground covers include Garlic Mustard, Enchanter's Nightshade, Tall Goldenrod (*Solidago altissima*), and Orchard Grass (*Dactylis glomerata*).

ELC Unit 7: Anthropogenic

Much of the property was classified as "Anthropogenic" which corresponds with existing residential buildings, lawn, and driveways. Scattered trees include Red Oak, Apple, Silver Maple (*Acer saccharinum*), Black Walnut (*Juglans nigra*), White Cedar (*Thuja occidentalis*), and one hybrid Butternut (*J. x bixbyi*) as determined by Kuntz Forestry Consulting (2023).

ELC Unit 8: Dry-Fresh Hardwood-Hemlock Mixedwood Forest (FOM3)

This feature is a mature forest on the southwestern side of the Subject Lands that is dominated by Eastern White Cedar (*Thuja occidentalis*), White Pine (*Pinus strobus*), Sugar Maple (*Acer saccharum*), and White Oak (*Quercus alba*). The canopy results in fairly dense shade, resulting in a sparse understorey. Understory shrubs include Maple-leaf Viburnum (*Viburnum acerifolia*), and Witch-hazel. This forest supports a good diversity of native ground covers, including a number of regionally uncommon species (see **Section 4.4**). Dominant ground covers include False Solomon's Seal, Pennsylvania Sedge (*Carex pennsylvanica*), and Large-leaved Aster (*Eurybia macrophyllum*).

ELC Unit 9: Mixed Plantation (CUP2)

This woodland community is located within the Study Area adjacent to the Subject Lands to the northwest. It consists of a mix of young to mid-aged planted coniferous and deciduous trees, including White Cedar, Norway Spruce, White Spruce (*Picea glauca*), White Ash (*Fraxinus americana*), Black Walnut, and Eastern Cottonwood (*Populus deltoides*). Ground covers and understory vegetation are sparse where coniferous trees are dense, while in more open areas, herbaceous and shrub cover increases. Dominant species include European Buckthorn (*Rhamnus cathartica)*, Wild Red Raspberry (*Rubus idaeus ssp. strigosus*), Black Raspberry (*R. occidentalis*), Garlic Mustard, Avens (*Geum sp.*), and Thicket Creeper (*Parthenocissus vitacea)*.

ELC Unit 10: Cultural Meadow (CUM1)

This old field community is present on the adjacent Bronte Creek Provincial Park lands. The south subunit (10b) has been identified as a Prairie Restoration by Dance Environmental (2013b).

ELC Unit 11: Cultural Woodland (CUW1)

This community is on the adjacent Bronte Creek Provincial Park lands. Subunit 11a was a plantation established in the late 1970s that was subsequently thinned/opened up in the late 1980s or early 1990s. Portions of the Subunit 11a include Norway Spruce.

According to Dance (2013b), subunit 11b consists of colonizing species including Trembling Aspen (*Populus tremuloides*), Green Ash (*Fraxinus pennsylvanica*), and Norway Maple (*Acer platanoides*). Understorey species include Alternate-leaved Dogwood, European Buckthorn (abundant), Gray

Dogwood (*Cornus racemosa*), and Staghorn Sumac (*Rhus typhina*). Ground cover includes a mix of moisture tolerant species, introduced species and native flora, including Sensitive Fern (*Onoclea sensibilis*), Spotted Jewelweed, Dame's Rocket (*Hesperis matronalis*), Garlic Mustard, False Solomon's Seal, and Green Ash seedlings. The only significant species is a Butternut, labelled as NT27, which is more than 25 m from the limits of the proposed development (Kuntz Forestry Consulting 2023).

ELC Unit 12: Fresh-Moist White Cedar-Sugar Maple Mixed Forest (FOM7-1)

This community includes the lower reaches of BCT-1 along with an alluvial fan and is dominated by Eastern White Cedar and Sugar Maple. It has canopy/subcanopy associates of Eastern Hemlock, Sycamore (*Platanus occidentalis*), Bitternut Hickory (*Carya cordiformis*), Shagbark Hickory (*C. ovata*), Yellow Birch (*Betula alleghaniensis*), and Eastern Hop-Hornbeam *(Ostrya virginiana*). Several Green Ash were found in the subcanopy; however, all were dead/dying from Emerald Ash Borer (*Agrillus planipenis*) infestation. The understorey was open, with few specimens of American Beech and Blue-Beech (*Carpinus caroliniana*). Three specimens of Black Ash (*Fraxinus nigra*) were observed: one dead and two imminent due to Emerald Ash Borer infestation. The understorey is dominated by Spotted Jewelweed, with associates of Field Horsetail, Coltsfoot, Bitter Cress (*Cardamine sp.*), and Purple-Flowering Raspberry (*Rubus odoratus*).

Seepage indicator species were observed in this community, including several patches of Eastern Rough Sedge (*Carex scabrata*) and Spreading Goldenrod (*Solidago patula*), where the latter was associated with the largest seep, which was to the east and distal to BCT-1. The seeps were associated with aggregations of mineral precipitates and dissolved bioclastic limestones.

ELC Unit 13: Deciduous Swamp (SWD)

This community is located on a braid bar at the base of the Bronte Creek valley, which is bordered by both watercourse channels. The north channel is filling in with wetland vegetation; however, this community was not accessible by foot. The Halton Natural Areas Inventory (Dwyer 2006) ELC mapping identifies this community as a wetland. Air photo interpretation by Beacon and ground-truthing of adjacent ELC Unit 12, confirms that this community is dominated by deciduous trees.

4.4 Flora

A total of 257 vascular plant species were identified during botanical field investigations in 2012, 2013, 2021, 2022, and 2023. A list of flora recorded during field surveys is presented in **Appendix B.** Of the 257 species, 74 (29%) are non-native in Ontario or hybrid. The majority of the native species are ranked S5 or S4 by the NHIC, indicating they are secure (S5) or apparently secure (S4) provincially.

Two of the observed species are ranked S2?: Honey Locust (*Gleditsia triacanthos*) and Butternut. A ranking of S2? indicates that the species is imperilled provincially. Honey Locust is not designated endangered or threatened in Ontario. This species was observed in 2012 within ELC Unit 7 and during tree inventory work completed by Kuntz Forestry Consulting (2023). Butternut is designated as an endangered species in Ontario. The locations of the three Butternut trees that are within 25 m of the limit of proposed development are illustrated in **Figure 4**. All three of these Butternuts have been evaluated by Kuntz Forestry Consulting (2023), in accordance with the ESA and associated

regulations/guidelines, and do not represent constraints. See the Tree Inventory and Preservation Plan (Kuntz Forestry Consulting 2023) for further details.

Using the vascular plant status from the Halton Natural Areas Inventory (Crins *et al* 2006), there are 19 species identified from the Subject Lands that are considered uncommon in the Region and 3 species that are considered Regionally rare. A list of Regionally rare and uncommon species and their location is provided in **Table 5**. These species are primarily associated with forest ELC Units 1, 2 and 8 and the larger pond ELC Unit 5. The rare and uncommon species associated with the pond are considered adventive as they are species commonly used to landscape backyard ponds.

Table 5. Regionally Rare and Uncommon Plant Species

Scientific Name	Common Name	S-Rank	Halton Status (Crins *et al*., 2006)	Location (ELC Unit)
Bidens vulgata	Tall Beggarticks	S5	Uncommon	7*
Borodinia canadensis	Canada Rockcress	S4?	Uncommon	2
Cardamine sp. (presumed *C. pensylvanica*)	Pennsylvania Bittercress	S5	Uncommon	12
Caulophyllum giganteum	Giant Blue Cohosh	S5	Requires further review	Not identified in background reporting!
Celtis occidentalis	Common Hackberry	S4	Rare	1
Collinsonia canadensis	Canada Horsebalm	S4	Uncommon	1*
Erigeron pulchellus	Robin's-plantain Fleabane	S5	Uncommon	2
Galium boreale	Northern Bedstraw	S5	Uncommon	2
Hepatica americana	Round-lobed Hepatica	S5	Uncommon	2b*, 8*
Luzula acuminata	Hairy Woodrush	S5	Uncommon	8*
Luzula multiflora	Many-flowered Woodrush	S5	Uncommon	2
Micranthes virginiensis	Early Saxifrage	S5	Uncommon	8*
Myrica gale	Sweet Gale	S5	Rare	5
Nuphar variegata	Variegated Pond-lily	S5	Uncommon	5*
Nymphaea odorata	Fragrant Water-lily	S5	Uncommon	5
Platanus occidentalis	Sycamore	S4	Rare	7*
Poa alsodes	Grove Bluegrass	S4	Uncommon	1
Potentilla simplex	Old-field Cinquefoil	S5	Uncommon	2
Quercus velutina	Black Oak	S4	Uncommon	2b*, 6*, 7*, 8*
Sassafras albidum	Sassafras	S4	Uncommon	8*
Solidago patula	Spreading Goldenrod	S4	Uncommon	12
Taenidia integerrima	Yellow Pimpernel	S4	Uncommon	2
Vitis aestivalis	Summer Grape	S4	Uncommon	2

! Noted during 2013 spring flora survey by Dance Environmental

* Noted during 2012 flora surveys by de Gruchy Environmental for Dance Environmental

A detailed Arborist Report and Tree Inventory Preservation Plan has been prepared under separate cover by Kuntz Forestry Consulting (2023).

4.5 Anuran Surveys

Dance Environmental did not detect any anuran species calling within the Subject Lands (Dance Environmental 2013). Three Green Frogs (*Lithobates clamitans*) were observed sitting in the water southwest of the smaller pond but not calling. Numerous American Toads (*Anaxyrus americanus*) were heard calling from the Bronte Creek valleylands to the west of the Subject Lands (Dance Environmental 2013).

Two frog species, Green Frog and Spring Peeper (*Pseudacris crucifer*) were recorded calling within the Subject Lands during Beacon's amphibian surveys in 2021. Young American Toad were observed incidentally on the lawn. These species are considered common and abundant in southern Ontario and are not of conservation concern.

The findings of the 2021 anuran calling surveys are summarized in **Table 6**.

Table 6. Anuran Calling Count Results

Station	Survey 1	Survey 2	Survey 3
1	-	-	GRFR 1-(1)
2	SPPE*	-	GRFR 1-(3)

*=Call recorded from outside station area

GRFR = Green Frog, SPPE = Spring Peeper

Chorus Code:

1. Individuals of one species can be counted, calls not simultaneous. Number of individuals observed in brackets;
2. Some calls of one species simultaneous, numbers can be reliably estimated. Number of individuals observed in brackets; and
3. Full chorus, calls continuous and overlapping.

The anuran population on the Subject Lands is low in species richness and in diversity. While the artificial ponds do provide potential habitat, they are stocked with predatory fishes, which precludes amphibian production. In addition to the anuran surveys, searches for egg masses of other amphibians were conducted but none were observed.

4.6 Bat Surveys

Beacon completed exit surveys for the building located at 1316 Bronte Road in 2021. Five species of bats were recorded by the handheld detectors in the vicinity of the building. Species detected include Big Brown Bat (*Eptesicus fuscus*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Silver-haired Bat (*Lasionycteris noctivagans*) and Northern Myotis (*Myotis septentrionalis*) Northern Myotis is a provincially listed endangered species. Notably, no bats were observed exiting the building during the surveys.

It is assumed that the Northern Myotis calls were recorded while foraging, or simply moving from their roosting habitat to foraging habitat and it is probable that the Northern Myotis in this area are roosting within the adjacent forest communities.

Bat habitat assessments and acoustic monitoring was not completed within the forested habitats on the Subject Lands as these are contained within the Greenbelt and RNHS and will not be developed. Due to the abundance of potential roosting habitat, including listed species, it is assumed habitat is present.

As was noted in **Section 3.2.4**, it will be necessary to survey the garage structure in the woodland for SAR bats prior to its demolition in the future.

4.7 Breeding Bird Surveys

Breeding bird surveys were conducted on the Subject Lands by A. Keaveney in 2012. 26 bird species were observed / heard during the breeding bird surveys, including Wood Thrush (special concern) which was observed in ELC Unit 1 and Eastern Wood-Pewee (special concern) was heard calling from the Bronte Creek valleylands off the Subject Lands.

Dance Environmental also conducted breeding bird surveys in 2013, 2014 and 2015. Targeted surveys were completed for Henslow's Sparrow, Eastern Whip-poor-will and Common Nighthawk and none of these target species were detected. Breeding bird surveys of adjacent Bronte Creek Provincial Park lands identified 28 species in 2013. Species of note included a female Cooper's Hawk on a nest, a foraging Barn Swallow, a Great Horned Owl and a single post-breeding Chimney Swift flying overhead. Surveys conducted in 2014 and 2015 documented Eastern Wood-Pewee in ELC Unit 1 and Barn Swallow was observed foraging over the large pond (ELC Unit 5).

Beacon conducted breeding bird surveys on the Subject Lands in 2021 and detected a total of 22 species (**Appendix C**). The composition of the breeding bird community is reflective of the habitats present on the Subject Lands that are dominated by open anthropogenic spaces, artificial ponds and forest habitats.

The avian community is comprised of species that are indicative of anthropogenic, rural settings. The most abundant species was American Robin (*Turdus migratorius*) with 6 territories present, and Blue Jay (*Cyanocitta cristata*), House Wren (*Troglodytes aedon*), European Starling (*Sturnus vulgaris*), Northern Cardinal (*Cardinalis cardinalis*), Song Sparrow (*Melospiza melodia*), Red-winged Blackbird (*Agelaius phoeniceus*), Common Grackle (*Quiscalus quiscula*), Baltimore Oriole (*Icterus galbula*), and House Sparrow (*Passer domesticus*) all had multiple territories present.

The large pond provided breeding habitat for two species of waterfowl, Canada Goose (*Branta canadensis*) and Hooded Merganser (*Lophodytes cucullatus*) in addition to the previously mentioned Red-winged Blackbirds.

Forest edges on the west and south borders of the property supported forest species including Eastern Wood-Pewee (*Contopus virens*), Great Crested Flycatcher (*Myiarchus crinitus*) and White-breasted Nuthatch (*Sitta carolinensis*). The nuthatch is an area-sensitive species, which requires larger tracts of suitable habitat in which to breed or has a higher breeding success in larger areas of suitable habitat. However, it is still a common species in a variety of woodlands including those close to human habitation.

No species provincially ranked as S1 through S3 (Critically Imperiled through Vulnerable) or species regulated under the ESA were encountered. However, Eastern Wood-Pewee, listed as Special Concern was observed, with one on the eastern edge of the Subject Lands in ELC unit 1. Though this species is

Special Concern provincially and federally based on a declining trend over their range, these birds remain relatively common in both urban and urbanizing woodlands. They are somewhat tolerant of forest fragmentation and will live in both edge habitats and forest interiors.

Beacon did not observe any Chimney Swift on the Subject Lands.

4.8 Insect (Dragonfly and Damselfly) Surveys

Odonates

Dance Environmental identified 13 dragonfly and damselfly species on the Subject Lands in 2012, with the majority found around the two artificial ponds on 1300 Bronte Road. In 2014 & 2015 Dance observed 28 species of Odonates on the Subject Lands. No species currently ranked S1-S3 were observed.

Beacon identified a total of thirty-two species and 516 dragonflies and damselflies individuals were observed on the Subject Lands. Of the taxa identified to species level, fifteen of these species are ranked as S5, ten are S4, two are non-native and one was ranked S3.

By far the most productive areas were those associated with the large pond. The small pond appeared to provide poor habitat for odonates, as there were few observations within the immediate area. Most species were observed at the large pond, although predatory fish have been observed in this feature which limits Odonate diversity.

Table 7. Dragonflies and Damselflies (Odonata) Recorded on the Subject Lands

Common Name	Scientific Name	Total Recorded	Provincial S rank	Region of Halton Status (Rothfels 2006)
Mosaic Darners	*Aeshna sp*	2	n/a	n/a
Shadow Darner	*Aeshna umbrosa*	3	S5	HU
Common Green Darner	*Anax junius*	17	S5	Common
Comet Darner	*Anax longipes*	2	SNA	n/a
Powdered Dancer	*Argia apicalis*	1	S4	HR
Variable Dancer	*Argia fumipennis*	29	S5	n/a
Lilypad Clubtail	*Ariogomphus furcifer*	5	S4	HR
Calico Pennant	*Celithemis elisa*	5	S5	Common
Halloween Pennant	*Celithemis eponina*	2	S4	HR
Azure Bluet	*Enallagma aspersum*	37	S4	HR
Double-striped Bluet	*Enallagma basidens*	7	S3	Somewhat likely to occur in the Region due to presence in adjacent municipalities
Familiar Bluet	*Enallagma civile*	82	S5	Common

Common Name	Scientific Name	Total Recorded	Provincial S rank	Region of Halton Status (Rothfels 2006)
Skimming Bluet	*Enallagma geminatum*	1	S4	HR
Enallagma species	*Enallagma sp*	3	n/a	n/a
Common Baskettail	*Epitheca cynosura*	7	S5	HU
Eastern Pondhawk	*Erythemis simplicicollis*	10	S5	Common
Fragile Forktail	*Ischnura posita*	36	S4	HR
Eastern Forktail	*Ischnura verticalis*	69	S5	Common
Spreadwing species	*Lestes sp*	1	n/a	n/a
Swamp Spreadwing	*Lestes vigilax*	1	S4	n/a
Widow Skimmer	*Libellula luctuosa*	19	S5	Common
Twelve-spotted Skimmer	*Libellula pulchella*	12	S5	Common
Blue Dasher	*Pachydiplax longipennis*	57	S5	Common
Wandering Glider	*Pantala flavescens*	1	S4	HR
Eastern Amberwing	*Perithemis tenera*	9	S4	HU
Common Whitetail	*Plathemis lydia*	5	S5	Common
White-faced Meadowhawk	*Sympetrum obtrusum*	3	S5	Common
Ruby Meadowhawk	*Sympetrum rubicundulum*	2	S5	Common
Meadowhawk sp.	*Sympetrum sp.*	16	n/a	n/a
Autumn Meadowhawk	*Sympetrum vicinum*	33	S5	HU
Black Saddlebags	*Tramea lacerata*	30	S4	Common
Red Saddlebags, tentative ID	*Tramea onusta*	9	SNA	n/a

Legend: Provincial Status (Srank): S5 = Secure; S4 = Apparently Secure; S3 = Vulnerable; Region of Halton Status: HR = Regionally Rare, HU = Regionally Uncommon.

Lepidoptera

Dance Environmental identified 4 butterfly species on the Subject Lands in 2012 and 20 species in 2014 & 2015. All species observed by Dance are considered stable populations within Ontario.

A total of 16 species / 112 individuals were documented by Beacon in 2021. Of the taxa identified to the species level, ten are ranked as S5, two as S4, and one, Monarch, as S2N, S4B (the imperilled status S2N applying to non-breeding aggregations). Monarch is also of Special Concern provincially and was observed migrating in the orchard. **Table 8** provides the results of the lepidopteran surveys.

Table 8. Lepidoptera Recorded on the Subject Lands

Common Name	Scientific Name	Total Recorded	Provincial S rank	Region of Halton Status (Wormington 2006)
Azure sp.	*Celastrina sp.*	2	N/A	n/a
Common Wood-Nymph	*Cercyonis pegala*	4	S5	Common
Common Ringlet	*Coenonympha tullia*	1	S5	Common
Clouded Sulphur	*Colias philodice*	16	S5	Common

Common Name	Scientific Name	Total Recorded	Provincial S rank	Region of Halton Status (Wormington 2006)
Monarch	*Danaus plexippus*	11	S2N,S4B	Common
Dun Skipper	*Euphyes vestris*	1	S5	Common
Viceroy	*Limenitis archippus*	2	S5	Common
Little Wood Satyr	*Megisto cymela*	6	S5	Common
Mourning Cloak	*Nymphalis antiopa*	2	S5	Common
Black Swallowtail	*Papilio polyxenes*	1	S5	Common
Crescent sp.	*Phyciodes sp.*	3	N/A	n/a
Pearl Crescent	*Phyciodes tharos*	1	S4	n/a
Cabbage White	*Pieris rapae*	64	SNA	Common
Hobomok Skipper	*Poanes hobomok*	2	S5	Common
Pecks Skipper	*Polites peckius*	3	S5	Common
Banded Hairstreak	*Satyrium calanus*	2	S4	Common

Legend: Provincial Status (Srank): S5 = Secure; S4 = Apparently Secure; S3 = Vulnerable; S2N Non-breeding population imperilled;

4.9 Reptile Surveys

A review of the Natural Heritage Information Centre databases identified two potential turtle species that could occur in the Study Area:

- Midland Painted Turtle (*Chrysemys picta marginata*); and
- Snapping Turtle (*Chelydra serpentina*).

Dance Environmental observed one Midland Painted Turtle during two of their site visits in 2015 (May 14 and August 4). During the three basking turtle surveys completed by Beacon in 2021, no turtles were observed.

Dance Environmental (2013b) surveyed six (6) cover boards on four (4) days in June and July of 2013 for the purposes of identifying SAR snake species. At one of these coverboards (shown on **Figure 5**), Dance Environmental observed more than five (5) Eastern Gartersnake and one (1) Dekay's Brownsnake. No other cover board showed five or more snakes of one species or any number of two snake species. It should be noted that Dance Environmental (2013, 2013b, 2015) did not identify any hibernaculum adjacent to the snake aggregation.

No snakes were noted by Beacon during any field visits in 2021 on the Subject Lands. Furthermore, during Beacon's surveys, the lawn was thoroughly surveyed and can be precluded from potential hibernaculum habitat.

4.10 Incidental Wildlife

During the 2021 field season, incidental wildlife that was recorded included ten (10) bird species, five (5) mammal species, and two (2) amphibian species. The following species were observed during field work on the Subject Lands and along the Subject Lands boundary:

Birds

- Mallard (*Anas platyrhynchos*).
- Northern Flicker (*Colaptes auratus*).
- Cedar Waxwing (*Bombycilla cedrorum*).
- American Robin (*Turdus migratorius*).
- Dark-eyed Junco (*Junco hyemalis*).
- White Breasted Nuthatch (*Sitta carolinensis*).
- Hooded Merganser (*Lophodytes cucullatus*).
- Ring Billed Gull (*Larus delawarensis*).
- Red-winged blackbird (*Agelaius phoeniceus*).
- Blue Jay (*Cyanocitta cristata*).
- Black-capped chickadee (*Poecile atricapillus*).
- Great Horned Owl (*Bubo virginianus*).

Mammals

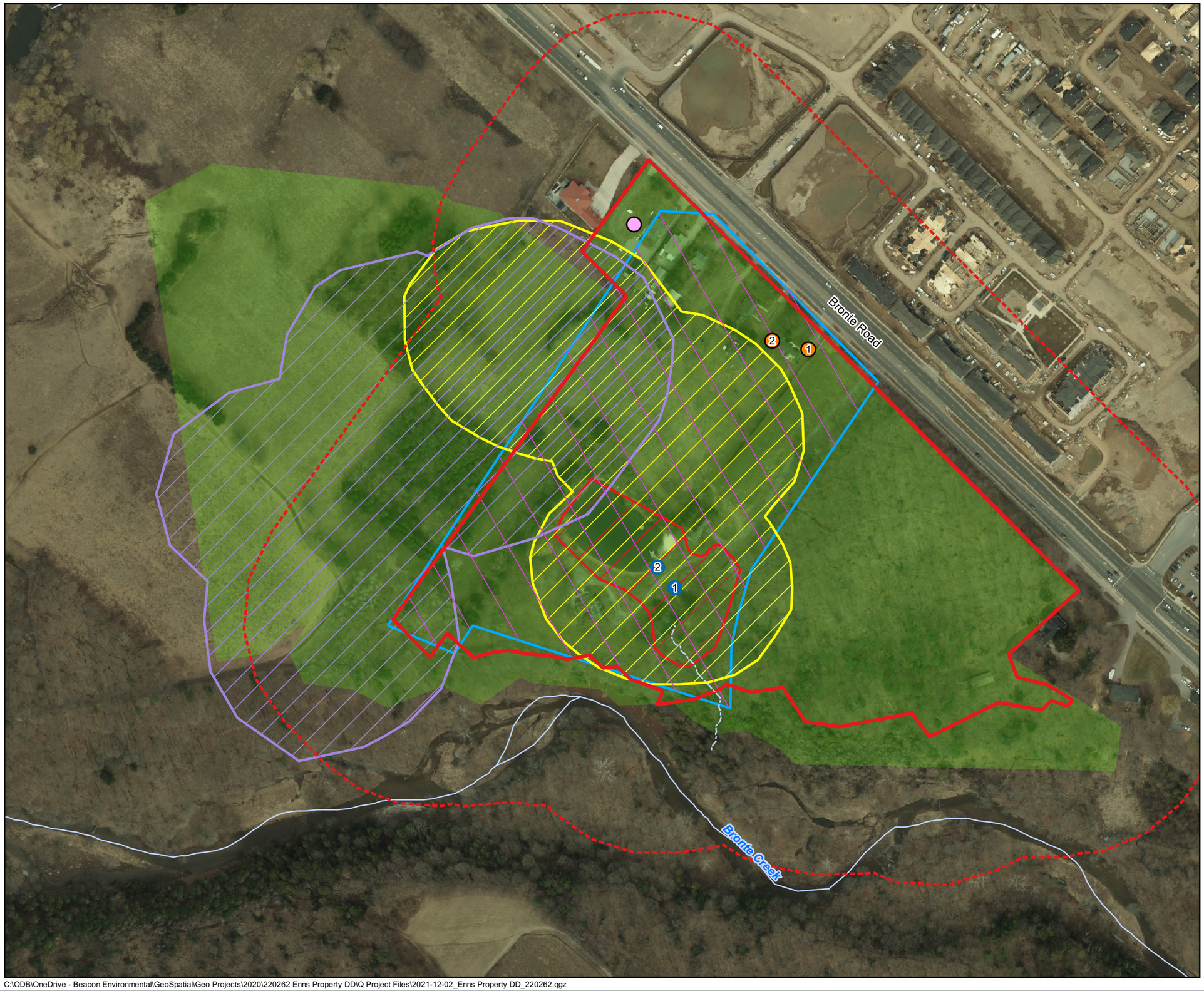
- Eastern Cottontail (*Sylvilagus floridanus*).
- Grey Squirrel (*Sciurus carolinensis*).
- Eastern Chipmunk (*Tamias striatus*).
- Hairy-tailed Mole (*Parascalops breweri*).
- White-tailed Deer (*Odocoileus virginianus*).

Amphibians

- Green Frog (*Lithobates clamitans*).
- American Toad (*Anaxyrus americanus*).

5. Evaluation of Significant Features and Functions

To determine which biophysical resources and ecological functions in the Study Area are considered significant we relied upon the significance criteria outlined in the PPS (2020) and associated Natural Heritage Reference Manual (2010), Significant Wildlife Habitat Ecoregional Criteria Schedules (MNRF 2015), Region of Halton Official Plan, and Town of Oakville Official Plan.



Biological Sampling

Figure 5

Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville, ON

Legend

- Subject Lands
- Study Area
- Watercourse (MNRF 2021)
- Bronte Creek Tributary (GEO Morphix - Mar 2023)
- Amphibian Monitoring Stations
- Bat Exit Survey Locations
- Chimney Swift Survey Location
- Breeding Bird Surveys (Beacon, 2021; Dance 2012–2015)
- Crepuscular Bird Survey Area (Dance 2013)
- Henslow's Sparrow Survey Area (Dance 2013)
- Snake and species at risk survey area (Beacon 2021; Dance 2013)
- Terrestrial Crayfish, Turtle, and Amphibian Search Area (Beacon 2021; Dance 2013)
- Odonata and Lepidoptera (Insect) Survey Area (Beacon 2021; Dance 2013)

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: March 2023

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.

Prepared by: SZ
Checked by: KU

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5.1 Significant Habitat of Endangered Species and Threatened Species

Significant Habitat of Endangered Species and Threatened Species as defined by the PPS is recognized as a Key Feature within the RNHS. Significance, as it relates to the habitat of endangered species and threatened species, is defined by the PPS (2020) as:

> *The habitat, as approved by the Ontario Ministry of Natural Resources, that is necessary for the maintenance, survival, and/or the recovery of naturally occurring or reintroduced populations of endangered species or threatened species, and where those areas of occurrence are occupied or habitually occupied by the species during all or any part(s) of its life cycle.*

Screening for Endangered or Threatened Species was undertaken (**Appendix D**). Screening and habitat assessments confirmed that the Subject Lands support habitat for endangered Butternut and habitat for endangered Northern Myotis.

The lowland community outside the Subject Lands (ELC Unit 12) also support habitat for recently listed endangered Black Ash; however, the specimens observed were dead or dying from Emerald Ash Borer infestation.

As was discussed in **Section 4.4**, there are five Butternut (not hybrid) identified in the Study Area:

- Two trees were planted;
- One tree was assessed to be in poor health (Category 1; non-retainable) following a Butternut Health Assessment by Kuntz Forestry Consulting (2023); and
- Two Butternut will not have their habitat impacted by development as they are more than 25 m from the limits of the proposed development.

The regulations under the *Endangered Species Act* (Ontario Regulation 830/21, Part V) do not apply to planted Butternut and allow removal of Category 1 Butternut following a Butternut Health Assessment. As such, the habitat of the planted and Category 1 Butternut trees was not used to define the limits of the RNHS.

While not confirmed, it is possible that portions of the forested communities on the Subject Lands could support habitat for endangered Northern Myotis, however further studies would be required to confirm their presence. It has been assumed habitat is present within the natural forested communities that comprise the Significant Woodland.

5.2 Significant Woodlands

Significant Woodlands are also Key Features of the RNHS. Significant Woodlands are defined in the PPS, and in the ROP. Both definitions are consistent with respect to attributes and functions that make a woodland significant, however there is some variability in how they are to be identified.

The PPS defines Significant Woodlands as follows:

> *… an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources.*

The ROP includes definitions of woodlands and significant woodlands. A Significant Woodland is considered a woodland that is 0.5 ha or larger determined through a Watershed Plan, a Sub-watershed Study or a site-specific Environmental Impact Assessment to meet one or more of the four following criteria:

- The woodland contains forest patches over 99 years old;
- The patch size of the woodland is 2 ha or larger if it is located in the Urban Area, or 4 ha or larger if it located outside the Urban Area but below the Escarpment Brow, or 10 ha or larger if it located outside the Urban Area but above the Escarpment Brow;
- The woodland has an interior core area of 4 ha or larger, measured 100 m from the edge; or
- The woodland is wholly or partially within 50 m of a major creek or certain headwater creek or within 150 m of the Escarpment brow.

The natural forest communities on the Subject Lands (ELC Units 1, 2 and 8) and in the Study Area (ELC Unit 12) support patches of trees over 99 years in age, and collectively comprise an area of greater than 2.0 ha, and are situated within 50 m of Bronte Creek, which has been identified as a major creek by the ROP. Based on fulfilment of these criteria, these forest units qualify as Significant Woodland and represent Key Features of the RNHS. The cultural plantation (ELC Unit 9) is somewhat contiguous with ELC Unit 2a as well as cultural woodlands (ELC Unit 11a & 11b) and have therefore also been included as Significant Woodland.

The limits of the Significant Woodlands on the Subject Property were staked by the Region as described in **Section 3.3** of this EIA.

5.3 Significant Wetlands

As it relates to wetlands, significant is defined by the PPS (2020) as:

> *An area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time.*

Significant wetlands are a Key Feature of the RNHS. The following definitions of significance, from the ROP, need to be considered for this study:

- *For lands within the Greenbelt Plan Area but outside of the Niagara Escarpment Area, Provincially Significant Wetlands and wetlands as defined in the Greenbelt Plan;*

- *For lands within the Regional Natural Heritage System but outside the Greenbelt Plan Area, Provincially Significant Wetlands and wetlands that make an important ecological contribution to the Regional Natural Heritage System; and,*
- *Outside the Regional Natural Heritage System, Provincially Significant Wetlands.*

A deciduous swamp has been previously described on a braid bar at the base of the Bronte Creek valley (Dwyer 2006). This is shown as ELC Unit 13 on **Figure 4** and is at the edge of the Study Area. This feature was not ground-truthed or delineated in the field however, given its presence along the main Bronte Creek and within the Bronte Creek valley, it is likely that this wetland would be considered to provide an important ecological contribution to the RNHS. As such, this wetland would be considered significant based on the Region's definition.

Other than the deciduous swamp as noted above, there are no other ecologically contributing wetlands within the Study Area. Similarly, there are no Provincially Significant Wetlands (PSWs) or MNRF evaluated wetlands within or adjacent to the Subject Lands. The nearest PSW is the Lower Bronte Creek Wetland Complex, located ~2.3 km southeast of the Subject Lands (**Figure 2**).

The small wetland associated with ELC Unit 3 is located on average of 10 m outside the Greenbelt Plan Area. This feature does not contain regionally or provincially sensitive species, was not staked as a regulated wetland by CH and covers less than 0.01 ha. The small amount of wetland area, lack of sensitive species and anthropogenic origin do not constitute a wetland that provides an important ecological contribution to the RNHS. As such, this wetland is not considered significant based on the Region's definition.

5.4 Significant Valleylands

Significant Valleylands are normally identified by municipalities with input from their agency partners. Significant Valleylands are also recognized regionally as a Key Feature of the RNHS. The Town of Oakville does not define Significant Valleylands, although they do identify major valleylands like Bronte Creek.

The PPS (2020) defines valleylands as follows:

> *Means a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.*

As it relates to other significant natural heritage features and area, the PPS (2020) defines these as:

> *Ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system …*

The ROP similarly defines significant as:

> *In regard to the other components of the RNHS, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system."*

Table 8-1 in the *Natural Heritage Reference Manual* (MNR 2010) provides recommended criteria for evaluating significant valleylands, including criteria relating to landform functions and attributes, ecological features and restored ecological functions. The Bronte Creek valleylands meet most of the criteria in this table and are therefore considered to represent a Key Feature of the RNHS. In terms of establishing the limits of the Significant Valleylands on the Subject Property, the *Natural Heritage Reference Manual* (MNR 2010) recommends that Significant Valleylands be defined by their LTSTOS.

5.5 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) represents a combination of natural heritage features, attributes and functions that are intended to capture the best examples of wildlife habitat within a planning area such as an upper or lower tier municipality. This responsibility for confirming SWH is assigned to the planning authority (i.e., Town, Region); however, municipalities rely upon proponents to identify potential SWH through planning studies.

The ROP and PPS share a very similar definition of significant as it pertains to SWH:

> *PPS – Significant means:* d) *"in regard to other features and areas, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system"*
>
> *ROP – Significant means: "in regard to the other components of the RNHS, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system."*

To determine if any of the features on the Subject Lands support potential SWH, we consulted the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF 2015).

According to the *Significant Wildlife Habitat Technical Guide (*OMNR 2000), there are four broad categories of SWH:

- Habitats of Seasonal Concentration Areas of Animals;
- Rare Vegetation Communities or Specialized Habitat for Wildlife;
- Habitat for Species of Conservation Concern; and
- Animal Movement Corridors.

Within each of these categories, there are multiple types of SWH that are recognized based on type or function that may or may not be included within other Key Features or components of the RNHS.

In applying the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF 2015), it was determined that potential SWH is present on the Subject Lands and in the broader Study Area.

On the Subject Lands, there is potential SWH associated with areas identified as Significant Woodland and Significant Valleyland. In the broader Study Area, SWH is associated with Bronte Creek Provincial Park and Greenbelt Plan Area. A detailed analysis of SWH criteria and their applicability to the Subject Lands is presented in **Appendix E.** A summary of potential SWH is provided below. ELC units are illustrated on **Figure 4**.

SWH Category	Potential Habitats (ELC Units)
Bat Maternity Colony	Woodland (1, 2, 8, 9, 11, 12)
Landbird Migratory Stopover Area	Woodland (1, 2, 8, 9, 11, 12)
Migratory Butterfly Stopover Area	Bronte Creek P.P. Meadow (10)
Open Country Bird Breeding	Bronte Creek P.P. Meadow (10)
Raptor Wintering Area	Bronte Creek P.P. Meadow (10), Plantation (9), Cultural Woodland (11)
Reptile Hibernaculum	Woodland adjacent Valley Slope (1, 2, 8, 9, 11b, 12)
Seeps and Springs	Seeps (no springs) on lower valley slopes (12)
Species of Conservation Concern: • Eastern Wood-Pewee • Wood Thrush • Barn Swallow • Monarch	 • Woodland (1, 2, 8, 9, 11, 12) • Forest (1, 2, 8, 12) • Bronte Creek P.P. Meadow (10) • Bronte Creek P.P. Meadow (10)
Tallgrass Prairie	Restoration areas in Bronte Creek P.P. (10b)
Turtle Nesting Area	Toe of Valley Slope (2c, 12)
Woodland Area-Sensitive Bird Breeding	Woodland (2c, 8, 12)
Woodland Raptor Nesting	Woodland (2c, 8, 11, 12)

As noted in **Section 3.2.2**, the Study Area was inspected for seeps in consultation with DS Consultants on March 17, 2023. Seeps were observed on the lower valley slope of Bronte Creek (ELC Unit 12) as described by DS Consultants in the *Hydrogeological Investigation* report (DS Consultants 2023b). These seeps are maintained by a shallow sand unit and these seeps are hydraulically connected to a more regionally expansive sand unit found on other sites to the east of Bronte Road (DS Consultants 2023b). As such, DS Consultants have advised that any minimal recharge that may be occurring on the Subject Lands is anticipated to be insignificant in relation to the larger recharge area associated with these seeps.

The large artificial pond is not in a forested area and is therefore not SWH for seeps or springs. DS Consultants have advised that this pond was excavated to the depth of a sand layer and is consequently fed by groundwater (DS Consultants 2023b). It should be noted that the pond is also actively maintained, as the previous landowner has noted that when the pond level drops, he tops up the pond with well water. It should be further noted that *Significant Wildlife Technical Guide – Appendix Q* (OMNR 2000) specifies that seeps or springs found in relatively undisturbed areas are generally more significant than those found in areas disturbed by human activities.

During a site visit with Region and Town representatives on March 24, 2023, a wet depression was noted in the tableland woodland (ELC Unit 1) and discussion took place with respect to whether this wet area should be considered a seep. It was the opinion of DS Consultants that the wet area is not a seep because there is insufficient catchment area for groundwater discharge. In addition, this wet area does not contain plant species indicative of seepage. This depression outlets to the BCT-1 gully and the outlet is approximately 1 m lower than the depression. This drop is deemed by Beacon to be a result of the active erosion of the BCT-1 gully by the watercourse, rather than an indicator of high discharge from the wet depression.

Insect surveys in 2022 identified Double-striped Bluet associated with the large pond. This species is ranked as S3 and little is known about its abundance in Halton (Rothfels, 2006). It should be noted that the large pond is not considered to be conducive to population viability of Double-striped Bluet due to the presence of large predatory fish species and anthropogenic stressors. Based on an evaluation in accordance with the *Significant Wildlife Habitat Technical Guide* Appendix Q (OMNR 2000), described in **Table E2** of **Appendix E**, the presence of Double-Striped Bluet associated with the large pond on the Subject Lands was determined to be not significant**.**

5.6 Significant Areas of Natural and Scientific Interest

Significant Areas of Natural and Scientific Interest are recognized as Key Features within the RNHS. Regarding Areas of Natural and Scientific Interest (ANSI), significant is defined by the PPS (2020) as:

> *Areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.*

The provincially significant Bronte Creek Provincial Park Nature Reserve Zone - Life Science ANSI overlaps slightly with the southern and western portions of the Subject Lands (**Figure 2**). The ANSI boundaries are generally coincident with the Significant Woodland boundaries on the Subject Lands.

5.7 Fish Habitat

The PPS (2020) treats all fish habitat equally regardless of significance. However, the PPS applies only to waterbodies where the protection prohibitions of the *Fisheries Act* (1985) apply.

The *Fisheries Act* defines fish habitat as “water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas”. As identified in **Table 1**, protection provisions of the *Fisheries Act* are focused on two core prohibitions, a) carrying on works, undertakings or activities that result in the “death of fish by means other than fishing” (subsection 34.4[1]), and b) the “harmful alteration, disruption or destruction of fish habitat” (subsection 35[1]; also referred to as “HADD”). There are three aquatic features within the Subject Lands that have undergone an assessment to identify and define the fish and fish habitat within the Subject Lands.

The fish habitat, within the reach BCT-1a is limited by the identified impediments to fish movement (i.e., the accumulation of large woody debris and associated knickpoints, along with the high gradient gully feature). Therefore, the BCT-1a reach has been identified as indirect fish habitat. Indirect fish habitat has an insufficient flow duration and/ or a barrier that prevents the ability of fish to complete one or more of their life processes (spawning, rearing, feeding, over wintering or migration). Indirect fish habitat is provided protections under the *Fisheries Act* prohibitions as these features provide water and nutrients to downstream habitats.

The fish habitat in downstream reaches BCT-1b and BCT-1c is less limited as there are intermittent flows, groundwater inputs and a potential connection under flood conditions to Bronte Creek, a fish bearing waterbody. For this reason, these lower reaches have been identified as direct fish habitat.

The two ponds on the Subject Lands are artificial (i.e., historically dug ponds). The large pond has been established as habitat to an introduced fish population. Neither pond has a connection (during anytime of the year) to Bronte Creek due to the known impediments to upstream fish movement along BCT-1. Furthermore, neither pond is proximal to the Bronte Creek floodplain, nor connected to any other drainage features or waterbodies (**Figure 3**).

The Fish and Fish Habitat Protection Policy Statement (FOC 2019), outlines exceptions, outside of the ministerial authorizations identified in subsection 34.4(2)(a) or 35(2)(a) of the Act, that provide authority for a proponent to complete work, undertaking, or activity without contravening the prohibitions against the death of fish or the HADD of fish habitat. One such exception includes the prescription of certain 'Canadian waters' where the prohibitions do not apply. The DFO's Projects Near Water website, provided further guidance in defining these 'specific types of minor waterbodies' where proposed work, undertakings, or activities are exempt and therefore do not require additional consultation with DFO. These include, but are not limited to, artificial waterbodies (including private ponds) that are not connected to a waterbody that contains fish at any time during any given year. Therefore, since the ponds within the subject lands are artificial (anthropogenically created), have no connection (during any time of the year) to the lower reaches of BCT-1 and Bronte Creek and are not located within the Bronte Creek floodplain they meet the exception requirements for a waterbody where the prohibitions do not apply. Furthermore, the death of the introduced fish population can be avoided by following the recommended mitigations provided in **Section 9**.

6. Natural Heritage System

The PPS (2020) describes natural heritage systems as follows:

> *A system made up of natural heritage features and areas, linked by natural corridors which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems.*

The Town of Oakville Official Plan describes their natural heritage system as a linked system of natural areas which include natural features, hazard lands, buffers and linkages.

ROP policy 115.3 defines the RNHS as including: Key Features, Enhancements to the Key Features, including Centres for Biodiversity, linkages, buffers, watercourses within Conservation Authority Regulation Limit or those that provide a linkage to a wetland or a significant woodland, and wetlands other than those considered significant. Key Features include significant habitat of threatened or endangered species, significant wetlands, significant coastal wetlands, significant woodlands, significant valleylands, significant wildlife habitat, significant ANSI's and fish habitat. Additionally, the RNHS also includes watercourses and floodplains regulated by CH and wetlands that do not meet the ROP definition of significant.

Map 1 and Map 1G of the ROP identify the limits of the RNHS on the Subject Lands. ROP policy 116.1 states that:

> *The boundaries of the Regional Natural Heritage System may be refined, with additions, deletions and/or boundary adjustments, through:*

a) a Sub-watershed Study accepted by the Region and undertaken in the context of an Area-Specific Plan;
b) an individual Environmental Impact Assessment accepted by the Region, as required by this Plan; or
c) similar studies based on terms of reference accepted by the Region.

One of the objectives of this EIA is to refine the limits of a RNHS by identifying Key Features and establishing their limits in consultation with the agencies, identifying enhancements to Key Features, as well as linkages, natural hazards and setbacks, and ecological buffers.

The following subsections identify Key Features and components of the RNHS as they relate to the Subject Lands. As the RNHS also encompasses the Greenbelt NHS, the latter is not discussed below. Furthermore, as the Key Natural Heritage Features within the Greenbelt extend beyond the Greenbelt Plan limits, the Greenbelt Plan policies do not apply to those natural heritage features beyond the Greenbelt Plan limit. In those instances, the EIA is to determine the appropriate buffer as opposed to utilizing the minimum vegetation protection zone (VPZ) prescribed by the Greenbelt Plan.

The intent of identifying a Preliminary RNHS on the Subject Lands is to inform the development plan and design. The boundaries of the Preliminary RNHS will be further refined, in later sections of this EIA, based on consideration of the development design and its efficient integration and the resulting development limits will be used to define the Final Refined RNHS. The Preliminary RNHS is illustrated with constraints on **Figure 6.**

6.1 Key Features

Based on the evaluation of significance presented in **Section 5.0**, the following Key Features have been identified with the Study Area:

- Significant Habitat for Endangered and Threatened Species;
- Significant Woodlands;
- Significant Valleylands;
- Significant Wildlife Habitat;
- Significant Areas of Natural and Scientific Interest; and
- Fish Habitat.

6.1.1 Significant Habitat of Endangered and Threatened Species

As noted in **Section 5.1** the following endangered and threatened species and/or their habitat have either been confirmed on the Subject Lands or likely associated with the Subject Lands:

- Black Ash (*Fraxinus nigra*) – Endangered;
- Butternut (*Juglans cinerea*) – Endangered; and
- Northern Myotis (*Myotis septentrionalis)* – Endangered.

Two Butternut trees (not hybrid) will be retained within the limits of the RNHS and are greater than 25 m from the proposed development limit.

Legend

- Subject Lands
- Woodland Boundary (Staked by the Region of Halton Sept. 7, 2021)
- Woodland Buffer (10 m)
- Staked Top of Slope (Staked by Conservation Halton Aug. 18, 2021)
- Stable Top of Slope (Terraprobe 2023)
- 15 m Setback from Stable Top of Slope
- Preliminary Regional Natural Heritage System (Beacon 2023)
- Bronte Creek Tributary [BCT-1] (GEO Morphix - Mar 2023)
- Non-Significant Wetland
- Key Features (Habitat of Endangered or Threatened Species, Significant Wetland, Significant Woodlands, Significant Valleylands, Significant Wildlife Habitat, Significant Area of Natural and Scientific Interest, Fish Habitat), Linkage, Watercourse, and Non-Significant Wetlands

Preliminary Regional Natural Heritage System & Environmental Constraints	Figure 6

Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville, ON

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: April 2023

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.	Prepared by: SZ Checked by: KU
N 1:4,500	0 70 140 m

C:\ODB\OneDrive - Beacon Environmental\GeoSpatial\Geo Projects\2020\220262 Enns Property DD\Q Project Files\2021-12-02_Enns Property DD_220262.qgz

Northern Myotis was detected on the Subject Lands during acoustic monitoring. While no bats were observed utilizing existing structures in the developed portion of the Subject Lands, this occurrence suggests that there could be a maternity roost nearby and most likely in the adjacent woodland and possibly in the abandoned garage in the woodland. As these areas are contained within the Significant Woodland and will not be developed, the habitat for this species, as well as other listed bats that may also utilize these areas as habitat, will be maintained.

6.1.2 Significant Woodlands

As was described in **Section 5.2**, the forested slopes along the Bronte Creek valleylands and adjoining tableland woodlands on the Subject Lands satisfy regional criteria for significant woodlands and therefore form part of the Preliminary RNHS. The boundaries of these Significant Woodlands were staked and confirmed by the Region of Halton as noted in **Section 3.3**.

6.1.3 Significant Wetlands

As discussed in **Section 5.3**, a potential significant wetland is present at the base of the Bronte Creek valleylands in ELC Unit 13.

6.1.4 Significant Valleylands

As discussed in **Section 5.4**, the Bronte Creek valleylands are considered to meet the criteria of a Significant Valleyland. This Significant Valleyland forms part of the RNHS. The top of slope of these valleylands were staked and confirmed by CH as noted in **Section 3.3** and the LTSTOS was determined by Terraprobe (2023). The limits of the Significant Valleyland correspond with the LTSTOS as specified in the *Natural Heritage Reference Manual* (MNR 2010).

6.1.5 Significant Wildlife Habitat

As discussed in **Section 5.5**, the Study Area supports potential SWH, mostly outside of the Subject Lands. The habitats identified as potential SWH are contained entirely within the boundaries of the Preliminary RNHS or Greenbelt.

6.1.6 Significant Areas of Natural and Scientific Interest (ANSI)

As discussed in **Section 5.6**, the Subject Lands is flanked by the Bronte Creek Provincial Park. The Nature Reserve Zone associated with the park is identified by MNRF as a provincially significant life science ANSI. This Key Feature of the RNHS is fully contained within the Preliminary RNHS.

The woodland on the Subject Lands is contained in the ANSI boundaries.

6.1.7 Fish Habitat

As examined in **Section 5.7**, the two artificial ponds are exempt from the prohibitions identified as protection provisions of the *Fisheries Act*. The PPS policies only pertain to waterbodies where the prohibitions of the *Fisheries Act* (1985) apply. The fish habitat within the BCT-1 feature is divided into indirect habitat and direct habitat. Reach BCT-1a is identified as indirect habitat based on its lack of connection to a fish bearing waterbody and the impediment to upstream fish movement due to ephemeral flow and steep gradient. Reaches BCT-1b and BCT-1c are identified as direct fish habitat based in intermittent flows and connections to a fish bearing waterbody in Bronte Creek under certain high water flood conditions.

6.2 Non-Significant Wetlands

As discussed in **Section 5.3** there is one wetland (ELC Unit 3) adjacent to the smaller artificial pond on the Subject Lands. This wetland feature does not meet the ROP definition of significant because it is outside the Greenbelt, is not a Provincially Significant wetland, and does not make an important ecological contribution to the RNHS (dominated by invasive *Phragmites*). This wetland feature is nevertheless considered a component of the RNHS (i.e., a wetland other than those considered significant). This wetland unit was not staked by CH. The wetland is contained entirely within the limits of the Preliminary RNHS as it is contained within the Significant Valleyland by virtue of it being within the LTSTOS.

6.3 Linkages

The Bronte Creek valleylands represent a regional scale linkage. This has been confirmed through previous studies including the Merton Tertiary Plan studies. This linkage is defined by the Significant Valleyland which is included in the Preliminary RNHS.

6.4 Buffers

The primary purpose of a buffer is to provide protection to Key Feature(s) and ecological functions by mitigating potential adverse impacts from development or site alteration.

The Region defines buffer as follows:

> *220.1.1 BUFFER means an area of land located adjacent to Key Features or watercourses and usually bordering lands that are subject to development or site alteration. The purpose of the buffer is to protect the features and ecological functions of the Regional Natural Heritage System by mitigating impacts of the proposed development or site alteration. The extent of the buffer and activities that may be permitted within it shall be based on the sensitivity and significance of the Key Features and watercourses and their contribution to the long-term ecological functions of the Regional Natural Heritage System as determined through a Sub-watershed Study, an Environmental Impact Assessment or similar studies that examine a sufficiently large area*.

Key factors to be considered when prescribing ecologically appropriate buffers to natural features include a) the sensitivities of the habitats and species present, b) the nature of the proposed land use change or activity and associated stressors, and c) the ability of the buffer to mitigate adverse impacts to adjacent natural features and their ecological functions.

Although it is generally recognized that, given all the variables to consider, it is more scientifically defensible to identify buffers on a site-specific basis, precautionary buffers are sometimes recommended or adopted by planning authorities because it simplifies the process, ensures a certain level of consistency, and provides more certainty about the amount of land that will need to be set aside for conservation purposes.

Additionally, while buffers have become a more or less standard mitigative tool as part of the natural heritage planning process in southern Ontario, buffers represent only one of the many protection measures available. Buffers can only mitigate certain types of stressors, not all. Therefore, they should be complimented with other protection measures. Similar or enhanced levels of environmental protection can also be achieved through design, education, and controlling access to sensitive areas. For example, green infrastructure such as LIDs and stormwater management (SWM) ponds are intervening land uses that can provide similar protective functions to a buffer. Fencing and trails can also be used to prevent encroachment, control/direct access adjacent to natural features and mitigate impacts to sensitive features.

Buffer design requires consideration of feature sensitivity and potential stressors associated with how the adjacent lands will be used. Depending on the types of uses and associated stressors, buffers may or may not be warranted. In some situations, such as infill redevelopment projects in urban areas where the ambient stressors are already high, or where environmental features may not support highly sensitive ecological receptors, buffers may not be as effective as if applied to greenfield developments. In cases, where there are fewer stressors associated with the new use than the existing use, buffers may not always be necessary.

As it relates to the proposed redevelopment, Beacon recommends that an ecological buffer be applied to the boundary of the Significant Woodland as this provides protection to all other Key Features associated with the Subject Lands.

Through consideration of key factors for determination of buffer width described above (i.e., sensitive ecological receptors, potential stressors, and buffer form), it is recommended that a 10 m naturalized buffer be applied to the dripline of the Significant Woodland. A buffer width of 10 m to Significant Woodlands is considered a standard in most municipalities in southern Ontario.

While Town of Oakville policies pertaining to woodlands (S. 16.1.8) generally do not permit development within 10 m of a woodland, they do allow for larger or smaller buffers to be applied depending on the sensitivity of the woodland. Conservation Halton's Land Use Planning policies relating to significant woodlands (S.3.6.4) recommend a minimum 10 m buffer to be confirmed through study. The Town of Oakville also has land use planning policies that specifically relate to the Bronte Road West Lands. Policy 27.3.8.3(e)(i) requires that a 30 m minimum buffer be applied to Key Features on the Subject Lands but allows for this buffer to be further refined through the completion of an EIA approved by the Region. This is consistent with ROP Policy 116.1, which provides the ability for proponents to refine the RNHS limit through the EIA process.

Beacon considers a 10 m buffer, applied to the limits of the Significant Woodland, to be ecologically appropriate for protecting all of the Key Features and their ecological functions from potential impacts related to the proposed redevelopment of the Subject Lands. Rationale for the determination of this buffer width is provided below:

- The Subject Lands currently support long-established residences, laneways, artificial ponds, extensive trails, lawns, accessory buildings and structures, some of which are contained within the Key Features themselves (i.e., trails and accessory buildings). The ecological communities and species that are most proximal and could potentially be affected by the redevelopment proposal have long adapted to the existing residential land uses and activities on the Subject Lands as well as other urban uses in the Study Area, including noise and light impacts from Bronte Road to the east (and immediately adjacent to the woodland), noise from the QEW to the south, and noise and activity related to camping and off-leash trail usage in the Bronte Creek Provincial Park to the north;
- The most sensitive ecological receptors are the vegetation, fish, and wildlife resources associated with the Bronte Creek valleylands and these are physically/vertically separated from the redevelopment proposal (ELC Units 2c and 12);
- Portions of ELC Unit 1 proximal to the valley and ELC Unit 8 are also considered sensitive, however the portions of ELC 1 that currently abut Bronte Road and the existing development are not sensitive as they are already exposed to existing stressors. A 10 m buffer can mitigate potential stressors associated with the proposed redevelopment; however, the existing effects of Bronte Road cannot be mitigated by any buffer;
- ELC Unit 9 is a cultural plantation that does not support any sensitive of significant species or wildlife habitat. A 10 m buffer along the southern limit of this feature is sufficient to protect its functions and attributes. The eastern, northern and western limit of this feature is located on Bronte Creek Provincial Park land and will have no adjacent development;
- ELC Unit 2b flanks the Bronte Creek valley but does not support significant or sensitive wildlife as it is maintained as lawn and used by the existing residents; and
- There are presently no buffers or fencing to separate the existing residential uses from the adjacent Key Features. The proposed redevelopment can be designed to provide for greater separation between human activities and the Key Features than what currently exists.

As it relates to the Significant Valleyland, a 15 m setback has been applied to the LTSTOS to conform with Town and CH policies relating to erosion hazards as is described in **Section 6.8**. As the purpose of a setback differs from that of an ecological buffer, the setback has been mapped separately as a component of the Preliminary RNHS to satisfy Town and CH policies pertaining to erosion hazards and valleylands.

6.5 CH Regulated Watercourses

Watercourses that are within a Conservation Authority Regulation Limit represent a component of the RNHS. There are two regulated watercourses associated with the Subject Lands – Bronte Creek and BCT-1. These watercourses are contained within the limits of the Preliminary RNHS.

6.6 Enhancements to Key Features

Enhancements to Key Features represent another component of the RNHS as outlined in ROP policy 115.3.

ROP policy 229.1.1 defines Enhancements to Key Features as follows:

> *ENHANCEMENTS TO THE KEY FEATURES means ecologically supporting areas adjacent to Key Features and/or measures internal to the Key Features that increase the ecological resilience and function of individual Key Features or groups of Key Features.*

Opportunities exist on the Subject Lands to implement measures that can increase the ecological resilience and function of Key Features. Recommended enhancement measures to be considered within and/or adjacent to Key Features are listed below:

Enhancements Internal to Key Features

- Restoration of the upper reach of BCT-1 using natural channel design principles to rectify previous alteration and existing erosion issues.
- Removal of existing structures (e.g., sheds, outbuildings, garage, lookout platform, etc.) from Key Features and restoration of these areas to woodland using locally appropriate native trees, shrubs and groundcovers.
- Decommissioning of existing trails (some of which were used for vehicular access by the previous landowner) in Key Features (ELC Units 1 and 8), as illustrated in **Appendix F**, and restoration of these areas to woodland using locally appropriate native trees, shrubs and groundcovers. It is estimated that the cumulative area that could potentially be restored is approximately 3,250 m^2.
- Management and control of populations of invasive and exotic species such as Garlic Mustard and Common Buckthorn associated with the Significant Woodland (ELC Units 1, 2a, 2b and 8) and replacement using locally appropriate native trees, shrubs and groundcovers.
- Creation of supplementary wildlife habitat (brush piles, etc.) in Significant Woodland (ELC Units 1, 2a, 2b and 8).

Enhancements Adjacent to Key Features

- Removal of artificial ponds and mitigation of existing surface runoff and erosion impacts.
- Removal of existing structures (e.g., estate home, driveway, garages, etc.) from Buffers and stable slope setback and naturalization of these areas using locally appropriate native trees, shrubs and groundcovers.
- Creation of artificial wildlife habitats (i.e., brush piles, snake pits, bird and bat boxes) on developed portions of the Subject Lands where feasible.

6.7 Regulated Flood Plain

The ROP includes regulated flood plains as a component of the RNHS as defined in ROP policy 115.4. There are no regulated flood plains on the Subject Lands, however there is a regulated flood plain associated with Bronte Creek within the Study Area. The regional floodline and 15 m setback are fully contained within the valleylands and limits of the Preliminary RNHS and do not extend onto the Subject Lands.

6.8 Erosion Hazards

Erosion hazards such as steep slopes are not considered components of the RNHS; however, hazard lands, which include erosion hazards, are considered part of the Town's NHS, and for this reason have also been included as part of the Preliminary RNHS.

On the Subject Lands, the steep slopes associated with Bronte Creek valleylands, including BCT-1, represent an erosion hazard. The physical top of slope of the valley was staked by CH on August 18, 2021, and the LTSTOS was determined by Terraprobe (2023). The Town and CH have specific policies and regulations pertaining to development within or adjacent to natural hazards. Bronte Creek is considered a major valley and development is not permitted within the 15 m of the LTSTOS. The erosion hazard limits include the 15 m setback and have been used to define the limits of the Preliminary RNHS.

6.9 Preliminary RNHS Limits

Based on the evaluation of significant natural heritage features and functions provided in **Section 5** and subsequent confirmation of other components of the RNHS discussed in **Section 6**, the limits of the Preliminary RNHS were identified by the outermost RNHS component or erosion hazard limit which corresponds with the following, whichever is greater:

- 10 m Buffer to the Significant Woodland; or
- 15 m Setback to the LTSTOS.

The Preliminary RNHS is illustrated on **Figure 6** and is further refined in subsequent sections of this EIA, based on the design of the proposed redevelopment and identification of Enhancements to the Key Features.

7. Development Constraints and Opportunities

The identification of potential biophysical constraints to future development is based on the findings of the background review, characterization of existing conditions completed to date, and evaluation of significance. Where conditions have been revealed that make areas unsuitable for future development under the current environmental regulatory framework described in **Section 2**, these areas have been identified as potential constraints to development.

It is important to note that while an area or feature may be identified as a potential constraint, this does not necessarily mean the area is not developable. Constraints are treated variably according to their significance and sensitivity as applicable environmental protection policy and regulations determine allowed development / use within these areas. The following sections summarize natural heritage and natural hazard constraints associated with the Subject Lands.

In addition to the identification of environmental constraints, the EIA has identified opportunities to restore and enhance the natural environment as part of the proposed development. These opportunities include measures to enhance the ecological integrity of the woodland and valleylands and have been outlined in **Section 6.6**.

7.1 Natural Heritage Constraints

Based on the background information and the data gathered through background review and field investigations described in **Section 3.2** and through the evaluation of significance presented in **Section 5** and identification of the Preliminary RNHS limits in **Section 6.9**, it was determined that the significant natural heritage features that have been identified on the Subject Lands are associated primarily with the Bronte Creek valleylands and the woodlands within the Greenbelt and Bronte Creek Provincial Park.

The following is a list of natural heritage constraints to the proposed redevelopment:

- Significant Habitat of Endangered and Threatened Species:
  - Black Ash (endangered) – contained within the boundary of ELC Unit 12;
  - Northern Myotis (endangered) – defined by limits of Significant Woodlands;
  - Butternut (endangered) – contained within the limits of Significant Woodlands and its Buffer, subject to applicable exemptions under the ESA and regulations;
- Significant Woodlands – defined by dripline staked by Region;
- Significant Valleylands – defined by LTSTOS determined by Terraprobe Inc. (2023);
- Significant Wildlife Habitat – defined by limits of Significant Woodland;
- Significant ANSI;
- Fish Habitat – BCT-1, Bronte Creek;
- Linkages – Bronte Creek valleyland – defined by limits of Significant Valleyland; and
- Buffers –10 m to Significant Woodland.

7.2 Natural Hazard Constraints

The Study Area includes the Bronte Creek valleylands which contain natural hazards related to flooding and erosion.

The bottomlands contain the flood hazard which is defined by the regional floodline and 15 m setback or allowance. The flood hazard limits are contained entirely on the adjacent BCPP property and do not extend onto the Subject Lands. As such, they do not represent a constraint to the proposed redevelopment, unless there is a need for infrastructure to be installed in the valley.

The valley slopes present an erosion hazard which is defined by the LTSTOS and 15 m setback or allowance. The erosion hazard limits extend onto the Subject Lands and will represent a constraint to redevelopment of the Subject Lands.

While development within natural hazards is generally not permitted, natural hazard policies do permit development in hazard lands in certain cases such as existing uses and new infrastructure, provided certain criteria can be satisfied. Any development within the natural hazard will require a Permit from Conservation Halton pursuant to Ontario Regulation 162/06.

8. Description of the Proposed Development

One of the primary objectives of the proposed redevelopment plan is to protect, maintain, restore and enhance the significant natural heritage features and ecological functions associated with the Subject Lands and surrounding area. To facilitate achieving this objective, the proposed redevelopment has been designed to respect the various natural heritage and natural hazard constraints described in **Section 7** which correspond with the limits of the Preliminary RNHS identified in **Section 6.9**.

Through the design of the proposed redevelopment, opportunities were identified to incorporate green infrastructure such as a bioswale and naturalized channel that can mitigate existing impacts to Key Features while increasing their ecological resilience. Such measures, external to Key Features and Buffers (i.e., external to the Preliminary RNHS) are considered Enhancements to the Key Features and represent components of the RNHS and were used to establish the limits of the Final RNHS.

8.1 Proposed Development Plans

Eaglewood Communities Limited

The proposed redevelopment plan at 1354 Bronte Road (**Figure 7A**) consists of the following:

- One six storey residential complex consisting of 110 condominium units; 166 parking spaces;
- Landscaping; and
- Public Road connection to Saw Whet Boulevard and adjacent lot.

For servicing details, please refer to Functional Servicing Report for 1354 Bronte Road prepared by Urbantech Consulting (2023).

Bronte River Partnership Limited

The Conceptual Development Plan for 1300, 1316, 1326, 1342, 1350 Bronte Road (**Figure 7B)** consists of the following:

- Block 1 – Residential Condominium – 4.87 ha:
  - 86 single detached dwellings including one existing heritage house to be retained;

DEVELOPMENT STATISTICS

CONDO SITE AREA: 3682SM
SITE DENSITY: 299 UNITS PER HA

BUILDING STATISTICS

TOTAL UNITS: 110 UNITS

FLOOR	TOTAL
6TH	21 UNITS
5TH	21 UNITS
4TH	21 UNITS
3RD	20 UNITS
2ND	19 UNITS
1ST	9 UNITS
TOTAL	110 UNITS

PARKING STATISTICS

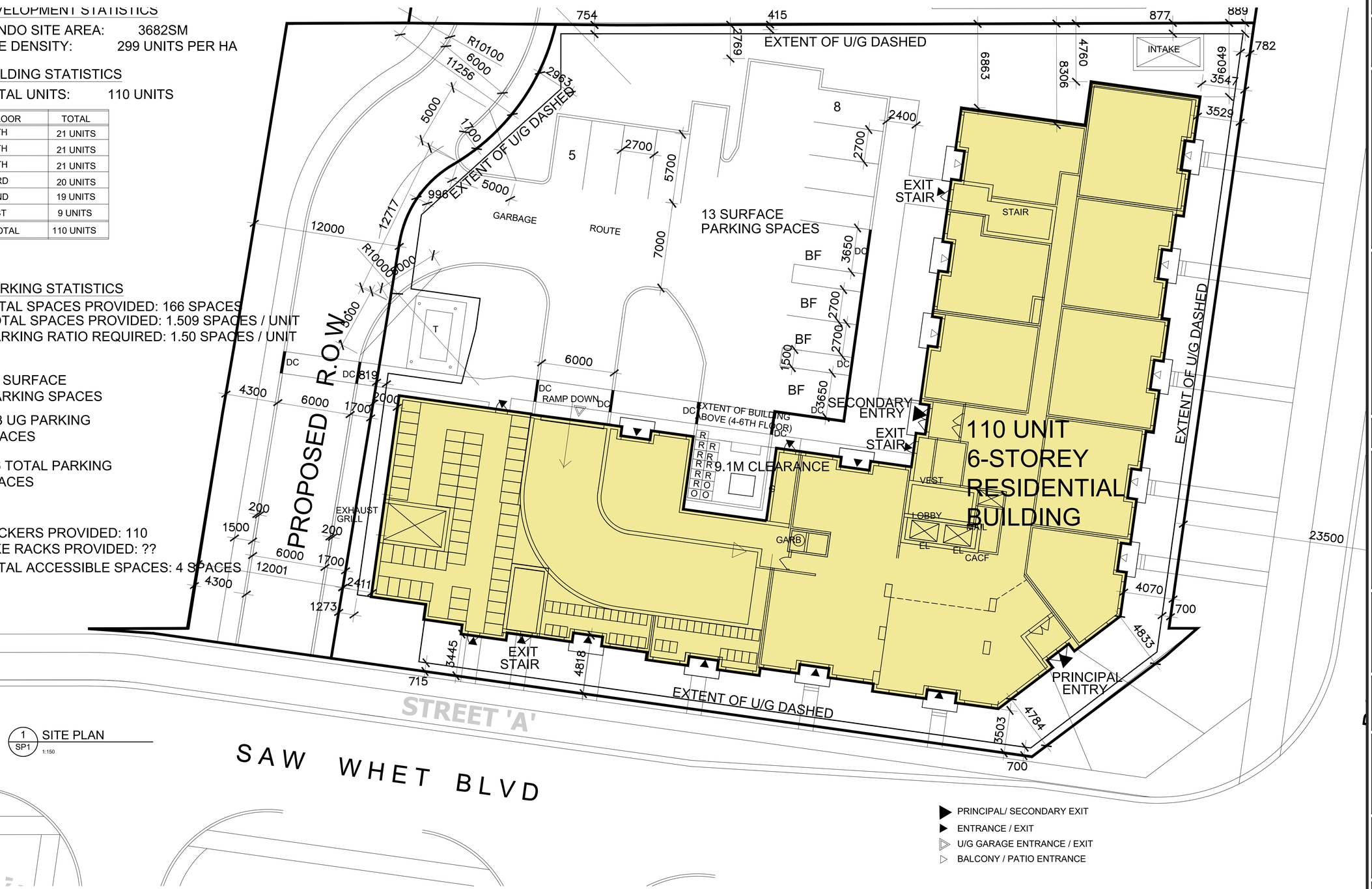
TOTAL SPACES PROVIDED: 166 SPACES
TOTAL SPACES PROVIDED: 1.509 SPACES / UNIT
PARKING RATIO REQUIRED: 1.50 SPACES / UNIT

13 SURFACE PARKING SPACES

153 UG PARKING SPACES

166 TOTAL PARKING SPACES

LOCKERS PROVIDED: 110
BIKE RACKS PROVIDED: ??
TOTAL ACCESSIBLE SPACES: 4 SPACES



1 SP1 SITE PLAN
1:150

- PRINCIPAL/ SECONDARY EXIT
- ENTRANCE / EXIT
- U/G GARAGE ENTRANCE / EXIT
- BALCONY / PATIO ENTRANCE

KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING SHEET NUMBER

DRAWING SETS ISSUED	No.	DATE (DD,MM,YY)	BY
SURVEY UNDERLAY	1	16.10.2020	WH
0.25 visitor parking	2	20.10.2020	WH
SMALLER TRAFFIC TRIANGLE	3	05.01.2021	WH
CLIENT REVIEW	4	05.11.2021	WH
CLIENT REVIEW	5	05.19.2021	WH
SUBMISSION	6	06.24.2021	WH
SUBMISSION COMMENTS	7	10.04.2021	WH
SUBMISSION COMMENTS	8	11.01.2021	WH
CIVIL/ ELECT COMMENTS	9	11.08.2021	WH
COMBINED SURVEYS/ CL BOUNDARY	10	26.11.2021	WH
ADDED CIVIL BLOCK	11	07.01.2022	WH
GRADES ADDED TO ELEVATIONS	12	04.02.2022	WH
PER MEETING	13	20.12.2022	WH
STATISTICS CHART	14	21.12.2022	WH
12M RIGHT OF WAY- ENTRYS./EXITS	15	08.03.2023	WH

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

REVISIONS TO DRAWING	No.	DATE (DD,MM,YY)	BY

BUILDING PERMIT NUMBER:

NOT FOR CONSTRUCTION WITHOUT PERMIT

KNYMH
ARCHITECTURE • SOLUTIONS

KNYMH INC.
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BURLINGTON, ONTARIO • L7P 0V1
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F 905.639.0394
www.knymh.com info@knymh.com

FIGURE 7A

RESIDENTIAL PROJECT
1354 BRONTE ROAD
OAKVILLE, ONTARIO

DRAWING SHEET TITLE:
SITE PLAN

DRAWING SCALE:

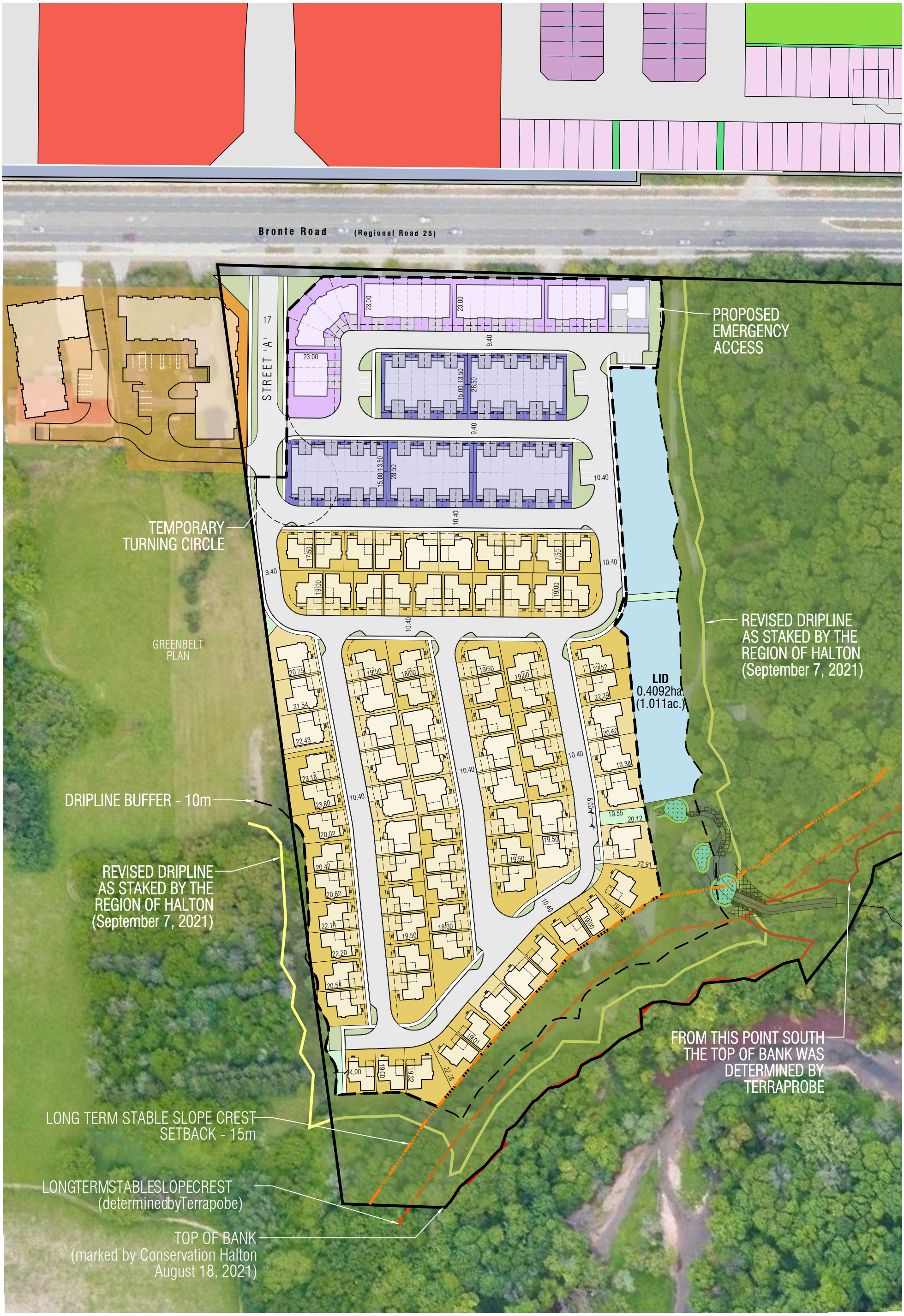
PROJECT NUMBER: 20041

DRAWN BY: CHECKED BY:

DRAWING VERSION:

PLOT DATE: March 8, 2023

DRAWING SHEET NUMBER: SP1



- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.
- Aerial Photo: Google

GERRARD DESIGN

BRONTE RIVER | Oakville, ON

CONCEPTUAL DEVELOPMENT PLAN

PROJECT 1637
DATE MAR 14, 2023
SCALE 1:1500

SK-92

  - 89 condominium town homes;
- Block 2 – Natural Area (LID-RNHS Enhancement Area) – 0.42 ha;
- Block 3 – Natural Area (RNHS Buffer/Significant Valleyland/Setback/Enhancement Area) – 0.88 ha.;
- Block 4 – Natural Area (RNHS Buffer) – 0.01 ha;
- Block 5 – Greenbelt/Parkway Belt West (RNHS Key Features – Woodland etc.) – 5.32 ha;
- Block 6 – Natural Area (RNHS Key Features – Woodland etc.) 0.36 ha;
- Block 7 – Residential Reserve Area – 0.04 ha;
- Block 8 – Road Widening – 0.10 ha;
- Block 9 – 0.3 m Reserve; and
- 17 m Street A ROW.

As part of the proposed redevelopment plan, all existing anthropogenic structures that overlap with the Preliminary RNHS will be restored to a natural condition as is described in **Section 6.6**. This includes the removal of the existing house on 1300 Bronte Road, driveway, garage, lookout platform, and other structures within the woodland.

8.2 Grading

Grading details are outlined in the Functional Servicing and Stormwater Management Report (FSR) prepared by Urbantech Consulting (March 2023). The objectives of the grading design are to:

- Match existing ground elevations at the limits of the RNHS and perimeter of the pocket wetland designs;
- Conform to the Town of Oakville design criteria;
- Provide appropriate cover on proposed servicing;
- Achieve stormwater management and environmental objectives;
- Provide overland flow conveyance for major storm conditions;
- Address boundary drainage conditions where surrounding lands are not developing at the present time;
- Optimize cut and fill operations to minimize import/export;
- Ensure compatibility with extensions of roads into surrounding lands; and
- Adhere to the recommendations of the EIA.

Grading is proposed within the Preliminary RNHS to facilitate the removal of the existing estate home, removal of the existing small pond, and to stabilize the erosion issues and reinstate a natural channel in the upper reach of BCT-1. The grading for these proposed works is also shown in the FSR (Urbantech 2023) as well as the Conceptual Channel Design and Erosion Assessment (GEO Morphix 2023). The proposed grading within the Preliminary RNHS is restorative and for conservation purposes. The Tree Preservation Plan (Kuntz Forestry Consulting 2023) has assessed the impacts of the proposed grading on adjacent trees and has determined that approximately 70 trees will be impacted by the proposed grading works. However, as observed while on-site with agency staff on March 24, 2023, several of these trees are located within areas of severe undercutting along BCT-1 and will soon fall over naturally. It is our opinion that the removal of these 70 trees to facilitate restorative works is not a negative impact as the works are highly localized and will have a positive impact on the Key Features in the Study Area. The disturbed areas will be revegetated, using Conservation Halton's Landscaping Guidelines.

8.3 Stormwater Management and BCT-1 Restoration

8.3.1 Stormwater Management Alternatives

The FSR considered several SWM design alternatives including options with different drainage diversion areas between Bronte Creek and Fourteen Mile Creek as well as options, including a conventional wet pond that would discharge to the storm sewer on Bronte Road versus a biofiltration swale LID feature that would discharge to the BCT-1 tributary. The different design alternatives are discussed in Table 4-1 and Section 4 of the FSR (Urbantech 2023).

The preferred SWM design alternative is to utilize a biofiltration swale LID to collect runoff from most of the Subject Lands. The LID would outlet to a created pocket wetland, enter a naturalized channel and another pocket wetland before being discharged to the existing BCT-1. The remainder of the site, within the Fourteen Mile Creek catchment area, is proposed to drain to a sewer in the Bronte Road right-of-way, and ultimately Fourteen Mile Creek.

During the August 18, 2021, site visit with Town and CH staff, the Study Team outlined a proposed approach for discharging stormwater from a portion of the Subject Lands to Bronte Creek using the natural drainage outlet provided by BCT-1 tributary. Town and CH staff recommended that the Study Team explore other locations for discharging stormwater to Bronte Creek.

To address this request, the Study Team undertook an analysis and determined that there are only two options to outlet stormwater from the Subject Lands to Bronte Creek. Option A utilizes the BCT-1 as this is the only available natural drainage outlet to Bronte Creek proximal to the proposed redevelopment and provides an opportunity to restore conditions in this area to a more natural condition. Option B would consist of creating a new outlet that would consist of a large drop structure and an outfall headwall beside Bronte Creek at the base of the steep valley slope.

An evaluation of Options A & B is presented in Section 4.3.4 and Table 4-4 of the FSR (Urbantech 2023) and summarized below.

Option A – Naturalized Outlet to BCT-1

BCT-1 represents the natural drainage outlet for much of the Subject Lands. Most of the drainage from the Subject Lands and adjacent upstream drainage catchment areas are directed to the two artificial pond features and these outlet to the BCT-1 gully and then to Bronte Creek.

This option is considered least impactful to the environment as it utilizes the natural drainage outlet and provides an opportunity to restore the area previously modified by the creation of the artificial small pond.

Although not required to facilitate the proposed development, this Option will also involve the restoration and stabilization of the eroded sections of the BCT-1 gully on the Subject Lands. GEO Morphix has prepared a design to replace the smaller artificial pond features with a natural channel and pocket wetlands to provide a more ecologically appropriate interface between the biofiltration swale LID feature and the BCT-1 gully that complements the RNHS.

To facilitate the construction of the naturalized channel and removal of the smaller artificial pond some minor work within the Significant Woodland and Buffer will be required. It is estimated that an area of approximately 265 m^2 within the Significant Woodland will be temporarily affected, but immediately restored. An additional area of 1,660 m^2 outside the Significant Woodland, and within the Buffer will also be temporarily affected and immediately restored.

This option results in the least impact to the RNHS in terms of construction and implementation impacts and provides for a stormwater outfall on lands that will ultimately be owned by the Town and easily accessible as compared to an inaccessible outlet on Bronte Creek Provincial Park lands.

Option B – Bronte Creek Outfall

As previously described, during the site visit on August 18, 2021, CH staff requested that an alternative outlet to the main Bronte Creek valley be considered. Specifically, CH requested that the construction of a stormwater outfall directly to the base of the main Bronte Creek valley be explored using directional drilling. This would require the use of a significant drop structure, given the height of the valley in this area. This proposed alternative was thoroughly reviewed by the Study Team from various perspectives including constructability, impacts to natural heritage and natural hazard features and cost. In comparison to the Study Team's recommended outfall to BCT-1, a drop structure outlet to the main Bronte Creek will have significant impacts to the natural heritage system and natural hazards within and along the valley slope. Specifically, the construction of a drop structure will necessitate the creation of a headwall within the valley which will require that construction vehicles have access to the base of the valley. There is no existing access route into the valley in this location and, as such, a new construction access route into the valley would need to be created on lands owned by Ontario Parks (Bronte Creek Provincial Park). This would involve significant tree removal and grading along the slopes of the main Bronte Creek valley, to provide safe machinery access, creating a 10,000 m^2 area of disturbance. This disturbance would require the removal of vegetated areas within the significant woodland that would take decades to replace. Once at the base of the valley, the creek is at the toe of slope, which may necessitate placing fill into the creek / redirecting the creek in order to create a construction access route to the headwall location. In addition to the extensive impact to the natural environment that would be required to implement this option, the cost of the drop structure, and the long-term maintenance implications to the Town are significant. Finally, this option would result in the creation of permanent infrastructure within Bronte Creek Provincial Park that would be generally inaccessible by the Town.

Preferred Approach

Based on the Study Team's evaluation of both outlet options, the team is of the opinion that Option A (the naturalized channel outlet to BCT-1) will result in significantly fewer impacts to the natural environment This option will also provide an opportunity to rectify existing erosion issues within the BCT-1a reach. Furthermore, all the works can be implemented entirely from the Subject Lands and will result in a stormwater outfall that is on Town owned lands and accessible by the Town.

8.3.2 Stormwater Management Strategy Objectives

The objectives of the SWM strategy are as follows:

- Provide erosion control and meet pre-development flows for Bronte Creek. For 14 Mile Creek meet the pre-development targets outlined in PCSWMM model for 14 Mile Creek received from DSEL (December 2022);
- Provide extended detention for 24- to 48-hour drawdown for 14 Mile Creek and Bronte Creek, and ensuring the erosion threshold target flow rate established by GEO Morphix is met for Bronte Creek;
- Ensure minimum MECP enhanced (Level 1) stormwater quality treatment of runoff is provided;
- Endeavor to maintain pre-development water balance through the use of LID measures to the extent possible; and
- Provide safe overland flow conveyance of the 100-year event.

Details of the proposed stormwater management (SWM) strategy are outlined in the FSR (Urbantech 2023) and the Conceptual Channel Design and Erosion Assessment (GEO Morphix 2023). A summary of the various stormwater components is presented below.

8.3.3 Description of Proposed Biofiltration Swale –- LID

The proposed biofiltration swale LID feature has been designed by Urbantech to meet required quality and quantity controls, including Enhanced Level 1 protection that will be provided through the combination of two OGS units and the biofiltration swale LID. Additionally, a 750 mm clean water system pipe is proposed to convey flows from a 5.2 ha external drainage area. The bypass pipe outlets to the upstream limit of the naturalized channel near the outlet of the bio-filtration facility. A flow splitter is located upstream of the outlet to convey the flows from the 10 mm event to the LID to mitigate downstream erosion.

The biofiltration swale LID feature has been designed to contain stormwater runoff from the 25 mm though the 100-year events. Runoff from the 25 mm event will percolate through the floor of the swale through engineered topsoil (special topsoil/sand mixture) and be subject to evapotranspiration through vegetation. Beneath engineered topsoil is a rock gallery with a perforated underdrain that collects filtered flows that are released to the naturalized outlet channel. An impervious liner is proposed beneath the bio-filtration swale to preclude groundwater intrusion into the filter and underdrain. Runoff for events greater than the 25 mm event will be controlled to pre-development peak flow levels or lower. It should be noted that the biofiltration swale LID has been designed to reduce overall erosive hours based on continuous hydrologic modeling which reduces the risk of further erosion in BCT-1.

The biofiltration swale LID is proposed to be located outside the limits of the Preliminary RNHS identified in **Section 6.9**. The biofiltration swale LID is proposed immediately adjacent to the 10 m Buffer to the Significant Woodland. The biofiltration swale LID is approximately 170 m long with a trapezoidal shaped cross section, 3-6 m bottom width, 3:1 side slopes which will be planted with native vegetation, and 17–22 m top width with a varied bank height.

The location of the biofiltration swale LID provides for a 20 m wide strip between the proposed redevelopment and the Buffer to the Significant Woodland. The biofiltration swale LID will be partly naturalized and provide for improved water quality by controlling flows and mitigating erosion within BCT-1. The ecological functions provided by this green infrastructure facility contribute to the protection, maintenance, and improvement of the adjacent Key Features of the RNHS and serves to increase their ecological resilience.

For these and other reasons, the biofiltration swale LID is considered an Enhancement to the Key Features and is proposed to be included as part of the Final RNHS as is further discussed in **Section 8.6**.

8.3.4 Description of Outlet to BCT -1 – Natural Channel and Pocket Wetlands

While described in the stormwater section of this report, it should be noted that the outlet to BCT-1 does not represent stormwater management infrastructure. All works described in this section will be limited to the Subject Lands

As has been observed by agency staff over the course of several site visits, there is existing erosion taking place along the upper reach of BCT-1. To address this existing erosion, GEO Morphix has designed erosion protection measures that involve the use of an alternating cascade using hydraulically sized keystones as well as lining the sides of the upstream reach with a vegetated rock buttress. Further details are provided in the Conceptual Channel Design Report (GEO Morphix 2023). The provision of this erosion protection, to mitigate existing erosion, will be a benefit to the RNHS by stabilizing BCT-1 and the surrounding gully, thereby mitigating potential for further tree loss and long-term sedimentation of Bronte Creek.

The proposed works, upstream of BCT-1, relate to removing the artificial pond, and creation of a natural channel connection, with 0.03 ha of pocket wetlands, between the proposed biofiltration swale LID and BCT-1. This work is not required to meet SWM objectives as quantity, quality and erosion control is provided for in the biofiltration swale LID and OGS's, but rather is intended to restore a more natural connection to BCT-1 as compared to existing conditions which include a dug pond, berm, and associated erosion.

GEO Morphix (2023) has prepared conceptual plans for this outlet based on natural channel and ecological design principles (ref. Drawings GEO-1, DET-1 to DET-3 within the separate Conceptual Channel Design and Erosion Assessment). The design connects the outlet of the biofiltration swale LID outlet to BCT-1 using three pocket wetlands, a natural channel, and an alternating cascade morphology. This design includes two online pocket wetlands, designed to provide for flow detention, attenuation, and polishing which are supplementary to the biofiltration swale LID. Brush mattresses are proposed along the channel and the cascade, and the wetlands and intervening lands will be revegetated and naturalized with native species.

The proposed natural channel, pocket wetlands, and cascade tie in to BCT-1 have been designed by GEO Morphix to accept flows from the bio-filtration swale LID and the external area clean water system and will release flows into the upper reach of the restored BCT-1. As described by GEO Morphix (2023), the benefits of the proposed wetlands include organic inputs, temperature regulation, polishing, energy dissipation, and dispersion of flows. Additionally, by retaining flows, the wetlands can provide supplementary opportunities for infiltration, evapotranspiration, and detention (GEO Morphix 2023). The total area of pocket wetlands is similar to the wetland area that is proposed for removal, and they are designed to provide improved hydrologic functions, thereby resulting in no loss of wetland habitat/function on the Subject Lands. Additional ecological benefits of creating the natural channel and pocket wetlands are the provision of a compatible interface between the residential redevelopment and the Key Features. The proposed restorative works will be limited primarily to areas on the Subject Lands outside of Key Features and the Greenbelt. The restorative works provide for an additional 20+ m of land to be naturalized between the redevelopment and the Buffer to the Significant Woodland.

As discussed during the March 24, 2023, agency site visit, the erosion threshold analysis, for the release rate into BCT-1, has been completed based on existing conditions and unrelated to the proposed restoration works. The proposed restoration works have been identified to address an existing negative impact within the RNHS and, it is the Study Team's recommendation that it is in the greater public interest to address this existing erosion. The only other alternative is to leave BCT-1 in its current degraded condition.

The purpose of the restorative works is to improve the functions of the adjacent RNHS Key Features and to increase their ecological resilience. For this reason, and other reasons discussed throughout this report, the area proposed for the naturalized channel and pocket wetlands located outside of the Key Features, Buffers and Setbacks represents an Enhancement Adjacent to the Key Features; therefore, these areas are proposed to be included as part of the Final RNHS, as is further discussed in **Section 8.6**.

8.3.5 Outfall to Fourteen Mile Creek Tributary

While the final alignment of the storm sewer within the Bronte Road right-of-way remains under discussion with Region staff, an outlet to the Fourteen Mile Creek will be required. It is possible that this outlet could be combined with the existing outfall that conveys Bronte Road drainage to Fourteen Mile Creek. However, until the final location of the storm sewer is decided by the Region, the exact location and configuration of the outfall to Fourteen Mile Creek cannot be determined. For this reason, the impacts of this outlet have not been assessed in this EIA. Regardless, the outfall will be either within the existing headwall or a new headwall in proximity to the existing headwall, located on the south side of the Fourteen Mile Creek tributary, approximately 360 m north of the Subject Lands. Works related to this infrastructure will require a permit from CH pursuant to Ontario Regulation 162/06.

8.4 Servicing

A summary of the underground servicing for wastewater and potable water is as follows:

- 200 mm gravity sewers network;
- Sewer network discharging to an existing sewer in the west boulevard (right of way) of Bronte Road, subject to the approval by the Region; and
- Water servicing (potable) from Bronte Road with watermains ranging from 150 to 300 mm.

None of these services are proposed within the RNHS and, as such, no negative impacts are anticipated.

8.5 Trails

No trails or access points to the RNHS are proposed as part of the current redevelopment proposal to avoid potential impacts to Key Features. Beacon recommends the full decommissioning and ecological restoration of the existing network of trails and associated building/driveway within the Significant Woodland on the Subject Lands. This recommendation would provide the greatest ecological benefit to Key Features by avoiding future disturbance by humans and pets. It would also result in the restoration

of approximately 3,250 m^2 of disturbed area within the woodland, as illustrated in **Appendix F – Figure A-01**. In addition, Beacon recommends the removal of the existing overlook/platform that was constructed by the previous landowner on lands owned by Bronte Creek Provincial Park. This platform is cantilevered over the Bronte Creek valley, a Significant Valleyland, and is located beyond the LTSTOS.

It is Beacon's understanding that the Town has expressed an interest in repurposing some of the existing trails within the woodland to provide public access and connections to Bronte Road, including possible reuse of the existing driveways at 1300 Bronte Road. While trail usage can be supported within the RNHS, mitigation measures would need to be implemented to ensure that adverse impacts to sensitive features are minimized, as illustrated in **Appendix F - Figure A-02**.

As the existing trails are within Greenbelt Protected Countryside, Greenbelt policies related to trails will apply. Should the Town wish to pursue a trail within the woodland in the future, measures that should be considered by the Town and the Greenbelt policies related to a woodland trail include, but are not limited to, the following:

- Retain and repurpose a minimal number of trails, preferably only the central loop trail that is most commonly used at present (Greenbelt Policy 3.3.3(4)(c));
- Decommission other trails and restore to woodland by planting native species as outlined in **Section 6.6**;
- Restrict uses:
    - To minimize negative impacts the Key Feature (pets, bikes, etc.);
    - Inappropriate to the reasonable capacity of the trail (Greenbelt Policy 3.3.3(4)(d));
- Establish fencing alongside the trail (wood/paige wire) to limit encroachment beyond the trail and protect the key natural heritage features and functions (Greenbelt Policy 3.3.3(4)(g);
- Limit trail width to existing width;
- Surface with inert material such as mulch or limestone screenings;
- Establish barrier plantings in select areas;
- Provide litter receptacles at trail-side and trailhead(s); and
- Provide interpretive signage to discourage going off-trail or off-leash pets and foster stewardship.

8.6 Final RNHS Limits

Section 6.9 identified a Preliminary RNHS which was illustrated on **Figure 6**. As explained at the beginning of **Section 8**, additional refinements to the RNHS require identification of additional opportunities for enhancements through the design of the redevelopment proposal and more specifically opportunities to integrate green infrastructure as part of the environmental management systems for addressing surface and groundwater resources in a manner that not only protects the Key Features of the RNHS, but also contribute to improving their ecological health and resilience.

As was explained in **Sections 8.3.3** and **8.3.4**, the proposed biofiltration swale LID and naturalized channel and pocket wetlands provide for improved water quality and erosion control and many complimentary ecological functions to the adjacent Key Features of the RNHS and have therefore been included within the Final RNHS.

The Final RNHS, as illustrated on **Figure 8**, includes all applicable components of the RNHS as per ROP policy 115.3. Additionally, NHS components such as erosion hazards, that are not included in the Region's description of RNHS have also been included in the Final RNHS. The Final RNHS forms the Limits of Development. All areas identified as part of the RNHS will be dedicated to the Town.

9. Impact Assessment and Recommended Mitigation

The EIA Terms of Reference require that an impact assessment be prepared to describe how the proposed redevelopment may affect the Key Features and functions of the RNHS.

As was explained in **Section 8**, the proposed redevelopment was designed with the objective of protecting, maintaining, restoring and enhancing the significant natural heritage features and ecological functions associated with the Subject Lands. The proposed redevelopment has been designed to avoid developing within any significant natural heritage features and natural hazards.

The removal of a small (0.01 ha) non-significant wetland from the RNHS is required to create the proposed naturalized channel that will convey treated runoff from the biofiltration swale LID to the BCT-1 drainage feature. This proposed naturalized channel has been designed to have a small footprint that minimizes impacts to Key Features and incorporates approximately 0.03 ha of pocket wetlands that are anticipated to provide comparable or improved wetland functions. In addition, the proposed restorative works, will mitigate existing erosion within BCT-1.

As the proposed redevelopment plan has been designed to avoid Key Features and natural hazards and their associated buffers and setbacks (except for the restorative works within BCT-1 describe above), direct impacts have been avoided or minimized. As such, potential impacts to Key Features resulting from the redevelopment are limited to indirect impacts that can be more readily managed and mitigated.

As with the other components of this EIA, an integrated multi-disciplinary approach has been applied to assessing the potential impacts of redeveloping the Subject Lands, ground and surface water resources in sustaining wetlands, and fish and wildlife habitat.

The impact assessment matrix (**Table 9**) is structured to:

- Identify the specific development activity (impact source);
- Describe the potential effect on environmental receptors (features and functions);
- Recommend mitigation measures to address potential impacts; and
- Describe the net effect on the biophysical environment.

The impact assessment matrix is organized according to ecosystem components (e.g., geology, landforms, hydrogeology, hydrology, aquatic systems, terrestrial systems, etc.). The matrix describes the impact source(s) (development/ site alteration activity), the potential impact to the impact receptor(s) (features, attributes and functions), the recommended mitigation (including special monitoring or management needs), and the anticipated residual impacts.

Legend

- Subject Lands
- Key Features (Habitat of Endangered or Threatened Species, Significant Wetland, Significant Woodlands, Significant Valleylands, Significant Wildlife Habitat, Significant Area of Natural and Scientific Interest, Fish Habitat), Linkage, Watercourse, and Non-Significant Wetlands
- Enhancements Internal to Key Features
- Enhancements Adjacent to Key Features (0.72 ha)
- Buffers
- Naturalized Hazard Setback (15 m) to Long-term Stable Top of Slope
- Final Regional Natural Heritage System (Beacon 2023)

Final Regional Natural Heritage System	Figure 8

Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville, ON

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: April 2023

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.	Prepared by: SZ Checked by: KU

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Table 9. Impact Assessment and Mitigation Matrix

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
Geology	**Bedrock Geology**	Grading and Servicing	Bedrock on the Subject Lands is at least 6 m below ground surface and will not be impacted by grading and servicing (Terraprobe 2023).	• None	Neutral
	Surficial Geology/ Physiography/ Topography	Site Preparation, Grading, Servicing	The topography of the Subject Lands is generally flat and bordered by steep valleylands to the south and west. To accommodate future development, the Subject Lands will be graded. Based on the preliminary grading plans, it is not anticipated that the magnitude of these grade changes will alter the character of the landform, however topographic relief will be affected at a local scale.	• Maintain a cut and fill balance to the extent feasible to minimize importing and exporting. • Match grades at outer property limits. • Match grades at development limits. • With the exception of the proposed naturalized channel and restorative works within BCT-1, removal of the existing house and barn from within the 15 m regulatory allowance to LTSTOS, avoid grading within Key Features, within 15m of stable top of slope or the 10m woodland buffer.	Neutral
Soils	**Topsoil**	Site Preparation, Grading, Servicing	Site preparation will require topsoil stripping and stockpiling to facilitate grading and servicing. Topsoil resources can be lost through mixing with sub soils and exposure to sun, wind, and water erosion.	• Protect and reuse topsoil resources by minimizing exportation or importation. • Implement Best Management Practices (BMPs) such as proper separation, stockpiling and erosion control measures, amendment and reapplication to the site following construction.	Neutral
Groundwater	**Groundwater Flows & Levels**	Grading, Servicing and Development	The direction of groundwater flow is not anticipated to be affected and to continue to flow in a southwestern direction towards Bronte Creek. The removal of the large pond, installation of site servicing utility lines and underground basement levels and/or foundations would not have the potential to affect groundwater levels.	• Implement BMPs for servicing construction. • Utilize trench plugs or anti-seepage collars along installed services to prevent redirection of groundwater flows and water table lowering however, some adjustment to the water table is possible as a result of the removal of the large pond. • Implement de-watering recommendations outlined in DS Consultants (2023b). • All excavations for site servicing and/or underground levels should be backfilled with soil material of similar permeabilities to the excavated parent native soil to minimize disruption to the groundwater flow regime. It is recommended that backfilling of all excavations or trenches, where necessary, be completed using the excavated native soil.	Neutral
	Groundwater Quality	Grading, Servicing and Development	Under the post-development scenario, contaminants such as oil, sand, salt and other debris may affect the water quality of surface runoff and consequentially that of the groundwater systems.	• Implement the Erosion and Sediment Control recommendations as detailed in the FSR (Urbantech 2023). • Implement the Stormwater Management strategies as detailed in the FSR (Urbantech 2023).	Neutral

	Dewatering	Grading, Servicing and Development	The two artificial pond features will require dewatering so they can be filled, or as is the case with the smaller pond, restored with natural channel design principles. Depending on rate of discharge where the water is released there is a potential for impacts such as erosion and sedimentation of receiving watercourses.	• Implement de-watering recommendations outlined in DS Consultants (2023b).
				• Develop and implement a Dewatering Management Plan (DMP) at the detailed design stage to ensure water is managed appropriately.
				  ○ Secure permits from the MECP for dewatering activities, if necessary, based on volumes.
				  ○ Groundwater infiltration into the temporary excavations will be controlled by the Contractor.
				  ○ If there are exceedances of the discharge water against the PWQO criteria, then pre-treatment should be completed prior to discharging into the receiving surface water source.
					Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
				• Where dewatering is required, effluent shall be discharged in a way that prevents sedimentation to watercourses.	
Surface Water	**Drainage Patterns**	Grading, Servicing and Development	Under existing conditions surface flow from 3.7 ha of the Subject Lands drains to the existing artificial ponds and then into BCT-1 ultimately draining into Bronte Creek (Urbantech 2023). 3.26 ha of the property drains east to 14 Mile Creek where it is conveyed north by an existing roadside ditch where it eventually outlets to 14 Mile Creek (Urbantech 2023). The development of the site will result in the redirection of flows such that most of the site will drain to the Bronte Creek.	• Implement the Stormwater Management Strategy as detailed in Section 4 of the FSR (Urbantech 2023).	Neutral
	Surface Water Runoff	Grading, Servicing and Development	Uncontrolled surface runoff has the potential to impact surface water features and natural heritage features downstream in Bronte or 14 Mile Creek. Impacts typically include erosion and sedimentation which can affect water quality and aquatic habitat. To address uncontrolled flows, the flows released from the bio-filtration facility are designed to be overcontrolled to ensure the release targets are met. The bio-filtration LID and treatment train are designed to have a net positive impact in the long term by mitigating the potential for downstream migration of suspended solids in residential runoff.	• Implement proposed SWM plan and erosion control measures as detailed in FSR Sections 4 and 7 (Urbantech 2023).	Neutral-Positive
	Geomorphological Processes	Grading, Servicing and Development	The proposed increase in impervious surfaces has the potential to increase erosion in BCT-1, if uncontrolled. The biofiltration LID has been designed to provide erosion control through extended detention to not exceed the erosion threshold, as demonstrated by a continuous model. The biofiltration swale, treatment train, and BCT-1 restoration are designed to have a net positive impact in the long term by restoring the upstream reach of BCT-1 and mitigating the potential for future erosion of BCT-1.	• Implement proposed SWM plan and erosion control measures detailed in FSR Sections 4 and 7 (Urbantech 2023). • Implement restorative measures along BCT-1 as detailed in the Conceptual Channel Design and Erosion Assessment (GEO Morphix 2023).	Neutral-Positive
	Water Quality	Grading, Servicing and Development	Stormwater runoff captured by the proposed stormwater infrastructure could affect water quality in downstream reaches if released without quality control.	• The biofiltration LID and OGS have been designed to meet MECP enhanced level protection. For more information refer to FSR Section 4.4 (Urbantech 2023).	Neutral-Positive
	Water Quantity	Grading, Servicing and Development	Stormwater runoff, if not properly managed, could affect water quantity in downstream reaches.	• Implement proposed SWM plan outlined in FSR Section 4.5 (Urbantech 2023). • The biofiltration LID has been designed to target reduced flows.	Neutral

	Site Water Balance	Re-development	Re-development of the Subject Lands will increase the area of impervious surfaces relative to pervious surfaces and potentially cause a decrease in infiltration. If unmitigated, this decrease in infiltration may cause an increase in runoff to the RNHS.	• SWM plan designed to provide required water quality, quantity and erosion control.
				• Additional surficial LID techniques recommended for the Subject Lands include:
				  ○ Increasing topsoil thickness across lots and boulevards;
				  ○ Directing roof runoff to pervious areas (i.e., rear yards) via downspout disconnection
				• BMPs for topsoil placement will be used to minimize compaction
					Neutral

Natural Heritage System	**Linkages**	Grading, Servicing and Development	The Bronte Creek valleylands represent a regional scale linkage corridor. The proposed redevelopment will be confined to portions of the tablelands that are already developed and will therefore not impede on the functions of this linkage. A small portion of the linkage (naturalized channel), at the upstream reach of BCT-1, will require temporary alteration.	• Restore areas disturbed for creation of naturalized channel using locally native vegetation.	Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
	Significant Woodlands	Grading, Servicing and Development	Significant Woodlands occur along portions of the Bronte Creek valleylands and on the tableland portion of the Subject Lands and broader Study Area. Except for the pocket wetlands and naturalized channel design and restorative works along BCT-1, no development is proposed within the Significant Woodland or its buffer. Construction of the naturalized channel and pocket wetlands could damage the roots of trees within the adjacent Significant Woodland and if unmitigated, sediment from the construction could impact downstream vegetation and water quality. It is anticipated that the tableland woodland contained within the Greenbelt portion of the Subject Lands will be dedicated to the Town who will determine whether this feature will be made accessible to the public for recreation and natural appreciation in the future. This EIA has included recommendations for management and enhancement of the woodland. Within the Greenbelt Plan area, five trees (in approximately 100 m^2) are anticipated to require removal to facilitate the BCT-1 restoration works (Kuntz Forestry Consulting 2023). This restoration and erosion control design will be a long-term net benefit to Key Natural Heritage Features and Key Hydrologic Features, as the design is intended to mitigate existing erosion along BCT-1 and potential for downstream sedimentation. Within the Significant Woodland, 13 trees (in approximately 200 m^2) including the 5 noted above that are also within the Greenbelt Plan, are anticipated to require removal to facilitate the restorative works within BCT-1 (Kuntz Forestry Consulting 2023).	• Mitigate the disturbance to tree roots during construction of naturalized outlet, as feasible, by matching existing grades at the interface between the naturalized outlet/pocket wetlands and the woodland. • Removal of trees will be offset by compensation plantings (Kuntz Forestry Consulting 2023) in the Greenbelt Plan area (tableland woodland), the Significant Woodland, Buffers, and Enhancement Areas • Restore areas disturbed for creation of naturalized outlet using locally native vegetation. • Implement woodland buffer and naturalize in accordance with CH guidelines. • Design SWM facilities such that erosion threshold of BCT-1 is not exceeded.	Neutral—Positive (Long-term)
	Significant Wetlands	Grading, Servicing and Development	There are no provincially significant wetlands or regionally significant wetlands associated with the Subject Lands. A potential Significant Wetland is present within ELC Unit 13, at the edge of the Study Area, downstream of BCT-1, the alluvial fan, and Bronte Creek. Although no impact is anticipated to this Key Feature, any impacts to this feature would directly affect its associated fish habitat. See Fish and Fish Habitat below for more discussion of impacts.	• See mitigation related to Fish and Fish Habitat below.	Neutral
	Non-Significant Wetlands	Grading, Servicing and Development	There is one wetland (0.01 ha) associated with the outlet of the small artificial pond on the Subject Lands (ELC Unit 3). The ecological functions of this wetland are limited due to its small size and invasive vegetation (*Phragmites*). This wetland and the adjacent artificial pond will be removed to facilitate the construction of a naturalized channel. This will result in the temporary loss of some wetland habitat.	• Create 0.03 ha of pocket wetland, as detailed in FSR (Urbantech 2023) and Conceptual Channel Design and Erosion Assessment (GEO Morphix 2023), to improve the wetland storage and water quality improvement functions.	Neutral - Positive
	Significant Valleylands	Grading, Servicing and Development	Significant valleylands associated with Bronte Creek overlap the Subject Lands and broader Study Area. These valleylands are entirely contained within the boundaries of the Greenbelt and, except for the BCT-1 restorative works, are not expected to be impacted by proposed development.	• Implement woodland buffer and stable top of slope setback and naturalize in accordance with CH guidelines. • Implement restorative works along BCT-1 as detailed in the Conceptual Channel Design and Erosion Assessment (GEO Morphix 2023)	Neutral
Natural Heritage System (continued)	**Significant Areas of Natural and Scientific Interest**	Servicing/Stormwater	Significant ANSI occurs along portions of the Bronte Creek valleylands and Significant Woodland on both the Subject Lands and broader Study Area. With the exception of the naturalized channel, creation of small pocket wetland	• Mitigate the disturbance to tree roots during construction of naturalized channel, as feasible, by matching existing grades at the interface between the naturalized channel/pocket wetlands and the woodland.	Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
			features and the restorative works along BCT-1, no other alterations are proposed within the Significant ANSI. It is planned that the Significant ANSI associated with the Subject Lands will be dedicated to the Town, who will determine whether this feature will be made accessible to the public for recreation and natural appreciation in the future. This EIA has included recommendations for management and enhancement of the woodland.	• Minimize disturbance to tree roots during implementation of the restorative works along BCT-1 while recognizing that several trees are already compromised due to significant undercutting beneath them • Restore areas disturbed for creation of pocket wetlands, naturalized channel and BCT-1 restorative works using locally native vegetation. • Implement revegetation in accordance with CH guidelines. • Design SWM facilities such that the erosion threshold of BCT-1 is not exceeded.	
Trees	**General Habitat**	Grading, Servicing and Development	The Tree Inventory and Protection Plan (Kuntz Forestry Consulting 2023) indicates that 16 trees within Key Features will require removal to facilitate (1) the demolition of both the garage in the tableland and the outbuilding adjacent BCT-1; and (2) the construction of the naturalized channel, pocket wetlands and restorative works along BCT-1. With respect to trees located in the buffer and stable slope setback (i.e., within the Preliminary RNHS but not Key Features, an additional 55 trees will require removal to facilitate the proposed works. Within the Enhancement Adjacent to Key Features area an additional 53 trees will be removed to facilitate construction of the LID. Most of the existing trees in this location are planted Apple (remnants of an old orchard), White Spruce, Eastern White Cedar, and Paper Birch.	• Implement tree protection recommendations of Arborist Report (Kuntz Forestry Consulting, 2023). • Removal of trees will be addressed by plantings (Kuntz Forestry Consulting 2023) in the Greenbelt Plan area (tableland woodland), the Significant Woodland, Buffers, and Enhancement Areas.	Neutral
Wildlife	**Light effects on Migration, Wake-Sleep Cycles, etc.**	Lighting type and operation	Birds guided by moonlight can be disoriented by artificial lights. Most fauna on the Subject Lands rely on sunlight to help maintain their circadian rhythm (sleep-wake cycles). It should be noted that there is recently lighting associated with the structures on the Subject Lands and streetlighting along Bronte Road that influences the adjacent natural features.	• Implement lighting that would minimize sky-glow and the intrusion of unwanted lighting into adjacent natural areas during and post construction • Require construction lighting to be turned off when there is no construction activity	Neutral
	Noise effects on Animal Behaviour	Site Preparation, Grading, Servicing	Excessive noise can alter animal behaviour and/or induce stress responses. The site is situated immediately adjacent to Bronte Road which results in a high level of ambient noise across most of the Subject Lands. There will be increased noise during the construction phase, but over the long term, it is not anticipated that the proposed residential uses will generate excessive noise that will be disruptive to wildlife. Furthermore, the main sensitive ecological receptors are associated with the valleylands which are physically separated from the development.	• Excessive noise during construction is anticipated to be short in duration. • Following construction, ambient noise from Bronte Road is anticipated to exceed noise generated from the residential development.	Neutral
Wildlife (continued)	**Birds**	Vegetation Clearing	Through the breeding bird surveys completed by Beacon in 2021, it was determined that the majority of the species observed in the proposed development area consist of open land bird species commonly found in anthropogenic rural settings. No significant change in diversity is expected to occur post development. All the interior and edge species that occur within the Greenbelt are expected to remain subject to the usual annual variation.	• Undertake vegetation / tree clearing between August and April so as not to impact breeding birds and not contravene the *Migratory Birds Convention Act.* • Establish buffers and fencing at development limits adjacent to the NHS to reduce human encroachments and predation by pets. • Post signage to keep pets and people out of the wooded features (except where potential future trails may allow).	Neutral
	Reptiles	Grading, Servicing and Development	Background review and field surveys have identified three reptile species onsite. These include a Midland Painted Turtle, Gartersnake and DeKay's Snakes. Midland Painted Turtles have not been observed at the artificial ponds during	• The loss of potential foraging habitats for snakes can be mitigated by retaining habitat within the buffer around the Greenbelt.	Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
			field surveys in 2021. The development of the tablelands is not expected to negatively impact reptile species.	• Prior to construction and pond removal, the ponds should be resurveyed. Should any turtles be detected, they should be relocated to suitable habitat in the adjacent landscape. A Wildlife Rescue Plan shall be prepared and necessary MNRF permits or authorizations obtained.	
	Amphibians	Grading, Servicing and Development	Surveys to investigate breeding amphibian habitat on the Subject Lands were completed by Dance Environmental in 2013 and by Beacon in 2021. A total of three amphibian species were heard calling within the Subject Lands as discussed in **Section 4.5**. No significant breeding calls were observed.	• The loss of potential habitats for amphibians can be mitigated by retaining habitat within the Greenbelt and through the creation of small pocket wetland features and a naturalized channel which are not anticipated to require any regular maintenance (GEO Morphix 2023). • A Wildlife Rescue Plan shall be prepared and necessary MNRF permits or authorizations obtained.	Neutral
	Mammals	Grading, Servicing and Development	Presence of mammalian species within the Subject Lands was compiled from incidental observations from field surveys completed to date. All the mammal species that are currently present on and adjacent to the Subject Lands are urban tolerant species and expected to remain in the post development environment. It is anticipated there will be a slight shift in species assemblages toward a greater number of species that are more tolerant of urban environments. For example, Deer use is expected to decrease, while Raccoon and Striped Skunk populations could increase. Wildlife movement patterns in the general vicinity are expected to change as landscape resistance will increase as a result of development. It is expected that future wildlife movement will be more concentrated to the valleyland corridor and buffers associated with Bronte Creek.	• Encourage wildlife passage through the Greenbelt / Valleylands, through the use of fencing along the property lines, as a means of reducing the potential for vehicular impacts and human/wildlife interactions.	Neutral
	Significant Wildlife Habitat (SWH)	Artificial Pond Removal, Servicing/Stormwater and BCT-1 Restorative Works	SWH is present within the Greenbelt significant woodland and adjacent Bronte Creek Provincial Park lands. The proposed development will be situated outside the Greenbelt and will not impact on SWH on the Subject Lands or broader Study Area, save for the restorative works in BCT-1.	• Limit tree removals to only those necessary to conduct erosion protection work safely. Note that proposed tree removals adjacent to BCT-1 have potential to be undercut and fall into BCT-1 in the future. • Restore areas disturbed for creation of naturalized channel using locally native vegetation. • Implement recommended buffers and plant with native species, in accordance with CH Guidelines • Install fencing at rear lots adjacent to the RNHS to mitigate human encroachment or disturbance • Control access to RNHS	Neutral-Positive

Wildlife (continued)	**Fish and Fish Habitat**	Artificial Pond Removal, Servicing/Stormwater and BCT-1 Restorative Works	The two artificial waterbodies are exempt from the protection provisions of the *Fisheries Act*. However, there is an introduced (unnatural) fish population within the large pond. Therefore, all appropriate permits from relevant agencies will be obtained to facilitate the removal of the ponds including fish and wildlife collection and relocation.
			
			The proposed natural channel outlet to BCT-1 will be constructed in the area between the two artificial ponds. Most of the required footprint to enable the installation of the natural channel design and associated pocket wetlands will occur within the boundaries of the small artificial pond; however, the channel extends below the existing berm and ties into the existing channel at the upper reach of BCT-1, within the boundaries of the Subject Lands.
				• Potential indirect impacts to fish and fish habitat can be avoided and/or reduced by implementing the following mitigation measures:
				  • Prior to construction, a detailed Erosion and Sediment Control Plan will be developed in accordance with the *Erosion and Sediment Control Guide for Urban Construction* (TRCA 2019).
				  • Any grading or site alteration related activities should be confined to the established limit of development.
				  • Minimize non-essential vegetation clearing and grading, and integrate a phasing workplan for grading and construction;
					Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
			A portion of the restoration works will occur within the indirect fish habitat identified for the BCT-1a reach. The function of the indirect habitat is to provide water and nutrients to downstream habitats. During construction, the function of the indirect habitat may be temporarily affected. However, provided the duration of the work is kept minimal and the recommended environmental protection and mitigation measures are applied it is anticipated that the proposed work will comply with the fish and fish habitat protection provisions of the *Fisheries Act* and shall avoid causing the death of fish and the HADD of fish habitat. Furthermore, it is expected that the proposed restoration will result in positive residual effects on the fish habitat within BCT-1. The proposed design removes an existing artificial pond which is currently discharging warm water into BCT-1 at a volume that has caused erosion within the upper reach and replace it with a low flow channel, pocket wetland features and an alternating keystone cascade morphology that will aid in stabilizing the high gradient channel within the BCT-1a reach.	• Fencing at the development limit should be regularly inspected and maintained in good working order throughout the construction period. Fencing should be removed upon completion of construction after exposed soils have been stabilized. Standard Best Management Practices, including the provision of sediment control measures, should also be employed during the construction process. • Timing restrictions for in-water works shall be implemented to protect the sensitive life stages/processes of migratory and resident fish. • If dewatering is necessary, fish screens will be used to avoid entrainment of fish in pumps or hoses. • Manage all water from dewatering operations to prevent erosion and / or release of sediment laden or contaminated water into a waterbody. • Any fish isolated in any in-water work areas shall be transferred (using appropriate capture, handling and release techniques to prevent harm and minimize stress) downstream or away from the construction area. • All appropriate permits from relevant agencies will be obtained to facilitate any in-water work including fish and wildlife collection and relocation. • All equipment shall be operated, stored, and maintained in a manner that prevents the entry of any deleterious substances to any nearby waterbodies. All refueling should occur beyond 30m from a waterbody, and a spill tray should be used when completing maintenance and refueling. • An isolation/containment plan shall always be implemented to isolate any temporary in-water work zones to maintain clean flow downstream/around the work zone. • Design any water management system and dewatering operations for in-water construction activities to maintain flow (if applicable) to the reaches downstream of the construction area and to prevent erosion and/or release of sediment-laden or contaminated water any nearby waterbodies. • A spill management plan (including materials, instructions regarding their use, education of contract personnel, and emergency contact numbers) shall be always kept on site for implementation in event of an accidental spill during construction. • Mitigation measures for flood control, water quality, and erosion are noted above under Surface Water.	
Habitat of Endangered or	**Bat SAR**	Grading, Servicing and Development	There are four endangered bat species in Ontario: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tricoloured Bat. Based on bat exit surveys conducted by Beacon (2021) one SAR species was identified foraging	• Undertake surveys of the abandoned garage and select trees along BCT-1 to confirm potential for SAR Bat habitat.	Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
Threatened Species (SAR) *(see also **Significant Woodland**)*			over the Subject Lands: Northern Myotis. There is the potential for this species to be roosting in woodlands associated with the Greenbelt. Development is not proposed within this habitat; however, removal of the abandoned garage in ELC Unit 1 and select trees along BCT-1 could potentially affect habitat.	Should habitat be confirmed, the necessary authorizations under the *Endangered Species Act* will be obtained.	
	Tree SAR	Vegetation Clearing, Grading, Servicing and Development	No impact to Tree SAR. A species at risk habitat assessment revealed the presence of five Butternut and three Black Ash. As discussed in **Section 4.4** the three Butternut trees that are proposed to be impacted by development do not qualify for protection or mitigation under the *Endangered Species Act*. Black Ash habitat is within the Significant Woodland (ELC Unit 12), outside the Subject Lands, and these trees are approximately 70 m from the closest proposed works (restorative works along BCT-1); therefore, no impact to their habitat is anticipated.	• Submission of Butternut Health Assessment to MECP (see Kuntz Forestry Consulting, Appendix A). • No mitigation necessary nor required by the ESA for Black Ash. If design conditions change, mitigation and regulatory requirements will be reviewed.	Neutral

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10. Monitoring Recommendations

The EIA TOR require that an environmental monitoring framework be developed to evaluate the effectiveness of the various mitigation and environmental management strategies that have been identified in the EIA, FSR and other technical reports. A proposed monitoring framework has been prepared by the Study Team and is presented in **Table 10.** This table is intended to be read in conjunction with the inspection and maintenance requirements that are described in technical reports by Urbantech (2023) and GEO Morphix (2023).

Under this framework, environmental monitoring is proposed to be undertaken prior to development, during development, and following development.

Monitoring prior to development is intended to establish baseline conditions. Much of this baseline monitoring has already been completed to characterize the existing biophysical conditions and is documented in the EIA and other technical studies.

During development/construction monitoring is proposed to verify that the various environmental management systems and mitigation measures have been implemented and are operating as recommended.

Post-Development monitoring is proposed to evaluate the performance of the environmental management systems and confirm that management objectives recommended in the EIA and FSR are being realized.

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Table 10. Proposed Environmental Monitoring Framework

Project Component	Objective(s)/Rationale	Monitoring Parameter(s)	Monitoring Indicator(s)	Methods/Protocols/Analyses	Frequency & Duration*			Comments
					Pre-Development	During Construction	Post-Development	
Erosion & Sediment Control (ESC) Measures Also see recommendations in FSR (Urbantech 2023)	To confirm that all ESC measures have been implemented and are performing as per specification	Condition of ESC Measures	All ESC fencing, check dams, and sediment pond or equivalent are in good working order.	Visual inspection prior to and following all significant rainfall events (10 mm) or days of cumulative rainfall, after significant snowmelt events, and daily during extended rain or snowmelt periods.	ESC measures are generally installed as the first step of construction. As such, the monitoring will be further detailed as part of the "During Construction" monitoring.	Comprehensive inspection immediately following installation but prior to grading or site alteration. Weekly reporting during active construction. Routine inspections also required following all significant (i.e., 10 mm or more) rainfall events, following significant snowmelt events, and during extended rain or snowmelt periods.	During construction monitoring will apply until the site is stabilized, at which time the relevant ESC measures will be removed and the ESC monitoring will cease.	No monitoring stations as monitoring is to occur throughout the site along the development - and wherever ESC measures are installed.
Geomorphic monitoring of BCT-1	To ensure that: a) the restored channel is stable and functioning properly in the post-construction conditions b) no excess erosion within the receiving reaches is occurring downstream of the outlet in the post-construction conditions.	Channel morphology and sediment character	Cross section geometry, channel gradient, erosion pin exposure, and sediment grain sizes remaining consistent with baseline conditions.	Monitoring of the proposed restoration will allow issues to be identified and addressed promptly. The features should be monitored for a period of five years after construction. Monitoring should include general observations, identification of any erosion issues, monumented cross sections within the feature to measure potential changes to the feature's geometries, monumented photographs and a yearly survey of prescribed plant materials. General observations should also be completed after construction and after the first large flooding event to identify any areas of potential erosion. The proposed monitoring plan will be finalized during the detailed design phase.	Establish baseline conditions in receiving reaches.	Installation of monitoring cross sections and erosion pins in the restored channel.	5 years of annual monitoring surveys for both the restored channel and existing receiving reaches, following build-out. Additional site visits following large flood events.	Monitoring will ensure that the restored channel is stable and functioning properly as designed and will also ensure that the receiving reach is not negatively affected. Standard geomorphological methods will be utilized.
Naturalization Plantings in Buffer and Enhancement Areas	To assess the survival and condition of the naturalization plantings to ensure that: a) the plantings are installed and established as per the approved landscape plans; and b) over time, the areas become self-sustaining naturalized communities.	Naturalization Plantings	Plantings healthy, well-established and in general conformance with the landscaping plans.	The condition of these plantings will be assessed using visual assessments and comparisons with contractor drawings. These observations will be supplemented with plot-based data collected from select areas of the buffer and Enhancement Areas	Not Applicable	Once at time of installation, and at 2 years following installation.	Once at 5 years following build-out.	Note the standard two-year warranty period for plantings typically starts from the date of planting, and therefore the warranty for replacement plantings will typically extend beyond the initial two years.
Bio-filtration Swale and Naturalized Channel Plantings – See	Same as above	Bio-filtration Swale and	Same as above	Same as above	Not Applicable	Same as above	Same as above	Same as above

Project Component	Objective(s)/Rationale	Monitoring Parameter(s)	Monitoring Indicator(s)	Methods/Protocols/Analyses	Frequency & Duration*			Comments
					Pre-Development	During Construction	Post-Development	
Urbantech (2023) and GEO Morphix (2023) reports for further details		Naturalized Channel						
Human-Related Activities in the Buffer and Enhancement Areas	To document and assess human-related activities within the buffer and Enhancement Areas for the purposes of evaluating effectiveness of impact mitigation measures.	Human-Related Activities	Location, type and extent of human related activities	Select areas of the RNHS, including the buffer and Enhancement Areas will be evaluated by undertaking field inspections. The locations of any observations of human related activities will be photographed and recorded based on activity type and extent. These observations will be used to map and track such activities over time.	Once prior to development.	None	Once at 5 years following build-out	No monitoring is proposed within Key Features, except the restorative works on BCT-1.

11. Policy Conformity

A summary of federal, provincial and municipal environmental protection and planning policies and regulations applicable to the Subject Lands was provided in **Section 2**. A summary evaluation of how the redevelopment proposal complies with the applicable environmental policies and legislation is summarized below in **Table 11.**

Table 11. Policy Conformity Analysis

Applicable Policy / Legislation	Relevant EIA Findings and Recommendations	Policy Compliance
Federal *Fisheries Act (1985)*	As explained in **Section 5.7**, the two artificial ponds are exempt from the prohibitions identified as protection provisions of the *Fisheries Act*. The fish habitat within the BCT-1 feature is divided by an impediment to fish movement (located at the downstream end of the BCT-1a reach break). For this reason, the BCT-1a reach can be defined as indirect fish habitat due to its flow duration and, more importantly, its lack of connection to a natural fish bearing waterbody. Reaches BCT-1b and BCT-1c have been identified as direct fish habitat due to their intermittent flow and unimpeded connection to Bronte Creek, especially during periods of flooding. Therefore, the proposed restorative works identified within the BCT-1a reach should undergo DFO project review.	Yes (subject to DFO project review)
***Endangered Species Act* (2007)**	Based on the background review and ecological surveys, the proposed redevelopment will not impact on the habitats of any threatened or endangered species. Surveys for endangered bats that may potentially be associated with the garage structure or woodland trees that will be affected by restorative works along BCT-1, will be undertaken and if potential roosts of listed species are noted, the necessary authorizations will be obtained from MECP.	Yes.
Greenbelt Plan (2017)	A small area of active erosion in BCT-1a reach within the Greenbelt Plan (approximately 100 m^2) is proposed to be restored using natural channel design principles. The natural channel design will reinforce the existing alignment of BCT-1a with alternating cascades, and vegetated rock buttresses. This work will be completed with small machinery and/or by hand and will not negatively impact Key Natural Heritage Features. This work complies with Greenbelt Plan policy as an erosion control project. Greenbelt Policy 3.2.5.1(b) provides the following exemption to site alteration within key natural heritage features: *Conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all alternatives have been considered* Through this EIA and the accompanying FSR, it has been demonstrated that this restoration work is beneficial to the NHS. As noted in **Section 8.3.1**, this reinforcement of BCT-1 is the preferred of two reasonable alternatives that were evaluated by the Study Team. A "do nothing" alternative would result in continued erosion along the slopes of BCT-1, additional tree fall, and further downstream sedimentation, and would not be in the public interest.	Yes.

Applicable Policy / Legislation	Relevant EIA Findings and Recommendations	Policy Compliance
Provincial Policy Statement (2020)		
2.1.5 (a) Significant Wetlands	There are no significant wetlands associated with the Subject Lands. Negative impacts to the Significant Wetland associated with Bronte Creek, at the edge of the Study Area, are not anticipated.	Yes.
2.1.5 (b) Significant Woodlands	The Subject Lands support Significant Woodlands, including the forested features to the west, north and south. Restoration of BCT-1 is proposed within the significant woodlands on the Subject Lands. The proposed restoration design intends to minimize impacts the RNHS while addressing existing erosion within the BCT-1a reach to ensure that no further negative impacts to the Significant Woodland occur and that the function of that feature is maintained.	Yes.
2.1.5 (c) Significant Valleylands	The Bronte Creek valley is considered a Significant Valleyland. The hazards associated with this valley (i.e., stable top of slope) have been determined and serve to delineate the extent of the Significant Valleyland. A portion of the proposed BCT-1 restorative works overlap with the Significant Valleyland, and such work will help to maintain the form and function of the Key Feature in the long term. No negative impacts to this Key Feature are expected.	Yes.
2.1.5 (d) Significant Wildlife Habitat	Portions of the Subject Lands that have the capacity to support candidate SWH are associated with the forested habitat within the Bronte Creek valleylands and tableland woodland. No direct impacts to SWH are anticipated save for the restorative works in BCT-1. No negative impacts to this Key Feature are expected.	Yes.
2.1.5 (e) Significant Areas of Natural and Scientific Interest	The significant woodlands on the Subject Lands overlap with portions of the Bronte Creek Provincial Park Nature Reserve Zone Life Science ANSI and will not be negatively impacted by the redevelopment.	Yes.
2.1.6 Fish Habitat	The two artificial waterbodies are exempt from the prohibitions identified as protection provisions of the *Fisheries Act*. The PPS policies only pertain to waterbodies where the prohibitions of the *Fisheries Act* (1985) apply. The fish habitat within the BCT-1 feature is divided by an impediment to fish movement (located at the downstream end of the BCT-1a reach break). For this reason, the BCT-1a reach can be defined as indirect fish habitat due to its flow duration and, more importantly, its lack of connection to a natural fish bearing waterbody. Reaches BCT-1b and BCT-1c have been identified as direct fish habitat due to their intermittent flow and unimpeded connection to Bronte Creek, especially during periods of flooding. Therefore, the proposed restorative works identified within the BCT-1a reach should undergo DFO project review.	Yes (subject to DFO review).
2.1.7 Habitat for Threatened and Endangered Species	There are no species regulated by the ESA within the portion of the Subject Lands proposed for redevelopment. The Significant Woodland and structures contained therein, could potentially support endangered bats as discussed in **Section 5.1**. Prior to tree removals in the woodland to facilitate removal of the garage and BCT-1 restoration, bat habitat assessments should be completed to confirm habitat for listed bats. If confirmed, MECP will be contacted and the necessary permits under the ESA shall be obtained, such that there will be no negative impact to the Key Feature.	Yes.
2.2 – Water	The water resource system associated with the Subject Lands and Study Area has been identified and consists of the Bronte Creek, BCT-1 and associated natural heritage features and functions. Water quality will be improved through the removal of the artificial ponds (i.e., thermal impacts) and stormwater management is proposed to minimize stormwater volumes and contaminant loads. Existing erosion along BCT-1 will be mitigated, resulting in improved water quality downstream. No negative impacts to	Yes.

Applicable Policy / Legislation	Relevant EIA Findings and Recommendations	Policy Compliance
	sensitive surface or ground water features are anticipated. The removal of the existing large pond is anticipated to allow groundwater to return to its natural flow path, that would have existed prior to the creation of the artificial pond.	
3.1 – Natural Hazards	The redevelopment of the Subject Lands will be limited to areas outside of natural hazards including the Regional Storm floodplain and stable top of slope. Existing structures within the erosion hazard will be removed and these areas will be naturalized with native plants. Negative impacts to natural hazards are not expected.	Yes.
Halton Region Official Plan		
Halton Region Official Plan (2018 Consolidation)	In accordance with ROP policy an EIA has been prepared in support of this redevelopment proposal. The EIA has refined the boundary of the RNHS in accordance with ROP policy 116.1 in the form of a Preliminary RNHS. The proposed development has been located outside of this Preliminary RNHS The EIA has also demonstrated that the proposed redevelopment will not negatively impact on Key Features of the RNHS in accordance with ROP policies 118(2)(b) and 118(3). As noted in **Section 8.3**, the proposed redevelopment includes a biofiltration swale LID adjacent to the Preliminary RNHS. This 20 m wide biofiltration swale LID is proposed to be located outside the 10 m Buffer to the Significant Woodland. No negative impacts to Key Features are anticipated. Ecological benefits of this LID feature include improved surface water quality, storage, and habitat by way of native vegetation, which will result in increased ecological resilience/function. Such benefits are supportive functions and are recognized as Enhancement Adjacent to the Key Features. As such, the area of the 20 m wide biofiltration swale LID and associated native vegetation communities and natural channel design are proposed to be included in the Final RNHS.	Yes.
Town of Oakville Official Plan		
Town of Oakville Official Plan (2021 Consolidation) and Zoning By-Law 2014-014	The Town of Oakville OP identifies a portion of the Subject Lands as a Natural Area. This same area is zoned Natural Area in the Town's Zoning By-Law 2014-014. Permitted uses in the Natural Area designation, as outlined in Policy 16.1.1 of the OP include fish, wildlife and conservation management, essential public works including watershed management and flood and erosion control facilities and passive recreation features such as trails, walkways and bicycle paths. Permitted uses within the Natural Area Zone, as outlined in Section 13.2 of the Zoning By-Law include: conservation uses, public and private parks and stormwater management facilities. Within the Natural Area designation and zone, the following uses are proposed: (1) LID for stormwater management purposes (which is a permitted use in the Natural Area Zone); (2) naturalized channel that replaces an existing man-made pond and returns the area to a more natural landscape (which would be considered conservation management and watershed management, which are permitted uses in the Natural Area designation and a conservation use, which is a permitted use in the Natural Area Zone); (3) restoration works within BCT-1 to mitigate existing erosion (which would be considered conservation management and watershed management which are permitted	Yes.

Applicable Policy / Legislation	Relevant EIA Findings and Recommendations	Policy Compliance
	uses in the Natural Area designation and would be considered a conservation use, which is a permitted use in the Natural Area Zone).	
CH Regulation and Policies		
Ontario Regulation 162/06	With the exception of the restorative works proposed for BCT-1 and the removal of the existing house, overlook/platform, outbuildings and garage within the 15 m regulatory allowance to the LTSTOS, development on the Subject Lands will occur entirely outside of CH's regulated area. Permits will need to be obtained from CH prior to these works taking place within the regulated areas. The proposed work within CH's regulated area is all considered to be beneficial since the structure removals will reduce the overall risk to property within the erosion hazard and the erosion protection measures proposed for BCT-1 will mitigate an existing erosion issue and stabilize the feature(s).	Yes (subject to CH approval).

12. Conclusion

This revised Scoped EIA has been prepared in support of two separate applications to redevelop the properties located at 1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Oakville, Ontario, herein referred to as Subject Lands. The report has been prepared in accordance with the EIA TOR established through consultation with the agencies and has been revised to address comments received on the previous EIA submitted in February 2022 as well as changes to the redevelopment plans.

The information contained in this report is based on a comprehensive review of available background studies, results of site-specific field investigations and agency confirmation of feature limits, analyses and evaluations to confirm all components of the RNHS, and refinements to their boundaries. The report integrates the findings of companion technical studies prepared by members of the multi-disciplinary Study Team and is intended to be read in conjunction with the FSR and other technical studies.

In summary, this revised Scoped EIA has:

- Provided a summary of applicable federal, provincial, regional and local level environmental regulations and policies that govern land use planning and development on the Subject Lands;
- Updated the existing knowledge base of biophysical resources and ecological functions by consolidating available background information and supplementing it with more detailed information and analyses from site-specific investigations and analyses;
- Identified and confirmed the significance and sensitivities of natural heritage resources on the Subject Lands and broader Study Area by applying criteria from applicable environmental policies and regulations;
- Confirmed the limits of Key Features of the RNHS with the agencies;
- Established the limits of a Preliminary RNHS by applying ecologically appropriate buffers and natural hazard setbacks, and identified natural heritage and natural hazard constraints to development to inform the design;
- Identified opportunities for improvement/enhancement of the Key Features of the RNHS;

- Described components of the proposed redevelopment (grading, servicing, stormwater, enhancements, etc.);
- Established the limits of the Final RNHS by identifying Enhancements to Key Features;
- Assessed the potential impacts of the proposed redevelopment on Key Features of the RNHS;
- Recommended measures for avoiding and/or mitigating potential impacts to Key Features of the RNHS;
- Provided an outline for an Environmental Monitoring Framework to verify that the various environmental management systems and mitigation measures have been implemented and are operating as recommended; and
- Evaluated how the proposed development conforms to applicable environmental legislation, policies and regulations.

The proposed redevelopment plans were designed to protect, maintain, improve, and restore the RNHS Key Features and their ecological functions. The design was prepared in collaboration with the multidisciplinary Study Team to ensure that the plans and associated environmental management systems satisfy applicable environmental protection policies and regulations.

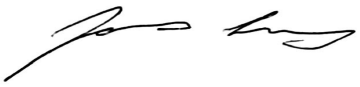
The proposed redevelopment also incorporates restorative works along BCT-1 to mitigate existing impacts related to the erosion along BCT-1. These works will improve the ecological functions and resilience of the Key Features and for this reason portions of the Subject Lands that will be subject to restoration are included in the Final RNHS as Enhancement to the Key Features.

The proposed biofiltration swale LID that is part of the SWM strategy provides quantity, quality and erosion control that will effectively improve the ecological functions of the adjacent Key Features and for these reasons is also included in the Final RNHS as an Enhancement to the Key Features. The Final RNHS encompasses all components of the Regional NHS as well as the Town's NHS. The Final RNHS forms the limits of development. All lands within the Final RNHS will be conveyed to the Town of Oakville.

In conclusion, it is the opinion of Beacon that the proposed redevelopment:

- Will not have a negative impact on the significant natural heritage features and functions associated with the Subject Lands or Study Area provided that the recommended mitigation measures specified in this report (and in the companion technical studies) are implemented; and
- Is consistent with the environmental protection legislation, policies and regulations at the provincial, regional and local levels.

Report prepared by:
Beacon Environmental



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ISA Certified Arborist (ON-1608A)

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Appendix A

Revised Environmental Impact Assessment Terms of Reference

October 25, 2021 BEL 220262

Charles McConnell, MCIP, RPP
Manager, Current Planning – West District
Town of Oakville
1225 Trafalgar Road
Oakville, ON L6H 0H3

via email: charles.mcconnell@oakville.ca

Re: Revised Terms of Reference for Scoped Environmental Impact Assessment (EIA), 1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Town of Oakville

Dear Charles:

Beacon Environmental Limited (Beacon) was retained by Bronte River Limited Partnership and Eaglewood Communities Inc. to prepare a Scoped Environmental Impact Assessment (EIA) in support of a proposal to redevelop properties located at 1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Oakville, Ontario, herein referred to as Subject Property (**Figure 1**). The proposed redevelopment will consist of a mix of residential townhouses and detached homes.

The Subject Property is 7.47 hectares in area and is located west of Bronte Road, south of Upper Middle Road, north of the Queen Elizabeth Way and east of the Bronte Creek valley. The Subject Property supports several existing residential dwellings, outbuildings, landscaped areas (lawns, ornamental plantings and dug ponds). The Subject Property is flanked by environmentally designated lands including the Greenbelt and Bronte Creek Provincial Park which contain valleylands and woodlands. The natural heritage features and associated buffers are designated as Natural Heritage System by the Region of Halton and zoned Natural Area by the Town of Oakville. Additionally, 1350 & 1354 Bronte Road are currently designated and zoned Parkway Belt.

As the Subject Property overlaps with parts of the adjacent Regional Natural Heritage System (RNHS) and lands identified as Natural Area by the Town of Oakville, an EIA is required to assess the potential impacts of the redevelopment proposal on natural heritage features and functions. Additionally, due to proximity to the Bronte Creek valleylands, portions of the Subject Property fall within the regulation limits of Conservation Halton (CH) and are subject to CH development policies and permitting.

Because the Subject Property supports existing development and the proposed redevelopment will be confined to the limits of the existing residential properties and not encroach into any key natural heritage features, it is proposed that the EIA be scoped. Additionally, the Subject Property was previously studied in 2012-2015 as part of the Merton Tertiary Planning process to establish the current land use designations and zoning. For these reasons, it is proposed that the EIA be scoped as per the Region of Halton Environmental Impact Assessment Guidelines (2020).

Term of Reference for this Scoped EIA (dated July 9, 2021) were previously circulated to the Town, Region and CH. Comments were received from CH on October 12, 2021. Beacon has reviewed those

comments and provided our responses in a letter dated October 25, 2021. The Town of Oakville also supplied comments in their letter of October 15, 2021, however these comments pertain to servicing and stormwater. We have forwarded these on to Urbantech Consulting, the surface water engineer for this project, and understand that a representative will be following up directly with the reviewer to address the comments.

For this Scoped EIA, we have proposed the following Work Plan which has been revised to address some of CH's comments as provided in their letter of October 12, 2021. To date, comments have not been received from the Region on the EIA ToR:

Work Plan

Background Review and Agency Consultation

1. Background Review

All background information related to natural heritage resources in the vicinity of the Subject Property will be compiled and reviewed. This will include available aerial photography, available data from the Ministry of Natural Resources and Forestry (MNRF) and Conservation Halton (CH), as well as ecological work previously completed in 2013-2015 by Dance Environmental Inc. Additionally, the EIA will integrate the findings of other technical disciplines related to planning, engineering, hydrogeology, hydrology, servicing, etc. where applicable.

Because the EIA is also required to demonstrate compliance with various federal and provincial environmental legislation and regulations, as well as municipal policies and CH regulations, the EIA will include a framework outlining the which legislation, policies and regulation apply to the proposes redevelopment. Consideration will be given to the *Fisheries Act*, *Migratory Birds Convention Act*, *Species at Risk Act*, *Endangered Species Act*, Provincial Policy Statement, Greenbelt Plan, Region of Halton Official Plan, Town of Oakville Official Plan and CH Regulations under the *Conservation Authorities Act*.

Should any endangered or threatened species or habitats be confirmed through the EIA work that could be affected by the proposed development, MECP will be contacted regarding permitting and regulatory requirements.

2. Feature Staking with Agencies

The limits of woodlands and valleylands on the Subject Property were previously staked by the agencies on July 31, 2013. It is proposed that the former stakes limits be reviewed in the field with the agencies and adjusted where necessary. The proponent will arrange a site meeting and have an OLS present to survey any modified lines.

UPDATE: The Top of Slope was staked and surveyed with CH and Town on August 17, 2021 and the woodland dripline was staked with Regional staff on September 7, 2021.

Ecological Surveys and Assessments

3. Amphibian Call Surveys (three visits, April – June 2021)

The Subject Property contains a couple dug pond features that potentially support amphibian breeding functions. Depending on the number of amphibian species present and their abundance as determined during the breeding season, these could qualify as Significant Wildlife Habitat. To determine whether the ponds provide significant breeding functions for amphibians, it is proposed that calling surveys be competed in accordance with provincial Marsh Monitoring protocols. Both ponds are known to support predatory fishes, so formal egg mass surveys will not be completed.

4. Breeding Bird Surveys (two visits, May – June 2021)

The Subject Property and adjacent lands support habitat that could be utilized for breeding by certain significant bird species. To identify which species are resident on the Subject Property and adjacent lands, it is proposed that two surveys be completed during the breeding season in accordance with the standard protocols for Forest and Marsh Bird Monitoring. Should these surveys reveal the presence of threatened species (Bobolink and Eastern Meadowlark), a third survey will be completed in July. Additionally, buildings will be inspected to determine whether other listed species (i.e. Barn Swallow or Chimney Swift) are present. All species observed and breeding locations will be documented.

5. Ecological Land Classification and Flora (two visits, June and August 2021)

Ecological communities on the property, including aquatic communities, will be mapped and described according to the Ecological Land Classification (ELC) system which is the standard methodology for classifying ecosystems in southern Ontario. A checklist of all plant species observed on the Subject Property will also be compiled. The status of each species will be noted, including provincial and regional rarity, coefficients of conservatism, and invasiveness. Locations of any Regionally rare or Provincially Threatened or Endangered species will be noted.

6. Turtle Basking/Nesting Surveys (three visits, May, June and September 2021)

The two dug pond features have the potential to support overwintering habitat for turtles. Depending on the number of species present and their abundance as determined during the breeding season, these features could qualify as Significant Wildlife Habitat. To confirm the presence/absence of turtles, it is proposed that surveys will be conducted in the spring, summer and fall. Surveys will focus on the pond located at the west end of the property. During each survey, the edge of the pond / wetlands will be scanned using binoculars to detect basking turtles during the appropriate weather conditions and time of year. Species and number of individuals observed will be recorded. Surveys for snakes will not be completed. Instead, we intend to rely on survey data from previous investigations in 2013. The portions of the subject lands proposed to be developed is landscaped and does not support habitat elements consistent with significant hibernacula, so no specialized surveys for hibernacula will be completed.

7. Aquatic Habitat Assessment (June 2021)

The two pond features have potential to support fish habitat. One site visit will be conducted to assess the fish habitat within the ponds as well as determine if the ponds have a connection to Bronte Creek. Visual observation of fish within the ponds will be recorded. In addition, supplemental background data available on fish species that were used to stock the ponds will be referenced. The ponds are proposed to be removed in the future to facilitate development. For these reasons, further sampling of the ponds through electrofishing is unwarranted.

The aquatic assessment will make notes on the hydrologic connectivity of the ponds to Bronte Creek.

No water sampling of the ponds will be completed at this time. If such sampling is required in support of pond dewatering in the future, it will be completed in accordance with necessary standards at detailed design.

8. Insect (Dragonflies, Damselflies and Butterflies) Survey (June-August 2021)

Surveys for dragonflies, damselflies, and butterflies will be conducted over four, one-hour surveys in the summer of 2021 (for a total of four hours). The entire site will be walked such that all odonates and butterflies on the Subject Property, and on immediately adjacent lands can be observed. All odonates and butterflies seen will be recorded in the location observed on an aerial photograph of the site. Species that require closer examination for identification will be photographed or caught and examined using a hand lens.

9. Bat Exit Surveys (June 2021)

The proposed redevelopment does not encroach upon any woodland habitats that could support roosting bats, however there are structures on the property and some of these could potentially support endangered bats. It is proposed that exit surveys of these structures be completed during the breeding and rearing season (June and July) to confirm the presence/absence of bats and species present. Near sundown, two staff members, each located on opposite corners of a building, will use of specialized electronic equipment to record calls as bats exit the building. Surveys for each building will be completed twice during the survey period. This survey methodology is consistent with guidance provided in *Use of Buildings by Species at Risk Bats Survey Methodology* (MNRF 2018).

EIA Report

10. EIA Report

Beacon will prepare a Draft EIA report summarizing the findings of the background review and field investigations, an evaluation of significant features, constraints and opportunities, a description of the proposed draft plan and environmental management and mitigation measures, assessment of

conformity with applicable environmental legislation, policies and regulations as well as a statement of net impact.

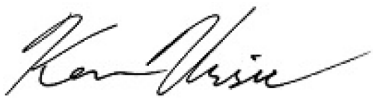
The EIA report will be components and associated tables and mapping as appropriate:

a. Introduction;
b. Background Review;
c. Regulatory Framework;
d. Characterization of the Natural Environment (Methods and Findings);
e. Evaluation of Significant Features and Functions;
f. Analysis of Constraints & Opportunities;
g. Description of the Proposal;
h. Impact Assessment and Recommended Mitigation;
i. Environmental Monitoring Framework
j. Summary of Conformity with Regulatory Framework; and
k. Conclusions.

The EIA report will also integrate key findings from the Functional Servicing Report being prepared by others.

Should you have any questions, please do not hesitate to contact me at (519) 835-6455. We look forward to your comments.

Prepared by:
Beacon Environmental



Ken Ursic, B.Sc., M.Sc.
Principal, Senior Ecologist

cc.
Rob Thun, Sr. Planner, Town of Oakville
Terry Korsiak – Korsiak Planning
Scott Bland – Bronte River Limited Partnership
Amber Lindsay – Eaglewood Communities Inc.

Attachments

Attachment A. Figure 1. Site Location

BEACON ENVIRONMENTAL

Attachment A

Site Location	Figure 1
Environmental Impact Assessment Enns Property, Oakville, Ontario	
BEACON ENVIRONMENTAL	Project: 220262 Last Revised: January 2021
Client: Argo Development Corporation	Prepared by: DU Checked by: AC DRAFT
N	1:5,000 — Inset Map:1:50,000

Contains information licensed under the Open Government License–Ontario Orthoimagery Baselayer: FBS Halton 2019

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Appendix B

Flora List

Appendix B

Flora List

Scientific Name	Common Name	COSEWIC	SARO	SRank[a]	Halton Status[b]	Level of Invasiveness[c]	Coefficient of Conservatism[d]	Coefficient of Wetness[e]	Observed by de Gruchy Environmental 2012	Observed by Dance Environmental 2013*	Observed by Beacon Environmental 2021–2023
Acalypha rhomboidea	Common Three-seeded Mercury	-	-	S5	-	-	0	3	X		
Acer negundo	Manitoba Maple	-	-	S5	-	1	0	0	X		X
Acer nigrum	Black Maple	-	-	S4?	-	-	7	3	X		
Acer platanoides	Norway Maple	-	-	SE5	-	2	0	5	X		X
Acer rubrum	Red Maple	-	-	S5	-	-	4	0	X		
Acer saccharinum	Silver Maple	-	-	S5	-	-	5	-3	X		X
Acer saccharum	Sugar Maple	-	-	S5	-	-	4	3	X		X
Actaea pachypoda	White Baneberry	-	-	S5	-	-	6	5	X		X
Actaea rubra	Red Baneberry	-	-	S5	-	-	6	3	X		X
Aegopodium podagraria	Goutweed	-	-	SE5	-	-	0	0	X		
Ageratina altissima	White Snakeroot	-	-	S5	-	-	5	3	X		X
Agrimonia gryposepala	Tall Agrimony	-	-	S5	-	-	2	3			X
Alisma subcordatum	Southern Water-plantain	-	-	S4?	-	-	1	-5	X		
Alliaria petiolata	Garlic Mustard	-	-	SE5	-	-	0	0	X		X
Allium tricoccum	Wild Leek	-	-	S4	-	-	7	3	X		X
Anemonastrum canadense	Canada Anemone	-	-	S5	-	-	3	-3			X
Anemone quinquefolia	Wood Anemone	-	-	S5	-	-	7	0	X		X
Apocynum androsaemifolium	Spreading Dogbane	-	-	S5	-	-	3	5	X		X
Aquilegia canadensis	Red Columbine	-	-	S5	-	-	5	3			X
Aralia nudicaulis	Wild Sarsaparilla	-	-	S5	-	-	4	3	X		X
Arctium lappa	Great Burdock	-	-	SE5	-	-	0	3	X		X
Arctium minus	Common Burdock	-	-	SE5	-	-	0	3	X		
Arisaema triphyllum	Jack-in-the-pulpit	-	-	S5	-	-	5	-3			X
Asclepias syriaca	Common Milkweed	-	-	S5	-	-	0	5	X		
Athyrium filix-femina var. angustum	Northeastern Lady Fern	-	-	S5	-	-	4	0	X		
Barbarea vulgaris	Bitter Wintercress	-	-	SE5	-	-	0	0	X		
Berberis thunbergii	Japanese Barberry	-	-	SE5	-	3	0	3	X		
Betula alleghaniensis	Yellow Birch	-	-	S5	-	-	6	0			X
Betula papyrifera	Paper Birch	-	-	S5	-	-	2	3	X		X
Bidens tripartita	Three-parted Beggarticks	-	-	S5?	-	-	5	-3	X		
Bidens vulgata	Tall Beggarticks	-	-	S5	HU	-	5	0	X		
Borodinia canadensis	Canada Rockcress	-	-	S4?	HU	-	7	5			X
Bromus inermis	Smooth Brome	-	-	SE5	-	4	0	5	X		X
Cardamine sp. (presumed *C. pensylvanica*)	(Pennsylvania) Bittercress	-	-	S5	HU	-	6	-3			X
Carex arctata	Drooping Woodland Sedge	-	-	S5	-	-	5	5	X		
Carex blanda	Woodland Sedge	-	-	S5	-	-	3	0	X		
Carex cephalophora	Oval-leaved Sedge	-	-	S5	-	-	5	3	X		
Carex hystericina	Porcupine Sedge	-	-	S5	-	-	5	-5	X		X
Carex laxiflora	Loose-flowered Sedge	-	-	S5	-	-	5	0	X		
Carex pensylvanica	Pennsylvania Sedge	-	-	S5	-	-	5	5	X		X

Scientific Name	Common Name	COSEWIC	SARO	SRank[a]	Halton Status[b]	Level of Invasiveness[c]	Coefficient of Conservatism[d]	Coefficient of Wetness[e]	Observed by de Gruchy Environmental 2012	Observed by Dance Environmental 2013*	Observed by Beacon Environmental 2021–2023
Carex platyphylla	Broad-leaved Sedge	-	-	S4S5	-	-	7	5	X		X
Carex radiata	Eastern Star Sedge	-	-	S5	-	-	4	0	X		
Carex rosea	Rosy Sedge	-	-	S5	-	-	2	5			X
Carex scabrata	Eastern Rough Sedge	-	-	S5	-	-	8	-5			X
Carex vulpinoidea	Fox Sedge	-	-	S5	-	-	3	-5	X		X
Carpinus caroliniana	Blue-beech	-	-	S5	-	-	6	0			X
Carya cordiformis	Bitternut Hickory	-	-	S5	-	-	6	0	X		X
Carya ovata	Shagbark Hickory	-	-	S5	-	-	6	3	X		X
Catalpa speciosa	Northern Catalpa	-	-	SE1	-	-	0	3	X		
Caulophyllum giganteum	Giant Blue Cohosh	-	-	S5	Requires further review	-	5	5		X	X
Ceanothus americanus	New Jersey Tea	-	-	S4	-	-	7	5			X
Celastrus scandens	Climbing Bittersweet	-	-	S5	-	-	3	3			X
Celtis occidentalis	Common Hackberry	-	-	S4	HR	-	8	0	X		
Cerastium fontanum	Common Mouse-ear Chickweed	-	-	SE5	-	-	0	3	X		
Chelidonium majus	Greater Celandine	-	-	SE5	-	-	0	5	X		
Circaea canadensis	Broad-leaved Enchanter's Nightshade	-	-	S5	-	-	2	3	X		X
Cirsium arvense	Canada Thistle	-	-	SE5	-	-	0	3	X		X
Cirsium vulgare	Bull Thistle	-	-	SE5	-	-	0	3		X	
Clintonia borealis	Yellow Clintonia	-	-	S5	-	-	7	0			X
Collinsonia canadensis	Canada Horsebalm	-	-	S4	HU	-	8	0	X		X
Convallaria majalis	European Lily-of-the-valley	-	-	SE5	-	3	0	5			X
Cornus alternifolia	Alternate-leaved Dogwood	-	-	S5	-	-	6	3	X		X
Cornus racemosa	Grey Dogwood	-	-	S5	-	-	2	0	X		
Cornus rugosa	Round-leaved Dogwood	-	-	S5	-	-	6	5			X
Cornus sericea	Red-osier Dogwood	-	-	S5	-	-	2	-3	X		X
Cynoglossum officinale	Common Hound's-tongue	-	-	SE5	-	-	0	5	X		
Dactylis glomerata	Orchard Grass	-	-	SE5	-	3	0	3	X		X
Danthonia spicata	Poverty Oatgrass	-	-	S5	-	-	5	5	X		
Daucus carota	Wild Carrot	-	-	SE5	-	-	0	5	X		X
Diervilla lonicera	Northern Bush-honeysuckle	-	-	S5	-	-	5	5	X		X
Dipsacus fullonum	Common Teasel	-	-	SE5	-	-	0	3	X		
Dryopteris carthusiana	Spinulose Wood Fern	-	-	S5	-	-	5	-3	X		X
Elymus hystrix	Bottlebrush Grass	-	-	S5	-	-	5	5	X		
Epifagus virginiana	Beechdrops	-	-	S5	-	-	6	5	X		
Elymus virginicus	Virginia Wild Rye	-	-	S5	-	-	5	-3			X
Epipactis helleborine	Broad-leaved Helleborine	-	-	SE5	-	-	0	3	X		
Equisetum arvense	Field Horsetail	-	-	S5	-	-	0	0	X		X
Erigeron annuus	Annual Fleabane	-	-	S5	-	-	0	3	X		X
Erigeron philadelphicus	Philadelphia Fleabane	-	-	S5	-	-	1	-3	X		
Erigeron pulchellus	Robin's-plantain Fleabane	-	-	S5	HU	-	7	3			X
Euonymus alatus	Winged Euonymus	-	-	SE2	-	3	0	5	X		
Euonymus obovatus	Running Strawberry-bush	-	-	S4	-	-	6	3	X		
Eurybia macrophylla	Large-leaved Aster	-	-	S5	-	-	5	5	X		X
Eutrochium maculatum	Spotted Joe Pye Weed	-	-	S5	-	-	3	-5			X
Eutrochium maculatum var. maculatum	Spotted Joe Pye Weed	-	-	S5	-	-	3	-5	X		
Fagus grandifolia	American Beech	-	-	S4	-	-	6	3	X		X

Scientific Name	Common Name	COSEWIC	SARO	SRank[a]	Halton Status[b]	Level of Invasiveness[c]	Coefficient of Conservatism[d]	Coefficient of Wetness[e]	Observed by de Gruchy Environmental 2012	Observed by Dance Environmental 2013*	Observed by Beacon Environmental 2021–2023
Fragaria vesca ssp. americana	American Woodland Strawberry	-	-	S5	-	-	4	3	X		
Fraxinus americana	White Ash	-	-	S4	-	-	4	3	X		
Fraxinus nigra	Black Ash	END	END	S3	-	-	7	-3			X
Fraxinus pennsylvanica	Green Ash	-	-	S4	-	-	3	-3	X		X
Galium aparine	Common Bedstraw	-	-	S5	-	-	4	3			X
Galium boreale	Northern Bedstraw	-	-	S5	HU	-	7	0			X
Geranium maculatum	Spotted Geranium	-	-	S5	-	-	6	3	X		
Geranium robertianum	Herb-Robert	-	-	S5	-	-	2	3	X		X
Geum canadense	Canada Avens	-	-	S5	-	-	3	0	X		
Geum urbanum	Wood Avens	-	-	SE3	-	-	0	5	X		X
Gleditsia triacanthos	Honey Locust	-	-	S2?	-	-	8	0	X		
Glyceria striata	Fowl Mannagrass	-	-	S5	-	-	3	-5	X		X
Hamamelis virginiana	American Witch-hazel	-	-	S4S5	-	-	6	3	X		X
Hemerocallis fulva	Orange Daylily	-	-	SE5	-	4	0	5			X
Hepatica americana	Round-lobed Hepatica	-	-	S5	HU	-	6	5	X		
Hesperis matronalis	Dame's Rocket	-	-	SE5	-	1	0	3	X		
Impatiens capensis	Spotted Jewelweed	-	-	S5	-	-	4	-3	X		X
Impatiens pallida	Pale Jewelweed	-	-	S4	-	-	7	-3	X		
Juglans cinerea	Butternut	END	END	S2?	-	-	6	3	X		X
Juglans nigra	Black Walnut	-	-	S4?	-	-	5	3	X		X
Juglans regia	English Walnut	-	-	SE1	-	-	0	5	X		
Juncus dudleyi	Dudley's Rush	-	-	S5	-	-	1	-3	X		X
Juncus effusus	Soft Rush	-	-	S5	-	-	4	-5			X
Juncus effusus ssp. solutus	Soft Rush	-	-	S5?	-	-	4	-5	X		
Juniperus virginiana	Eastern Red Cedar	-	-	S5	-	-	4	3	X		
Lactuca serriola	Prickly Lettuce	-	-	SE5	-	-	0	3	X		
Lapsana communis	Common Nipplewort	-	-	SE5	-	5	0	3			X
Larix laricina	Tamarack	-	-	S5	-	-	7	-3	X		
Leersia virginica	White Cutgrass	-	-	S4	-	-	6	-3			X
Lemna minor	Small Duckweed	-	-	S5?	-	-	5	-5	X		X
Leonurus cardiaca ssp. cardiaca	Common Motherwort	-	-	SE5	-	-	0	5	X		X
Leucanthemum vulgare	Oxeye Daisy	-	-	SE5	-	4	0	5	X		
Ligustrum vulgare	European Privet	-	-	SE5	-	-	0	3	X		
Lolium perenne	Perennial Ryegrass	-	-	SE4	-	-	0	3	X		
Lonicera canadensis	Canada Fly Honeysuckle	-	-	S5	-	-	6	3			X
Lonicera dioica	Limber Honeysuckle	-	-	S5	-	-	5	3			X
Lonicera tatarica	Tatarian Honeysuckle	-	-	SE5	-	1	0	3	X		
Luzula acuminata	Hairy Woodrush	-	-	S5	HU	-	6	3	X		
Luzula multiflora	Many-flowered Woodrush	-	-	S5	HU	-	6	3			X
Luzula multiflora ssp. multiflora	Many-flowered Woodrush	-	-	S5	HU	-	6	3	X		
Lycopus europaeus	European Water-horehound	-	-	SE5	-	-	0	-5	X		
Lysimachia borealis	Northern Starflower	-	-	S5	-	-	6	0	X		
Lysimachia ciliata	Fringed Yellow Loosestrife	-	-	S5	-	-	4	-3	X		
Lythrum salicaria	Purple Loosestrife	-	-	SE5	-	1	0	-5	X		
Maianthemum canadense	Wild Lily-of-the-valley	-	-	S5	-	-	5	3	X		X
Maianthemum racemosum	Large False Solomon's Seal	-	-	S5	-	-	4	3	X		X
Maianthemum stellatum	Star-flowered False Solomon's Seal	-	-	S5	-	-	6	0			X
Malus baccata	Siberian Crabapple	-	-	SE1	-	-	0	5	X		
Malus pumila	Common Apple	-	-	SE4	-	-	0	5	X		X

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Matricaria discoidea	Pineappleweed	-	-	SE5	-	-	0	3	X		
Matteuccia struthiopteris	Ostrich Fern	-	-	S5	-	-	5	0			X
Matteuccia struthiopteris var. pensylvanica	Ostrich Fern	-	-	S5	-	-	5	0	X		
Mentha canadensis	Canada Mint	-	-	S5	-	-	3	-3	X		
Micranthes virginiensis	Early Saxifrage	-	-	S5	HU	-	7	3	X		
Morus alba	White Mulberry	-	-	SE5	-	1	0	0	X		
Myrica gale	Sweet Gale	-	-	S5	HR	-	6	-5	X		X
Myriophyllum spicatum	Eurasian Water-milfoil	-	-	SE5	-	1	0	-5	X		X
Nabalus altissimus	Tall Rattlesnakeroot	-	-	S5	-	-	5	3			X
Nasturtium microphyllum	Small-leaved Watercress	-	-	SE5	-	5	0	-5	X		
Nepeta cataria	Catnip	-	-	SE5	-	4	0	3		X	
Nuphar variegata	Variegated Pond-lily	-	-	S5	HU	-	7	-5	X		
Nymphaea odorata	Fragrant Water-lily	-	-	S5	HU	-	5	-5			X
Onoclea sensibilis	Sensitive Fern	-	-	S5	-	-	4	-3	X		
Ostrya virginiana	Eastern Hop-hornbeam	-	-	S5	-	-	4	3	X		X
Oxalis stricta	Upright Yellow Wood-sorrel	-	-	S5	-	-	0	3	X		X
Parthenocissus vitacea	Thicket Creeper	-	-	S5	-	-	4	3	X		
Patis racemosa	Black-seed Ricegrass	-	-	S4	-	-	7	5			X
Phalaris arundinacea	Reed Canarygrass	-	-	S5	-	5	0	-3	X		X
Phragmites australis	Common Reed	-	-	S4?	-	1	0	-3	X		
Phragmites australis ssp. australis	European Reed	-	-	SE5	-	-	0	-3			X
Phryma leptostachya	Lopseed	-	-	S4S5	-	-	6	3			X
Picea abies	Norway Spruce	-	-	SE3	-	-	0	5	X		X
Picea glauca	White Spruce	-	-	S5	HU - native sites only (not introduced)	-	6	3	X		X
Picea pungens	Blue Spruce	-	-	SE1	-	-	0	3	X		
Pilea pumila	Dwarf Clearweed	-	-	S5	-	-	5	-3	X		
Pilosella caespitosa	Meadow Hawkweed	-	-	SE5	-	-	0	5			X
Pinus nigra	Austrian Pine	-	-	SE3	-	-	0	5			X
Pinus strobus	Eastern White Pine	-	-	S5	-	-	4	3	X		X
Plantago major	Common Plantain	-	-	SE5	-	-	0	3	X		
Platanus occidentalis	Sycamore	-	-	S4	HR	-	8	-3	X		X
Poa alsodes	Grove Bluegrass	-	-	S4	HU	-	7	0			X
Poa compressa	Canada Bluegrass	-	-	SE5	-	-	0	3	X		
Poa pratensis	Kentucky Bluegrass	-	-	S5	-	2	0	3			X
Poa pratensis ssp. pratensis	Kentucky Bluegrass	-	-	SE5	-	2	0	3	X		
Podophyllum peltatum	May-apple	-	-	S5	-	-	5	3	X		X
Polygonatum pubescens	Hairy Solomon's Seal	-	-	S5	-	-	5	5	X		X
Polygonum aviculare	Prostrate Knotweed	-	-	S4?	-	-	0	3	X		
Pontederia cordata	Pickerelweed	-	-	S5	-	-	7	-5	X		X
Populus deltoides ssp. deltoides	Eastern Cottonwood	-	-	S5	-	-	4	0	X		X
Populus grandidentata	Large-toothed Aspen	-	-	S5	-	-	5	3	X		X
Populus x canadensis	Carolina poplar	-	-	SNA	-	4	0		X		
Potamogeton crispus	Curly-leaved Pondweed	-	-	SE5	-	-	0	-5	X		
Potentilla simplex	Old-field Cinquefoil	-	-	S5	HU	-	3	3			X
Prunella vulgaris ssp. lanceolata	Lance-leaved Self-heal	-	-	S5	-	-	0	0			X

Scientific Name	Common Name	COSEWIC	SARO	SRank[a]	Halton Status[b]	Level of Invasiveness[c]	Coefficient of Conservatism[d]	Coefficient of Wetness[e]	Observed by de Gruchy Environmental 2012	Observed by Dance Environmental 2013*	Observed by Beacon Environmental 2021–2023
Prunus avium	Sweet Cherry	-	-	SE4	-	5	0	5	X		
Prunus serotina	Black Cherry	-	-	S5	-	-	3	3	X		X
Prunus virginiana	Chokecherry	-	-	S5	-	-	2	3	X		
Prunus virginiana var. virginiana	Chokecherry	-	-	S5	-	-	2	3			X
Pteridium aquilinum	Bracken Fern	-	-	S5	-	-	2	3	X		
Pyrus communis	Common Pear	-	-	SE4	-	-	0	5	X		
Quercus alba	White Oak	-	-	S5	-	-	6	3	X		X
Quercus macrocarpa	Bur Oak	-	-	S5	-	-	5	3	X		
Quercus rubra	Northern Red Oak	-	-	S5	-	-	6	3	X		X
Quercus velutina	Black Oak	-	-	S4	HU	-	8	5	X		
Ranunculus abortivus	Kidney-leaved Buttercup	-	-	S5	-	-	2	0	X		X
Ranunculus acris	Common Buttercup	-	-	SE5	-	-	0	0	X		X
Rhamnus cathartica	European Buckthorn	-	-	SE5	-	1	0	0	X		X
Rhus typhina	Staghorn Sumac	-	-	S5	-	-	1	3	X		X
Ribes cynosbati	Eastern Prickly Gooseberry	-	-	S5	-	-	4	3	X		
Ribes rubrum	European Red Currant	-	-	SE5	-	-	0	5	X		
Robinia pseudoacacia	Black Locust	-	-	SE5	-	2	0	3	X		X
Rosa multiflora	Multiflora Rose	-	-	SE5	-	1	0	3	X		X
Rosa rubiginosa	Sweetbriar Rose	-	-	SE4	-	-	0	3	X		
Rubus allegheniensis	Allegheny Blackberry	-	-	S5	-	-	2	3			X
Rubus canadensis	Canada Blackberry	-	-	S5	-	-	2	5	X		
Rubus idaeus ssp. strigosus	North American Red Raspberry	-	-	S5	-	-	2	3	X		X
Rubus occidentalis	Black Raspberry	-	-	S5	-	-	2	5	X		X
Rubus odoratus	Purple-flowering Raspberry	-	-	S5	-	-	3	5	X		X
Rudbeckia hirta	Black-eyed Susan	-	-	S5	-	-	0	3	X		X
Rumex crispus	Curled Dock	-	-	SE5	-	-	0	0	X		X
Salix bebbiana	Bebb's Willow	-	-	S5	-	-	4	-3	X		
Salix discolor	Pussy Willow	-	-	S5	-	-	3	-3	X		
Salix x fragilis	(Salix alba X Salix euxina)	-	-	SNA	-	-	0	0			X
Salix x sepulcralis	(Salix alba X Salix babylonica)	-	-	SNA	-	-	0	-3	X		
Sambucus racemosa	Red Elderberry	-	-	S5	-	5	5	3			X
Sassafras albidum	Sassafras	-	-	S4	HU	-	6	3	X		
Scirpus atrovirens	Dark-green Bulrush	-	-	S5	-	-	3	-5	X		X
Smilax herbacea	Herbaceous Carrionflower	-	-	S4?	-	-	5	0	X		X
Solanum dulcamara	Bittersweet Nightshade	-	-	SE5	-	3	0	0	X		
Solidago altissima var. altissima	Eastern Tall Goldenrod	-	-	S5	-	-	1	3	X		X
Solidago caesia	Blue-stemmed Goldenrod	-	-	S5	-	-	5	3	X		X
Solidago canadensis var. canadensis	Canada Goldenrod	-	-	S5	-	-	1	3	X		
Solidago flexicaulis	Zigzag Goldenrod	-	-	S5	-	-	6	3	X		X
Solidago patula	Spreading Goldenrod	-	-	S4	HU	-	8	-5			X
Sorbus aucuparia	European Mountain-ash	-	-	SE4	-	4	0	5	X		
Spiraea x vanhouttei	(Spiraea cantoniensis X Spiraea trilobata)	-	-	SNA	-	-	0	5	X		
Symphoricarpos albus	Thin-leaved Snowberry	-	-	S5	-	-	7	3	X		X
Symphyotrichum cordifolium	Heart-leaved Aster	-	-	S5	-	-	5	5	X		X
Symphyotrichum lanceolatum ssp. lanceolatum	Eastern Panicled Aster	-	-	S5	-	-	3	-3	X		X
Symphyotrichum lateriflorum var. lateriflorum	Calico Aster	-	-	S5	-	-	3	0	X		

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Symphyotrichum laeve	Smooth Aster	-	-	S5	-	-	7	3			X
Symphyotrichum novae-angliae	New England Aster	-	-	S5	-	-	2	-3	X		X
Syringa vulgaris	Common Lilac	-	-	SE5	-	2	0	5	X		
Taenidia integerrima	Yellow Pimpernel	-	-	S4	HU	-	9	5	X		X
Taraxacum officinale	Common Dandelion	-	-	SE5	-	-	0	3	X		X
Taxus canadensis	Canada Yew	-	-	S4	-	-	7	3	X		
Thalictrum dioicum	Early Meadow-rue	-	-	S5	-	-	6	3	X		X
Thuja occidentalis	Eastern White Cedar	-	-	S5	-	-	4	-3	X		X
Tilia americana	Basswood	-	-	S5	-	-	4	3	X		X
Toxicodendron radicans var. rydbergii	Western Poison Ivy	-	-	S5	-	-	2	0	X		X
Trifolium hybridum	Alsike Clover	-	-	SE5	-	-	0	3			X
Trillium erectum	Red Trillium	-	-	S5	-	-	6	3	X	X	
Trillium grandiflorum	White Trillium	-	-	S5	-	-	5	3	X		X
Tsuga canadensis	Eastern Hemlock	-	-	S5	-	-	7	3	X		X
Tussilago farfara	Coltsfoot	-	-	SE5	-	-	0	3	X		X
Typha angustifolia	Narrow-leaved Cattail	-	-	SE5	-	5	0	-5	X		X
Typha latifolia	Broad-leaved Cattail	-	-	S5	-	-	1	-5	X		X
Ulmus americana	White Elm	-	-	S5	-	-	3	-3	X		
Verbascum thapsus	Common Mullein	-	-	SE5	-	-	0	5			X
Verbena urticifolia	White Vervain	-	-	S5	-	-	4	0	X		
Veronica officinalis	Common Speedwell	-	-	SE5	-	-	0	5	X		
Viburnum acerifolium	Maple-leaved Viburnum	-	-	S5	-	-	6	5	X		X
Viburnum lentago	Nannyberry	-	-	S5	-	-	4	0	X		
Viburnum opulus	Cranberry Viburnum	-	-	S5	-	4	5	-3	X		
Viburnum opulus ssp. trilobum	Highbush Cranberry	-	-	S5	-	-	5	-3	X		
Vicia cracca	Tufted Vetch	-	-	SE5	-	-	0	5	X		X
Vinca minor	Lesser Periwinkle	-	-	SE5	-	2	0	5			X
Vincetoxicum rossicum	European Swallowwort	-	-	SE5	-	-	0	5	X		
Viola sororia	Woolly Blue Violet	-	-	S5	-	-	4	0			X
Vitis aestivalis	Summer Grape	-	-	S4	HU	-	7	3	X		X
Vitis riparia	Riverbank Grape	-	-	S5	-	-	0	0	X		X

a – S-Rank (from Natural Heritage Information Centre) for breeding status: S1 (Extremely Rare), S2 (Very Rare), S3 (Rare to Uncommon) (S4 (Common), S5 (Very Common) SNA (Not applicable…'because the species is not a suitable target for conservation activities'; includes non-native species)

b – Halton Region Status, NAI 2006

c – Invasiveness Legend taken from CH Landscaping Guidelines 2010

1. *Excludes all other species and dominates sites indefinitely*
2. *Highly invasive, dominates niches or does not spread rapidly*
3. *Moderately invasive, locally dominant*
4. *Competitive once established*
5. *Potentially invasive/more information required*

d,e – Oldham, M.J., W.D. Bakowsky, and D.A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ontario ministry of Natural Resources, Peterborough, Ontario, Canada.

*** -** only lists species not observed during 2012 field work, data on other noted species not available.

Appendix C

Breeding Bird List

Appendix C

Bird List

Common Name	Scientific Name	Status					Dance Environmental Bird Observations 2012 [f]	Dance Environmental Bird Observations 2013 [g]	Dance Environmental Bird Observations 2014, 2015 [h]	# Breeding Pairs/ Territories Observed by Beacon Environmental 2021
		National Species at Risk COSEWIC[a]	Species at Risk in Ontario Listing [b]	Provincial breeding season SRANK [c]	Area-sensitive (OMNR)[d]	Halton Region Rarity[e]				
Great Blue Heron	*Ardea herodias*			S4		C		X	X*	
Canada Goose	*Branta canadensis*			S5		A				1
Hooded Merganser	*Lophodytes cucullatus*			S5		HU				1
Cooper's Hawk	*Accipiter cooperi*			S4	A	HU		X		
Red-tailed Hawk	*Buteo jamaicensis*			S5		C	X		X	
Killdeer	*Charadrius vociferus*			S5		C		X	X*	1
Spotted Sandpiper	*Actitis macularia*			S5		C			X	
Ring-billed Gull	*Larus delawarensis*			S5		A			X	
Mourning Dove	*Zenaida macroura*			S5		A	X	X	X	1
Belted Kingfisher	*Ceryle alcyon*			S4		C			X	
Red-bellied Woodpecker	*Melanerpes carolinus*			S4		HU	X		X	
Downy Woodpecker	*Picoides pubescens*			S5		C	X		X	
Hairy Woodpecker	*Picoides villosus*			S5	A	C	X	X	X	
Northern Flicker	*Colaptes auratus*			S4		C	X	X	X	
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4		C	X*		X	1
Great Crested Flycatcher	*Myiarchus crinitus*			S4		C	X		X	2
Eastern Kingbird	*Tyrannus tyrannus*			S4		C	X*		X	
Purple Martin	*Progne subis*			S4		HU			X	
Tree Swallow	*Tachycineta bicolor*			S4		A			X	
Barn Swallow	*Hirundo rustica*	THR	THR	S4		C		X	X*	
Blue Jay	*Cyanocitta cristata*			S5		A	X	X	X	2
American Crow	*Corvus brachyrhynchos*			S5		A		X	X	
Black-capped Chickadee	*Poecile atricapillus*			S5		.A	X	X	X	1
White-breasted Nuthatch	*Sitta carolinensis*			S5	A	C	X		X	1
Brown Creeper	*Certhia americana*			S5	A	HU	X			
House Wren	*Troglodytes aedon*			S5		C	X			2
Golden-crowned Kinglet	*Regulus satrapa*			S5		HR	X			
Eastern Bluebird	*Sialia sialis*			S5		HU	X			
Wood Thrush	*Hylocichla mustelina*	THR	SC	S4		C	X			
American Robin	*Turdus migratorius*			S5		A	X	X	X	6
Gray Catbird	*Dumetella carolinensis*			S4		C	X	X	X	1
Cedar Waxwing	*Bombycilla cedrorum*			S5		C	X	X	X	
European Starling	*Sturnus vulgaris*			SE		A	X	X	X	4
Red-eyed Vireo	*Vireo olivaceus*			S5		A	X	X	X	

Common Name	Scientific Name	Status					Dance Environmental Bird Observations 2012 [f]	Dance Environmental Bird Observations 2013 [g]	Dance Environmental Bird Observations 2014, 2015 [h]	# Breeding Pairs/ Territories Observed by Beacon Environmental 2021
		National Species at Risk COSEWIC[a]	Species at Risk in Ontario Listing [b]	Provincial breeding season SRANK [c]	Area-sensitive (OMNR)[d]	Halton Region Rarity[e]				
Yellow Warbler	*Setophaga petechia*			S5		C		X	X*	
Common Yellowthroat	*Geothlyphis trichas*			S5		C		X	X*	1
Scarlet Tanager	*Piranga olivacea*			S4	A	C	X*			
Northern Cardinal	*Cardinalis cardinalis*			S5		C	X	X	X	3
Rose-breasted Grosbeak	*Pheucticus ludovicianus*			S4		C			X	
Indigo Bunting	*Passerina cyanea*			S4		C		X	X	
Chipping Sparrow	*Spizella passerina*			S5		C	X	X	X	
Field Sparrow	*Spizella pusilla*			S4		C		X	X*	
Savannah Sparrow	*Passerculus sandwichensis*			S4	A	A		X		
Song Sparrow	*Melospiza melodia*			S5		A	X	X	X	2
Dark-eyed Junco	*Junco hyemalis*			S5		C	X			
Red-winged Blackbird	*Agelaius phoeniceus*			S4		A	X	X	X	5
Common Grackle	*Quiscalus quiscula*			S5		A		X	X	2
Brown-headed Cowbird	*Molothrus ater*			S4		A		X	X	1
Baltimore Oriole	*Icterus galbula*			S4		C	X		X	3
House Finch	*Haemorhous mexicanus*			SNA		A	X			
American Goldfinch	*Spinus tristis*			S5		A	X	X	X	1
House Sparrow	*Passer domesticus*			SNA		A				2

= Maximum number of breeding pairs recorded on subject property
a - COSEWIC = Committee on the Status of Endangered Wildlife in Canada: END = Endangered, THR = Threatened, SC = Special Concern
b - Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario): END = Endangered, THR = Threatened, SC = Special Concern
c - SRANK (from Natural Heritage Information Centre) for breeding status if: S1 (Critically Imperiled), S2 (Imperiled),S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure) SNA (Not applicable…'because the species is not a suitable target for conservation activities'; includes non-native species)
d - Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.
e - Halton Natural Areas Inventory 2006: Volume 2 Species Checklists (ISBN 0-9732488-7-4). A-Abundant, C-Common, HR-Regionally uncommon, HU-Regionally uncommon.
f – Surveys conducted on Subject Property and on adjacent Bronte Provincial Park lands. * species observed on Bronte Provincial Park lands.
g – Surveys conducted on adjacent Bronte Provincial Park lands.
h – Surveys conducted on Subject Property and on adjacent Bronte Provincial Park lands. * species observed on Bronte Provincial Park lands.

Appendix D

Species at Risk Screening and MECP Correspondence

From:	Martin, Christopher (MECP)
To:	Anna Cunningham
Subject:	RE: Species at Risk Screening for 1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Town of Oakville, Region of Halton
Date:	April 12, 2021 2:08:57 PM
Attachments:	Client Guide to Preliminary Screening-May 2019.pdf

Hi Anna,

Thank you for your information request in support of Lot 31, Concession 1 development in the Town of Oakville. I have knowledge of records for the following species at risk on or within ~1 km of the subject properties:

Eastern flowering dogwood
Butternut
American ginseng
Monarch
Mottled Duskywing
Silver shiner (Bronte Creek)
American eel (Bronte Creek)
Snapping turtle
Wood turtle
Eastern hog-nosed snake
Barn swallow
Bank swallow
Short-eared owl
Peregrine Falcon
Eastern wood-pewee
Olive-sided flycatcher
Wood thrush
Chimney swift
Bobolink
Eastern meadowlark
Yellow-breasted chat
Tri-colored bat
Little brown myotis

Given the habitat of the study area, other species at risk may also be present. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. Please see the attached guide for a list of publicly available information sources of species at risk information.

Some species at risk information is highly sensitive (e.g. American ginseng) and is not intended for any person or project unrelated to this undertaking. Please do not include any specific locational information in reports that will be available for the public record.

I encourage you to report species at risk observations to NHIC (Report rare species

(animals and plants) | Ontario.ca), E-bird and/or iNaturalist as appropriate.

Regards,

Chris

Christopher Martin, A/Management Biologist
Permissions and Compliance Section | Species at Risk Branch | Land and Water Division
Ministry of the Environment, Conservation and Parks
Christopher.Martin@ontario.ca | (705) 313-3928

From: Anna Cunningham <acunningham@beaconenviro.com>
Sent: March 10, 2021 2:53 PM
To: Martin, Christopher (MECP) <Christopher.Martin@ontario.ca>
Cc: Kenneth Ursic <kursic@beaconenviro.com>
Subject: Species at Risk Screening for 1300, 1316, 1326, 1342, 1350 and 1354 Bronte Road, Town of Oakville, Region of Halton

Good afternoon Chris,

Beacon Environmental Limited (Beacon) was retained by Argo Development Corporation to provide input into an Environmental Impact Report for the development of Lot 31, Concession 1 North of Dundas Street, Town of Oakville, Region of Halton (hereto referred as the subject properties). Please refer to the attached figure for the exact location of the subject properties.

It would be helpful if you could assist in screening and assessing for all possible species at risk (SAR) on the subject properties and adjacent lands.

Thank you in advance for any guidance you can provide,

Anna Cunningham, B.Sc. (Hons.) / Ecologist
BEACON ENVIRONMENTAL
373 Woolwich Street, Guelph, ON N1H 3W4
T) 519.826.0419 x32 C) 905.767.1720
www.beaconenviro.com

Appendix D

Table D2: Species At Risk Screening

Taxonomy	Species	Status			Preferred Habitat[1, 2]	Known Species Range[1, 2]	Potentially Suitable Habitat Present within the Subject Lands	Potentially Suitable Habitat Present outside of Subject Lands	Likelihood of Presence (Based on Field Surveys)
		ESA	SARA	COSEWIC					
Reptiles	Wood Turtle *Glyptemys insculpta*	END	THR Schedule 1	THR	Historically, the Wood Turtle was known as "old red leg" owing to the orange or brick-red colour of its legs. A mid-sized turtle, the Wood Turtle reaches its full size of 20-24 cm long around the age of 20. The Wood Turtle prefers clear rivers, streams or creeks with a slight current and sandy or gravelly bottom. It spends more time on land and the shores of watercourses than other native Ontario turtles. Wooded areas are essential habitat for the Wood Turtle, but they are found in other habitats, such as wet meadows, swamps and fields. Wood Turtles overwinter on stream bottoms.	In Ontario, Wood Turtles have been found in three separate regions of the province. Studies are underway to determine more accurately the size and extent of these populations and threats they're facing. The Wood Turtle is found in isolated patches from Nova Scotia and New Brunswick south to Virginia, and west through southern Quebec and Ontario to Minnesota and northeastern Iowa.	**No**.	**Yes** Bronte Creek may provide suitable habitat	—
Reptiles	Eastern Hog-nosed Snake *Heterodon platirhinos*	THR	THR Schedule 1	THR	The Eastern Hog-nosed Snake specializes in hunting and eating toads, and usually only occurs where toads can be found. Eastern Hog-nosed Snakes prefer sandy, well-drained habitats such as beaches and dry forests where they can lay their eggs and hibernate. They use their up-turned snout to dig burrows below the frost line in the sand where eggs are deposited.	The Eastern Hog-nosed Snake is only found in eastern North America, with about ten per cent of its range occurring in Canada. The Canadian population is limited to Ontario where it can be found in two areas: The Carolinian Region and Great Lakes-St. Lawrence Region.	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat	-
Reptiles	Snapping Turtle *Chelydra serpentina*	SC	SC Schedule 1	SC	Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	The Snapping Turtle's range extends from Ecuador to Canada. In Canada this turtle can be found from Saskatchewan to Nova Scotia. It is primarily limited to the southern part of Ontario. The Snapping Turtle's range is contracting.	**Yes** Artificial ponds	**No** Bronte Creek (outside study area) may provide suitable habitat	**Very Low** — No individuals observed during field surveys between 2012 and 2021
Plants	American Ginseng *Panax quinquefolius*	END	END Schedule 1	END	In Ontario, American Ginseng typically grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple (Acer saccharum), White Ash (Fraxinus americana) and American Basswood (Tilia americana). It usually grows in deep, nutrient rich soil over limestone or marble bedrock.	American Ginseng ranges from Louisiana and Georgia north to New England and Minnesota. In Canada, it is found in southwestern Quebec and southern Ontario.	**Yes** Forested habitat	**Yes** Forested habitat	**Very Low** — No individuals observed during field surveys between 2012 and 2021
Plants	Butternut *Juglans cinerea*	END	END Schedule 1	END	In Ontario, Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the	Butternut can be found throughout central and eastern North America. In Canada, Butternut occurs in Ontario, Quebec and New Brunswick. In Ontario, this species is found throughout the southwest, north to the Bruce Peninsula, and south of the Canadian Shield.	**Yes**	**Yes**	**Present** — See Kuntz Forestry Report

Taxonomy	Species	Status			Preferred Habitat[1, 2]	Known Species Range[1, 2]	Potentially Suitable Habitat Present within the Subject Lands	Potentially Suitable Habitat Present outside of Subject Lands	Likelihood of Presence (Based on Field Surveys)
		ESA	SARA	COSEWIC					
					shade, and often grows in sunny openings and near forest edges.				
Plants	Black Ask *Fraxinus nigra*	END	No Status	THR	Black Ash is predominantly a wetland species found in swamps, floodplains and fens.	Black Ash occurs from western Newfoundland to southeastern Manitoba and North Dakota, ranging southward to Iowa, Illinois, Virginia and Delaware. Black Ash's range extends farther north than any other ash and approximately 51% of the species' global range is within Canada.	**Yes**	**Yes**	**Present (Adjacent Lands)** — Two dead/dying specimens were observed in ELC Unit 12 associated with a seep on the alluvial fan
Plants	Eastern Flowering Dogwood *Cornus florida*	END	END Schedule 1	END	Eastern Flowering Dogwood grows under taller trees in mid-age to mature deciduous or mixed forests. It most commonly grows on floodplains, slopes, bluffs and in ravines, and is also sometimes found along roadsides and fencerows.	In Canada, it can only be found in southern Ontario in the Carolinian Zone (the small area of Ontario southwest of Toronto to Sarnia down to the shores of Lake Erie).	**Yes** Forested habitat	**Yes** Forested habitat	**Very Low** — No individuals observed during field surveys between 2012 and 2021
Mammals	Little Brown Myotis (Bat) *Myotis lucifugus*	END	END Schedule 1	END	Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings and barns for summer colonies where they can raise their young. Bats can squeeze through very tiny spaces (as small as six millimetres across) and this is how they access many roosting areas. Little brown bats hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing. This species can typically be associated with any community where suitable roosting (i.e. caviety trees, houses, abandoned buildings, barns, etc.) habitat is available.	The Little Brown Myotis is widespread in southern Ontario and found as far north as Moose Factory and Favourable Lake. Outside Ontario, this bat is found across Canada (except in Nunavut) and most of the United States.	**Yes** Forested habitat	**Yes** Forested habitat	**Assumed** — Habitat assessment required
Mammals	Northern Myotis *(Bat) Myotis septentrionalis*	END	END Schedule 1	END	Northern Myotis bats are associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines.	The Northern Myotis is found throughout forested areas in southern Ontario, to the north shore of Lake Superior and occasionally as far north as Moosonee, and west to Lake Nipigon.	**Yes** Forested habitat	**Yes** Forested habitat	**Moderate** — Species detected in open areas adjacent to forested habitat
Mammals	Tricoloured Bat *Perimyotis subflavus*	END	END Schedule 1	END	Tricoloured Bat inhabits a variety of forested communities, and will roost older forests and barns (or other structures). Foraging habitats include areas over water and streams. They hibernate in cave where they typically roost independently rather than in groups.	Tricoloured Bat is found in southern Ontario, where its northern limit is in proximity to Sudbury. Due to its rarity, their distribution is scattered.	**Yes** Forested habitat	**Yes** Forested habitat	**Assumed** — Habitat assessment required
Insects	Monarch *Danaus plexippus*	SC	SC Schedule 1	END	Throughout their life cycle, Monarchs use three different types of habitat. Only the caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers.	The Monarch's range extends from Central America to southern Canada. In Canada, Monarchs are most abundant in southern Ontario and Quebec where milkweed plants and breeding habitat are widespread. During late summer and fall, Monarchs from Ontario migrate to central Mexico where they spend the winter months. During migration, groups of Monarchs numbering in the thousands can be	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat	-

Taxonomy	Species	Status			Preferred Habitat[1, 2]	Known Species Range[1, 2]	Potentially Suitable Habitat Present within the Subject Lands	Potentially Suitable Habitat Present outside of Subject Lands	Likelihood of Presence (Based on Field Surveys)
		ESA	SARA	COSEWIC					
						seen along the north shores of Lake Ontario and Lake Erie.			
Insects	Mottled Duskying *Erynnis martialis*	END	END Schedule 1	END	In southern Ontario, the Mottled Duskywing requires the host plant called New Jersey Tea (*Ceanothus americanus*) to carry out its life cycle. These plants can be found in dry, well-drained soils or alvar habitat in oak and pine woodland, roadsides, riverbanks,shady hillsides and tall grass prairies.	This species is distributed into two populations in Canada: the Great Lakes Plain Population (southern Ontario and historically Quebec) and the Borel Population (southern Manitoba).	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat	-
Fish	American Eel *Anguilla rostrata*	END	No Status	THR	Over the course of its life, the American Eel can be found in both salt and fresh water. In fact, some scientists consider the American Eel to have the broadest diversity of habitats of any fish species in the world.	The American Eel starts life in the Sargasso Sea in the North Atlantic Ocean and migrates along the east coast of North America. In Canada, it is found in fresh water and salt water areas that are accessible from the Atlantic Ocean. This area extends from Niagara Falls in the Great Lakes up to the mid-Labrador coast. In Ontario, American Eels can be found as far inland as Algonquin Park. Once the eels mature (10-25 years) they return to the Sargasso Sea to spawn.	**No**.	**No** Bronte Creek may provide suitable habitat; however it is not mapped as such by DFO	—
Fish	Silver Shiner *Notropis photogenis*	THR	SC Schedule 3	Threatened	Silver shiners prefer moderate to large size streams with swift currents that are free of weeds and have clean gravel or boulder bottoms. They live in schools and feed on crustaceans and adult flies that fall in the water or fly just above the surface. In June or July, they spawn by scattering their eggs over gravel riffles.	The Silver Shiner range includes east-central North America throughout the Ohio and Tennessee River drainage basins. In Ontario, it is found in the Thames and Grand Rivers, and in Bronte Creek and Sixteen Mile Creek, which flow into Lake Ontario.	**No**.	**Yes** Bronte Creek is mapped as critical habitat by DFO	—
Birds	Yellow-breasted Chat *Icteria virens*	END	SC Schedule 1	END	The Yellow-breasted Chat lives in thickets and scrub, especially locations where clearings have become overgrown. These birds spend their winters in coastal marshes.	In Canada, it lives in southern British Columbia, the Prairies, and southwestern Ontario, where it is concentrated in Point Pelee National Park and Pelee Island in Lake Erie.	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat	-
Birds	Bank Swallow *Riparia riparia*	THR	THR Schedule 1	THR	Bank Swallows nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. Many nests are on banks of rivers and lakes, but they are also found in active sand and gravel pits or former ones where the banks remain suitable. The birds breed in colonies ranging from several to a few thousand pairs.	The Bank Swallow is found all across southern Ontario, with sparser populations scattered across northern Ontario. The largest populations are found along the Lake Erie and Lake Ontario shorelines, and the Saugeen River (which flows into Lake Huron).	**No**.	**No —** Open Bluff on valley slope is almost exclusively Queenston shale	**Very Low** — No individuals observed during field surveys between 2012 and 2021
Birds	Barn Swallow *Hirundo rustica*	SC	THR Schedule 1	SC	Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts. The species is attracted to open structures that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces.	The Barn Swallow may be found throughout southern Ontario and can range as far north as Hudson Bay, wherever suitable locations for nests exist.	**Suitable foraging habitat only** — Open areas	**Suitable foraging habitat only** — Open areas	**Moderate** — Single individuals observed over ELC Units 5 and 10a by Dance Environmental between 2013 and 2015

Taxonomy	Species	Status			Preferred Habitat[1, 2]	Known Species Range[1, 2]	Potentially Suitable Habitat Present within the Subject Lands	Potentially Suitable Habitat Present outside of Subject Lands	Likelihood of Presence (Based on Field Surveys)
		ESA	SARA	COSEWIC					
Birds	Bobolink *Dolichonyx oryzivorus*	THR	THR Schedule 1	THR	Historically, Bobolinks lived in North American tallgrass prairie and other open meadows. With the clearing of native prairies, Bobolinks moved to living in hayfields. Bobolinks often build their small nests on the ground in dense grasses. Both parents usually tend to their young, sometimes with a third Bobolink helping.	The Bobolink breeds across North America. In Ontario, it is widely distributed throughout most of the province south of the boreal forest, although it may be found in the north where suitable habitat exists.	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat in grassland restoration areas	-
Birds	Chimney Swift *Chaetura pelagica*	THR	THR Schedule 1	THR	Before European settlement Chimney Swifts mainly nested on cave walls and in hollow trees or tree cavities in old growth forests. Today, they are more likely to be found in and around urban settlements where they nest and roost (rest or sleep) in chimneys and other manmade structures. They also tend to stay close to water as this is where the flying insects they eat congregate.	The Chimney Swift breeds in eastern North America, possibly as far north as southern Newfoundland. In Ontario, it is most widely distributed in the Carolinian zone in the south and southwest of the province, but has been detected throughout most of the province south of the 49th parallel. It winters in northwestern South America.	**Yes** Chimneys in existing buildings	**Yes** Slopes of Bronte Creek valley that demonstrate old growth forest characteristics	**Very Low** — No individuals observed during targetted surveys in 2021
Birds	Eastern Meadowlark *Sturnella magna*	THR	THR Schedule 1	THR	Eastern Meadowlarks breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Small trees, shrubs or fence posts are used as elevated song perches.	In Ontario, the Eastern Meadowlark is primarily found south of the Canadian Shield but it also inhabits the Lake Nipissing, Timiskaming and Lake of the Woods areas.	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat in grassland restoration areas	-
Birds	Eastern Wood-Pewee *Contopus virens*	SC	SC Schedule 1	SC	The Eastern Wood-pewee lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understory vegetation.	The eastern wood-pewee is found across most of southern and central Ontario, and in northern Ontario as far north as Red Lake, Lake Nipigon and Timmins.	**Yes** Forested habitat	**Yes** Forested habitat	**Moderate** — Observed in forested communities
Birds	Olive-sided flycatcher *Contopus cooperi*	SC	THR Schedule 1	SC	The Olive-sided Flycatcher is most often found along natural forest edges and openings. It will use forests that have been logged or burned, if there are ample tall snags and trees to use for foraging perches. Olive-sided Flycatchers' breeding habitat usually consists of coniferous or mixed forest adjacent to rivers or wetlands. In Ontario, Olive-sided Flycatchers commonly nest in conifers such as White and Black Spruce, Jack Pine and Balsam Fir.	The Olive-sided Flycatcher has a broad breeding range across Canada and the western and northeastern United States. Just over half the range is found in Canada, where it breeds in every province and territory except Nunavut. Its breeding population is most dense along the west coast from southern British Columbia to California. In Ontario, it is widely distributed throughout the central and northern areas of the province.	**No**.	**No**.	-
Birds	Peregrine Falcon *Falco peregrinus*	SC	SC Schedule 1	No Status	Peregrine Falcons usually nest on tall, steep cliff ledges close to large bodies of water. Although most people associate Peregrine Falcons with rugged wilderness, some of these birds have adapted well to city life. Urban peregrines raise their young on ledges of tall buildings, even in busy downtown areas. Cities offer peregrines a good year-round supply of pigeons and starlings to feed on.	Although Peregrine Falcons now nest in and around Toronto and several other southern Ontario cities, the majority of Ontario's breeding population is found around Lake Superior in northwestern Ontario.	**No**.	**No.** Cliffs not present	-

Taxonomy	Species	Status			Preferred Habitat[1, 2]	Known Species Range[1, 2]	Potentially Suitable Habitat Present within the Subject Lands	Potentially Suitable Habitat Present outside of Subject Lands	Likelihood of Presence (Based on Field Surveys)
		ESA	SARA	COSEWIC					
Birds	Short-eared Owl *Asio flammeus*	SC	SC Scheudle 1	SC	The Short-eared Owl lives in open areas such as grasslands, marshes and tundra where it nests on the ground and hunts for small mammals, especially voles.	The Short-eared Owl has a world-wide distribution, and in North America its range extends from the tundra south to the central United States. In Ontario, the species has a scattered distribution, found along the James Bay and Hudson Bay coastlines, along the Ottawa River in eastern Ontario, in the far west of the Rainy River District, and elsewhere in southern Ontario, at places such as Wolfe and Amherst Islands near Kingston. Most northern populations are migratory, moving southward in the winter.	**No**.	**Yes** Bronte Creek Provincial Park may provide suitable habitat in grassland restoration areas	**Very Low** — No individuals observed during targetted owl surveys by Dance Environmental between 2012 and 2015
Birds	Wood Thrush *Hylocichla mustelina*	SC	THR Schedule 1	SC	The Wood Thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. These birds prefer large forests, but will also use smaller stands of trees. They build their nests in living saplings, trees or shrubs, usually in sugar maple or American beech.	The wood thrush is found all across southern Ontario. It is also found, but less common, along the north shore of Lake Huron, as far west as the southeastern tip of Lake Superior. There is a very small population near Lake of the Woods in northwestern Ontario, and there have been scattered sightings in the mixed forest of northern Ontario.	**Yes** Forested habitat	**Yes** Forested habitat	**Moderate** — Observed in ELC Unit 1 by Dance Environmental in 2013

Glossary
ESA - Extripated - a species that no longer exists in the wild in Ontario but still occurs elsewhere.
SARA - Extripated - a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
ESA - Endangered - a species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act.
SARA - Endangered - a wildlife species that is facing imminent extirpation or extinction.
ESA - Threatened - a species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SARA - Threatened - a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
ESA - Special Concern (formerly Vulnerable) - a species with characteristics that make it sensitive to human activities or natural events.
SARA - Special Concern - a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Ontario Ministry of Natural Resources and Forestry
Endangered Species Act
Species at Risk Act (Federal)

Schedule 1
The official list of species that are classified as extirpated, endangered, threatened, and of special concern.
Schedule 2
Species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
Schedule 3
Species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
Committee on the Stauts of Endangerd Wildlife in Canada - a committee of experts that assesses and designates which wild species are in some danger of disappearing from Canada.

References

1. Species at Risk . Ontario Ministry of Natural Resources and Forestry. http://www.mnr.gov.on.ca/en/Business/Species/index.html. © Queens Printer For Ontario, 2013.
2. Species at Risk Status Reports. Committed on the Status of Endangered Wildlife in Canada. Ottawa. http://www.sararegistry.gc.ca/search/advSearchResults_e.cfm?stype=doc&docID=18.

Appendix E

SWH Analysis

Appendix E

Table E1. Significant Wildlife Habitat (SWH) Evaluation for the Subject Property and Adjacent Lands

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
Seasonal Concentration Areas				
Waterfowl Stopover and Staging Areas (Terrestrial) American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	Suitable Habitat • Fields with sheet water during Spring (mid-March to May) Suggested Criteria • Studies carried out and verified presence of an annual concentration of any listed species	• No suitable habitat or associated species present on the Subject Property or adjacent lands. • No known records for significant waterfowl stopover on Subject Property or adjacent lands.	**NO**	**Unlikely**
Waterfowl Stopover and Staging Areas (Aquatic) 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	Suitable Habitat • Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration • Sewage treatment ponds and storm water ponds do not qualify as 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) Suggested Criteria Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • Wetland area and shorelines associated with sites identified within the Significant Wildlife Habitat Technical Guide (SWHTG) (MNRF 2000) Appendix K are SWH	• While many of the species in this category have been noted from the Subject Property (see **Appendix C**), the numbers of individuals observed are too low to meet the SWH criteria. Additionally, the extent of staging and stopover habitat is too small to support the large numbers required to meet the criteria. • No known records for significant waterfowl stopover on Subject Property or adjacent lands.	**NO**	**Unlikely**
Shorebird Migratory Stopover Area Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover	Suitable Habitat • Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats	• Only Spotted-Sandpiper (*Actitis macularius*) has been recorded on lands adjacent to the Subject Property (Dance Environmental 2013) during bird surveys. The	**NO**	**Unlikely**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
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	• 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 Suggested Criteria • 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 100 m radius area	Subject Property does not support sufficient numbers of individuals and suitable habitat is limited. • No known records for significant waterfowl stopover on Subject Property or adjacent lands.		
Raptor Wintering Area Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Short-eared Owl Bald Eagle	Suitable Habitat • The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors • Raptor wintering (hawk/owl) sites need to be > 20 ha with a combination of forest and upland Suggested Criteria Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or at least 10 individuals and two 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	Subject Property • Red-tailed Hawk (*Buteo jamaicensis*) has been recorded on the Subject Property (Dance Environmental 2012, 2014 & 2015). However, this species occurred in small numbers and suitable habitat is not present (and will not be present in the future), so it is not considered potential SWH. Adjacent Lands • According the to *Significant Wildlife Technical Guide* (MNRF 2000), preferred raptor wintering sites are those that are least disturbed and within rural landscapes rather than urban areas. While Bronte Creek Provincial Park adjacent to the Subject Property supports suitable habitat, the Subject Property and much of the adjacent lands are urbanized and support existing or new developments. Although this habitat type is possible, it has not been confirmed through our field surveys or background review.	**NO**	**Possible —** Bronte Creek P.P. meadow and woodland
Bat Hibernacula Big Brown Bat	Suitable Habitat • Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Suggested Criteria • All sites with confirmed hibernating bats are SWH • The area includes 200m radius around the entrance of the hibernaculum for most development types and for wind farms	• No suitable habitat is present on or adjacent to the Subject Property.	**NO**	**Unknown** — Bluff inaccessible
Bat Maternity Colonies Big Brown Bat Silver-haired Bat	Suitable Habitat • Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH) • 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	• As established in the approved ToR, surveys of bat habitat were scoped to identify potential habitat regulated under the *Endangered Species Act*, in the buildings on the developed portion of the Subject Property, rather than SWH. • Potential SWH habitat may exists within the forested communities associated with the Subject Property and adjacent lands. Big Brown Bat were identified on the	**Likely —** Forest only	**Likely —** Forest only

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
	Suggested Criteria • Maternity colonies with confirmed use by; – >10 Big Brown Bats – >5 Adult Female Silver-haired Bats – The area of the habitat includes the entire woodland or the forest stand ELC Ecosite or an Ecoelement containing the maternity colonies	Subject Property; however, these observations were not associated with a known roost. For the purposed of this EIA, it is assumed that SWH is present.		
Turtle Wintering Areas Midland Painted Turtle Northern Map Turtle Snapping Turtle	Suitable Habitat • For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH Suggested Criteria • 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	Subject Property • One Midland Painted Turtle (*Chrysemys picta marginata*) was observed in 2015 by Dance Environmental basking in the large artificial pond on the Subject Property. Since the species occurred in small numbers, and has not been observed in subsequent studies, the Subject Property is not considered potential SWH. Adjacent Lands • No suitable ponds in the adjacent lands are known to occur.	**NO**	**Unlikely**
Reptile Hibernaculum Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake Eastern Ribbonsnake	Suitable Habitat • For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural 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 • 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 Suggested Criteria Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g., foundation or rocky slope) on sunny warm days in spring	Subject Property • No suitable habitat is present on the Subject Property as no burrows, rock crevices, old foundations or rocky slopes have been identified on the Subject Property. • Dance Environmental (2013) noted nine Eastern Gartersnake (*Thamnophis sirtalis)* and one Northern Brownsnake (*Storeria dekayi*) at the perimeter of the Subject Property in 2013. Even though more than 5 snakes have been identified in association with the Bronte Creek valleylands, no potential SWH hibernacula areas have been identified on the Subject Property. Adjacent Lands • The observation noted above by Dance Environmental (2013) may indicate the presence of this SWH along the valley slope. Suitable surveys of the open and vegetated bluff would be required to confirm.	**NO**	**Likely —** Valley Slope only
Colonially-Nesting Bird Breeding Habitat (Bank and Cliff) Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Suitable Habitat • 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 Suggested Criteria	Subject Property • No suitable, natural habitat for colonial-nesting birds (bank and cliff) is present on the Subject Property. • Neither Cliff Swallow or Northern Rough-winged Swallow has been observed on or adjacent to the Subject Property by Beacon or Dance. Adjacent Lands	**NO**	**Unlikely**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
	Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs or 50 bank swallow 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	• Potentially suitable habitat is present along the Bronte Creek Valleylands, and there are eBird records of these species in the east side of Bronte Creek Provincial Park. However, the exact location of any nesting colonies is not documented in eBird. • No nests were observed on the open bluff in the adjacent valleyland		
Colonially-Nesting Bird Breeding Habitat (Tree/Shrubs) Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	Suitable Habitat • 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 Suggested Criteria Studies confirming: • Presence of 2 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 <15.0 ha with a colony is the SWH	• No suitable habitat for colonial-nesting birds (trees and shrubs) was identified through background review or field surveys on the Subject Property or adjacent lands. • No wildlife concentration areas were identified through background review of the Subject Property and adjacent lands. • One SWH indicator species was noted during breeding bird surveys in 2013, 2014 and 2015. Great Blue Heron (*Ardea herodias*) was observed on the adjacent lands (Bronte Creek Provincial Park) by Dance Environmental. This species was not observed breeding, and therefore this area is not considered potential SWH.	**NO**	**Unlikely**
Colonially-Nesting Bird Breeding Habitat (Ground) Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Suitable Habitat • Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas • Brewer's Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands Suggested Criteria Studies confirming: • Presence of >25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant • Presence of 5 or more pairs for Brewer's Blackbird • The edge of the colony and a minimum 150m area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH	• No suitable habitat is present on the Subject Property or adjacent lands. • No SWH indicator species were noted nesting during breeding bird surveys in 2012, 2013, 2014, 2015 or 2021.	**NO**	**Unlikely**
Migratory Butterfly Stopover Areas Painted Lady Red Admiral Monarch	Suitable Habitat • 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 or Lake Erie • 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 Suggested Criteria Studies confirm:	Subject Property • Only four Monarch individuals were observed on the Subject Property in August. • Suitable stopover habitat is not present on the Subject Property as the open areas are comprised of maintained lawn. Adjacent Lands • The open fields to the north of the Subject Property that are within Bronte Creek Provincial Park support > 10 ha of open meadow habitat with adjacent woodlands and	**NO**	**Likely** — Bronte Creek P.P. meadow

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
	• 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 • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admirals is to be considered significant	could potentially support this SWH category, however surveys would need to be completed to confirm MUDs. • MUD assessment was not included in the approved ToR. For the purpose of this EIA, it is assumed that the SWH is present on adjacent meadow habitat in Bronte Creek Provincial Park.		
Landbird Migratory Stopover Areas All migratory songbirds	Suitable Habitat • Woodlots >5 ha in size and within 5 km of Lake Ontario and Lake Erie • If woodlands are rare in an area of shoreline, woodland fragments 2 ha to 5ha can be considered for this habitat • If multiple woodlands are located along the shoreline those Woodlands <2 km from Lake Erie or 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 Suggested Criteria Studies confirm: • Use of the woodlot by >200 birds/day and with >35 species 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	• Suitable habitat is present as the Subject Property is within 5km of Lake Ontario and woodlands on the property are >5 ha. There is a deciduous forest located south of the Subject Property (Bronte Creek Valleylands) that could also provide landbird migratory stopover area. This deciduous forest is large for the area and should be considered potential SWH.	**YES —** Woodland only	**Likely —** Woodland only
Deer Winter Congregation Areas White-tailed Deer	Suitable Habitat • Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots >50 ha • Deer movement during winter in Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands • Large woodlots > 100 ha 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 Suggested Criteria Studies confirm: • Deer management is an MNR responsibility, deer winter congregation areas considered significant will be mapped by MNRF • Use of the woodlot by white-tailed deer will be determined by MNR, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF	• No suitable habitat identified on the Subject Property or adjacent lands by the MNRF.	**NO**	**Unlikely**
Rare Vegetation Communities				
Cliffs and Talus Slopes	• A Cliff is vertical to near vertical bedrock >3m in height • A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris • Most cliff and talus slopes occur along the Niagara Escarpment Suggested Criteria	• Neither Cliff nor Talus were identified on Subject Property or adjacent lands. • No talus observed at base of the Open Bluff on adjacent lands	**NO**	**Unlikely**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
	• ELC Communities: TAO, TAS, TAT, CLO, CLS or CLT			
Sand Barren	• 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% Suggested Criteria • A sand barren area >0.5 ha in size • ELC Communities: SBO1, SBS1, SBT1 • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)	• Vegetation community not present on Subject Property or adjacent lands.	**NO**	**NO**
Alvar	• 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 plant • 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 Suggested Criteria • An Alvar site > 0.5 ha in size • Alvar is particularly rare in ecoregion 7E where the only known sites are found in the western islands of Lake Erie • Five indicator species specific to alvars within Ecoregion 7E: *1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum* • Field studies identify four of the five Alvar indicator species within ELC communities: ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2 • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics) • The Alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses	• Vegetation community not present on Subject Property or adjacent lands.	**NO**	**NO**
Old Growth Forest	• 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. Suggested Criteria • Woodland area is >0.5 ha • If dominant trees species of the ecosite are >140 years old, then stand is SWH • 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 contain the old growth characteristics is the SWH	• Vegetation community not present on Subject Property or adjacent lands.	**NO**	**NO**
Savannah	• A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%	• Vegetation community not present on Subject Property or adjacent lands.	**NO**	**NO**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
	• In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario) Suggested Criteria • 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 • 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 7E should be used • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)			
Tallgrass Prairie	• A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover • In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario) Suggested Criteria • 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 • ELC communities TPO1, TPO2 • Field studies confirm one or more of the Prairie indicator species listed in Appendix N in SWHTG (MNRF 2000) should be present • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics)	• Vegetation community not present on Subject Property. • Adjacent Bronte Creek Provincial Park lands contain a prairie restoration area. LIO records suggest the presence of Hoary Mountain Mint (*Pycnanthemum incanum var. incanum*), a prairie indicator species, within the 1 km grid	**NO**	**Likely** — Bronte Creek P.P. Prairie Restoration Areas only
Other Rare Vegetation Communities	• Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG (MNRF 2000) • Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps • ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in SWHTG (MNRF 2000) Appendix M • The MNRF/NHIC will have up to date listing for rare vegetation communities	• No rare vegetation communities present on Subject Property or adjacent lands.	**NO**	**Unlikely**
Specialized Habitat for Species				
Waterfowl Nesting Area American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	Suitable Habitat • A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5 ha) with small wetlands (<0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur • Upland areas should be at least 120m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests Suggested Criteria Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or presence of 10 or more nesting pairs for listed species including Mallards • Any active nesting site of an American Black Duck is considered significant • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites	• No suitable habitat is present on the Subject Property or adjacent lands. • One SWH indicator species was noted during breeding bird surveys in 2021, Hooded Merganser (*Lophodytes cucllatus*). Since this species occurred in small numbers (1 individual recorded) and habitat is not present, it is not considered potential SWH.	**NO**	**Unlikely**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Suitable Habitat • Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms) Suggested Criteria Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant	• Minimal suitable habitat is present on the Subject Property. However, none of the listed species were recorded on the Subject Property or adjacent lands. • Woodland on adjacent lands may facilitate this SWH	**NO**	**Unlikely**
Woodland Raptor Nesting Habitat Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	Suitable Habitat • All natural or conifer plantation woodland/forest stands combined >30ha or with >4 ha of interior habitat. Interior habitat determined with a 200 m buffer • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore island • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest Suggested Criteria Studies confirm: • Presence of 1 or more active nests from species list is considered significant • Red-shouldered Hawk and Northern Goshawk – a 400m radius around the nest or 28 ha of suitable 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	• Potentially suitable habitat for this SWH category does exist within the woodlands on the Subject Property and adjacent lands. • No indicator species were observed on the Subject Property or adjacent lands during 2021 surveys. • A Cooper's Hawk nest was noted in the adjacent Cultural Plantation (ELC Unit 9) by Dance Environmental in 2013; however, nests have not been observed in subsequent years and surveys.	**NO**	**Possible —** Woodland only
Turtle Nesting Areas Midland Painted Turtle Northern Map Turtle Snapping Turtle	Suitable Habitat • 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	Subject Property • Minimal suitable habitat on Subject Property and adjacent lands. Field work conducted around the two artificial ponds on the Subject Property did not result in any evidence of turtle nesting in this area.	**NO**	**Possible** — Bronte Creek banks only

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
	• Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used Suggested Criteria Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting • 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	• One Midland Painted Turtle (*Chrysemys picta marginata*) was observed in 2015 by Dance Environmental. No other turtles have been observed. • Since the indicator species occurred in small numbers, the Subject Property is not considered potential SWH. Adjacent Lands • If sandy alluvial deposits are present at the base of the Bronte Creek Valley, suitable habitat may be present on adjacent lands.		
Seeps and Springs Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Suitable Habitat • Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system (could contain a seep or spring - areas where ground water comes to the surface) • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species • The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat Suggested Criteria Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH • The area of an ELC forest ecosite containing the seeps/springs is the SWH	No natural springs are present on the Subject Property, and none are known to occur in the adjacent lands. Seeps have been observed on the adjacent lands. ELC Unit 12 (Bronte Creek Valley) • Three seeps were identified around lower portions of the Bronte Creek Tributary (BCT-1) and adjacent valley slope. One seep was observed in mid-slope, west of the BCT-1. A second seep was observed on the alluvial fan at the base of BCT-1. A third, major seep was observed in the watershed east of BCT-1, and flowing into Bronte Creek by a separate drainage feature at the limit of the Study Area. • DS Consultants have noted the presence of a major sand aquifer that naturally discharges along the Bronte Creek Valley. DS Consultants have noted in their Hydrogeolocial Investigation report, dated March 2023, that these seeps are connected to a regionally expansive sand unit. Artificial Ponds • The ponds are not within forested areas and are therefore not SWH • Iron staining observed at the ponds on the Subject Property is consistent with shallow interflow (DS Consultants 2023b). • The *Significant Wildlife Technical Guide – Appendix Q* (OMNR 2000) notes that seeps or springs found in relatively undisturbed areas are generally more significant than those found in areas disturbed by human activities. • For the reasons noted above, it is Beacon's opinion that they should not be considered as SWH for seeps or springs.	**NO**	**Confirmed Seeps** — ELC Unit 12
Amphibian Breeding Habitat (Woodland) Eastern Newt Blue-spotted Salamander	Suitable Habitat • Presence of a wetland, pond, or woodland pool within or adjacent (within 120m) to a woodland (no minimum size)	• Two artificial ponds within 120 m of a woodland are present on the Subject Property.	**NO**	**Unlikely**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	• 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 Suggested Criteria Studies confirm; • Presence of breeding population of 1 or more of the listed salamander species or 2 or more of the listed frog species with at least 20 individuals (adults, juveniles, eggs/larval masses) or 2 or more of the listed frog species with Call Level Codes of 3	• No significant breeding populations (call codes of 3, or more than 20 individuals observed) have been noted on or adjacent to the Subject Property.		
Amphibian Breeding Habitat (Wetland) 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	Suitable Habitat • Wetlands >500 m^2 (about 25 m 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. Suggested Criteria Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog or toad species and with at least 20 individuals (adults, juveniles, eggs/larval masses) or 2 or more of the listed frog species with Call Level Codes of 3 • The ELC ecosite wetland area and the shoreline are the SWH	• Two artificial ponds are associated with the Subject Property. • No significant breeding populations (call codes of 3. or more than 20 individuals observed) have been noted on or adjacent to the Subject Property.	**NO**	**Unlikely**
Woodland Area-Sensitive Bird Breeding Habitat 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 Pileated Woodpecker Cerulean Warbler Canada Warbler	Suitable Habitat • Habitats where interior forest breeding birds are breeding • Typically large mature (>60 yrs old) forest stands or woodlots >30 ha • Interior forest habitat is at least 200 m from forest edge habitat Suggested Criteria Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH	• Potentially suitable habitat is present on the Subject Property or adjacent lands. • No SWH indicator species were noted during breeding bird surveys in 2021. Field studies for adjacent lands in 2012 noted the presence of one indicator species, Scarlet Tanager (*Piranga olivacea*). Since these species were noted in small numbers, the Subject Property and adjacent lands are not considered potential SWH. • The Phase 2 EIS for the Merton Tertiary Plan identified records of area-sensitive species in the Fourteen Mile Creek valley and the forested portions of the Bronte Creek valleylands as candidate SWH.	**NO**	**Candidate SWH** as per the Merton Tertiary Plan
Habitat for Species of Conservation Concern				
Marsh Bird Breeding Habitat American Bittern Virginia Rail Sora Common Moorhen American Coot	Suitable Habitat • Nesting occurs in wetlands • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present	• Negligible marsh habitat is present in Subject Property and adjacent lands. • No SWH indicator species were noted during breeding bird surveys in 2021. Previous field studies for the Subject Property and adjacent lands did not note the presence of indicator species. As no indicator species	**NO**	**Unlikely**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan Black Tern Yellow Rail	• 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 Suggested Criteria Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species • Note: any wetland with breeding of 1 or more Trumpeter Swans, Black Terns or Yellow Rail is SWH • Area of the ELC ecosite is the SWH	have been noted, the Subject Property and adjacent lands are not considered potential SWH.		
Open Country Bird Breeding Habitat Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Short-eared Owl	Suitable Habitat • Large grassland areas (includes natural and cultural fields and meadows) >30 ha • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years) • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species Suggested Criteria Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas	Subject Property • The Subject Property does not support significant communities of grassland birds nor grassland species. Adjacent Lands • Bronte Creek Provincial Park includes old field and prairie restoration areas that may be suitable habitat. • Savannah Sparrow (*Passerculus sandwichensis*) was the only indicator species recorded breeding on the adjacent Bronte Creek Provincial Park (BCPP) lands in 2013 by Dance Environmental. Further studies on BCPP lands would be required to confirm.	**NO**	**Possible** — Within meadow/prairie only
Shrub/Early Successional Bird Breeding Habitat <u>Indicator Species</u>: Brown Thrasher Clay-coloured Sparrow <u>Common Species:</u> Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher <u>Special Concern:</u> Yellow-breasted Chat Golden-winged Warbler	Suitable Habitat • Large natural field areas succeeding to shrub and thicket habitats >10ha[clxiv] in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years) • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Suggested Criteria Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat • The area of the SWH is the contiguous ELC ecosite field/thicket area	• No shrub/thicket habitat present in Subject Property and adjacent lands. • No indicator species have been recorded on the Subject Property or adjacent lands. Due to minimal habitat and lack of indicator species, it is not considered potential SWH.	**NO**	**Unlikely**
Terrestrial Crayfish Chimney or Digger Crayfish (*Fallicambarus fodiens*)	Suitable Habitat • Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish	• No suitable habitat is limited to the artificial ponds on the Subject Property. No suitable habitat was observed on adjacent lands.	**NO**	**NO**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
Devil Crawfish or Meadow Crayfish (*Cambarus diogenes*)	• 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 Suggested Criteria Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites • Area of ELC Ecosite polygon is the SWH	• No Terrestrial Crayfish were observed during targeted surveys be Dance on the Subject Property. Therefore, this site is not considered to be potential SWH.		
Special Concern and Rare Wildlife Species	• All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species • 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 Suggested Criteria Studies confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable • Habitat form and function needs to be assessed from the assessment of ELC vegetation types and an area of significant habitat that protects the rare or special concern species identified • 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)	Woodland (Subject Property and adjacent BCPP lands) • Eastern Wood-pewee (*Contopus virens*) — Special Concern — observed in 2012, 2014, 2015, 2021 • Wood Thrush (*Hylocichla mustelina*) — Special Concern — observed in 2012 Open Meadow (Adjacent BCPP lands) • Monarch (*Danaus plexippus*) — Special Concern — observed on the Subject Property in 2021; however, suitable habitat is assumed to be present in the old field on the adjacent Bronte Creek Provincial Park. • Barn Swallow (*Hirundo rustica*) — Special Concern — observed over adjacent Bronte Creek Provincial Park and larger pond on Subject Lands; SWH is deemed to be Bronte Creek Provincial Park. Due to the nearby open water in the Bronte Creek valley, the pond is not deemed to be necessary to ensure a viable and sustainable population, in the sense of the SWHTG, Appendix Q. Other • Double-striped Bluet (*Enallagma basidens*) was evaluated in **Table D-2** below, and their associated habitat was deemed to be not significant. • Northern Myotis (*Myotis septentrionalis*), listed as S3, was observed on the Subject Property; however, this species cannot be considered SWH as it is listed as Endangered under the *Endangered Species Act*.	**Possible** — Forest only	**Likely** — Woodland and Old Field on BCPP lands
Animal Movement Corridors				
Amphibian Movement Corridors Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog	• Animal movement corridors should only be identified as SWH where a confirmed or Candidate SWH has been identified by MNRF or the planning authority • Movement corridors between breeding habitat and summer habitat • Movement corridors must be considered when amphibian breeding habitat is confirmed as SWH • Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites	• Amphibian breeding habitat has not been confirmed by MNRF or the planning authority on the Subject Property or adjacent lands. • No Amphibian Breeding Habitat has been identified on the Subject Property or adjacent lands.	**NO**	**NO**

Wildlife Habitat Category and Associated Species[1]	SWH Criteria for Ecoregion 7E[1]	Applicability of SWH Criteria	Potential SWH (Subject Property)	Potential SWH (Adjacent Lands)[2]
Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	• 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 be at least 15 m of vegetation on both sides of waterway or be up to 200 m wide of woodland habitat and with gaps <20 m • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat			

[1.] Adapted from the listed species and habitat criteria provided in the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF 2015) but updated to reflect any relevant changes in species status. For example, Tri-coloured Bat (*Perimyotis subflavus*) is now listed as Threatened so needs to be addressed under the *Endangered Species Act* and not under SWH.

[2.] Due to constraints of private property access and hazards of working around slopes, field studies in adjacent lands were limited in scope. Screening for SWH on adjacent lands has therefore been conducted with a precautionary approach.

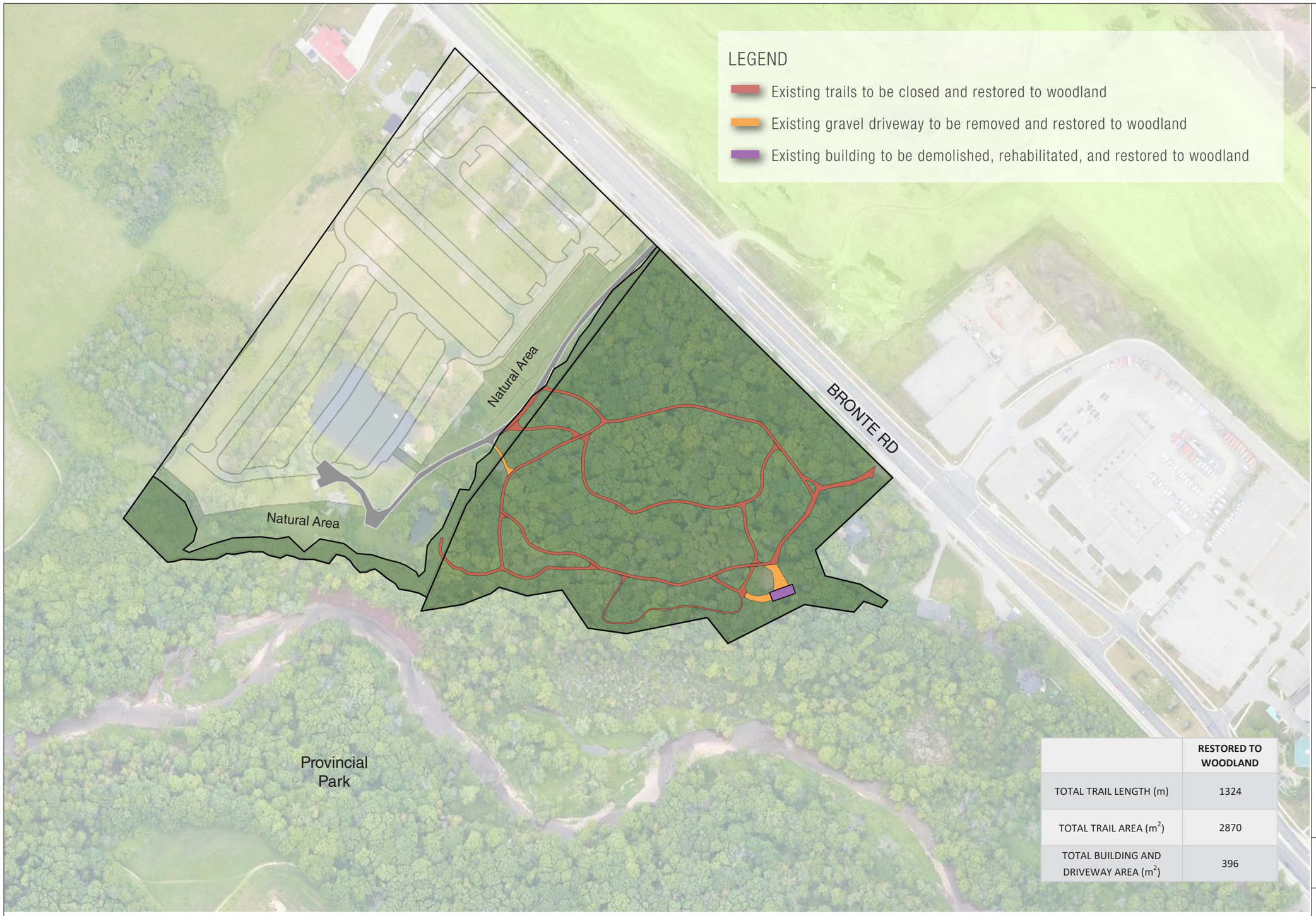
Table E2. Evaluation of Presence of Double-Striped Bluet (*Enallagma basidens*) as per SWHTG, Appendix Q

Criteria for Identification of Species/Habitats of Conservation Concern	Suggested Guidelines for Evaluation of Habitats of Species of Conservation Concern	Applicability of SWH Guidelines
Degree of rarity of species found at site	• Habitats of the rarest species are more significant than those of less rare species. For example, habitats for species ranked S1 and S2 should be considered more significant than habitats for species ranked S3. Species ranked as vulnerable by the OMNR should also be considered significant. • Less rare species and their habitats in the planning area may be deemed species of conservation concern by the municipality based on such factors as the number of known occurrences, total extent of remaining habitat, degree of threat or risk to habitat, and/or local interest in a particular species. • If a species' habitat is to be protected, sufficient area (based on the species' known requirements) should be retained to ensure a viable and sustainable population.	• Subnationally listed as S3 • Not deemed a species of conservation concern by the Town of Oakville or Region of Halton • Existing habitat at the larger pond is insufficient for population viability, due to predation by the abundance of large predatory fish. The smaller pond is poor habitat as few odonates were observed there.
Documented significant decline in a species and/or its critical habitat	• The habitat for species experiencing the greatest declines is most significant. • The habitat for declining species that has the lowest representation in the planning area is more significant. • Those habitats that provide the best opportunity for the long-term sustainability of the declining species are most significant (e.g., large well-protected sites; sites that best meet the species' habitat requirements; sites with good connections to other similar habitats).	• Little is known about both the population trajectory in North America and the distribution within the Region. • As described above, existing habitat on the Subject Property is insufficient for population viability.
Species whose range is solely or primarily found in Ontario (i.e., provincial responsibility)	• Habitat for those species with the poorest representation within the planning area is more significant. • These species and their habitats are significant even if well represented in the planning area, due to high provincial responsibility for their protection. • Those habitats that provide the best opportunities for the long-term sustainability of the target species are most significant (e.g., large well protected sites; sites that best meet the species' habitat requirements; sites with good connections to other similar habitats).	• Ontario is the northern range limit of the species. This species is more abundant in the United States, and ranked Apparently Secure (S4) to Secure (S5) from Pennsylvania to North Carolina • As such, there is little provincial responsibility for this species • As described above, existing habitat on the Subject Property is insufficient for population viability.
Condition of existing habitat at site	• Sites that provide habitat that best meets the survival requirements of the target species and that also include a natural buffer zone are most significant (i.e. most likely to sustain species/population over the long term). • Sites that contain the fewest non-native species of potential threat to the target species are significant. • Undisturbed or least-disturbed habitats (e.g., no/few deleterious impacts from roads, human activities) are significant. • Sites capable of producing a large number of individuals of a single species of conservation concern are significant. • Highly diverse sites that support one or more species of conservation concern are most significant.	• As described above, the large pond (where most individuals were observed) contains an abundance of predatory fish, limiting the viability of this population. • No buffer is present around the large pond; the pond is surrounded by lawn. • Notwithstanding that the pond is artificial, it is frequently disturbed by human recreational use and alteration, including fish stocking, fishing, ornamental plants, etc.

Criteria for Identification of Species/Habitats of Conservation Concern	Suggested Guidelines for Evaluation of Habitats of Species of Conservation Concern	Applicability of SWH Guidelines
		• Only seven (7) individuals were observed on the Subject Property • No other species of conservation concern were associated with the ponds on the Subject Property.
Size of species population at site	• Habitats supporting large populations of a several species of conservation concern are most significant. • Habitat supporting large populations of a single species is significant.	• No other species of conservation concern were associated with the ponds on the Subject Property. • Only seven (7) individuals were observed on the Subject Property
Size and location of habitat	• Large sites supporting large populations of several species of conservation concern are most significant. • Large sites are generally more significant than most comparable but smaller sites. • Sites large enough to ensure long-term support and viability of species of conservation concern are significant. • Sites with large areas of suitable habitat that are also connected to other potentially suitable habitat and/or natural areas are most significant.	• The pond is relatively small, supporting only one species of conservation concern. • As described above, the large pond (where most individuals were observed) contains an abundance of predatory fish, limiting the viability of this population. • Potentially suitable habitat is approximately 1 km away at the Bronte Green wildlife pond or the Deerfield Golf Club ponds.
Potential for long-term protection of the habitat	• Habitats that provide the best opportunity for long-term protection are usually more significant than similar habitats with little opportunity for protection or facing an uncertain future due to potential threats (e.g., habitat found in a large natural area vs. an isolated site close to an expanding residential development). • Habitats threatened with degradation or loss are more significant than similar, but currently unthreatened habitats, if they can be protected. • Habitats of species currently experiencing severe population declines in Ontario (e.g., grassland bird species) due to habitat loss are most significant. • Habitats of species currently experiencing significant population declines in the municipality are significant.	• As noted above, the pond is not conducive to population viability and is frequently disturbed by human use. This habitat is neither contiguous nor consistent with the habitats of Bronte Creek Provincial Park. • As noted above, the population trend is unknown.
Representation of species/habitat within the municipality	• Poorly represented habitats for species of conservation concern are significant. • Habitats that could be lost or severely degraded and cannot be replaced by similar habitats in the planning area, are highly significant.	• This species is under sampled within the municipality and its abundance is poorly studied. • Similarly, the habitat of this species is poorly understood within the municipality.
Evidence of use of the habitat	• Sites with documented traditional use by species are most significant.	• Not observed during previous odonate surveys between 2012 and 2015 by Dance Environmental.
Species of particular interest to the planning authority (e.g., the CAC may recommend certain species such as indicator species)	• Sites providing the best examples of habitat that will ensure the long-term sustainability of the species are significant.	• Not deemed a species of conservation concern by the Town of Oakville or Region of Halton • As noted above, the existing ponds are artificial, highly disturbed, and not conducive to population viability.

Appendix F

Conceptual Trails and Woodland Restoration Plan



	RESTORED TO WOODLAND
TOTAL TRAIL LENGTH (m)	1324
TOTAL TRAIL AREA (m^2)	2870
TOTAL BUILDING AND DRIVEWAY AREA (m^2)	396

CONCEPTUAL TRAILS AND WOODLAND RESTORATION PLAN

BRONTE RIVER LP

NORTH

NAK design strategies
421 RONCESVALLES AVENUE, TORONTO, ON M6R 2N1 CANADA
T 416.340.8700 F 416.340.7100 NAKDESIGNSTRATEGIES.COM

DATE | 03.31.2023 | PROJECT | 20-230

A-01

	RESTORED TO WOODLAND	REPURPOSED AS TRAIL
TOTAL TRAIL LENGTH (m)	660	664
TOTAL TRAIL AREA (m^2)	1297	1573
TOTAL BUILDING AND DRIVEWAY AREA (m^2)	396	0

CONCEPTUAL TRAILS AND WOODLAND RESTORATION PLAN

BRONTE RIVER LP

NORTH

NAK design strategies
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T 416.340.8700 F 416.340.7100 NAKDESIGNSTRATEGIES.COM

DATE | 03.31.2023

PROJECT | 20-230

A-02

Appendix G

Field Sheets

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Enns		POLYGON:
	SURVEYOR(S): DW	DATE: June 15 2021	UTME
	START	END	UTMZ	UTMN

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☑ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☑ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN	☐ BOTTOMLAND		☐ FLOATING-LVD	☐ RIVER
	☐ ACIDIC BEDRK	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK	☑ TABLELAND		☐ LICHEN	☐ SWAMP
SITE		☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
☐ OPEN WATER		☐ CLIFF		☑ DECIDUOUS	☐ BOG
☐ SHALLOW WATER		☐ TALUS		☐ CONIFEROUS	☐ BARREN
☑ SURFICIAL DEP.		☐ CREVICE / CAVE	**COVER**	☐ MIXED	☐ MEADOW
☐ BEDROCK		☐ ALVAR	☐ OPEN		☐ PRAIRIE
		☐ ROCKLAND	☐ SHRUB		☐ THICKET
		☐ BEACH / BAR	☑ TREED		☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☑ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	4	Acesasa Fagygra Quemacr = Prusero
2 SUB-CANOPY	3	3	Acesasa = Fagygra
3 UNDERSTOREY			
4 GRD. LAYER	5	3	Alpet carlat, acesasa solflex

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT≤2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m
CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	A < 10	A 10 - 24	A 25 - 50	O > 50	
STANDING SNAGS:	O < 10	O 10 - 24	O 25 - 50	R > 50	
DEADFALL / LOGS:	A < 10	O 10 - 24	O 25 - 50	R > 50	

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE	PIONEER	YOUNG	MID-AGE	☑ MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: Forest	CODE: FO
COMMUNITY SERIES: Deciduous Forest	CODE: FOD
ECOSITE: Dry Fresh Sugar Maple FOD	CODE: FOD5
VEGETATION TYPE: Dry-Fresh Sugar Maple Beech FOD	CODE: FOD5-2
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Acesasa					
Betpapy					
Fagygra					
Prusero					
Quemacr					
Quealba					
Podpelt					
Dryinte					
Oryaspe					
Polalsy					
Vibacer					
Colingsnia					
Maicana					
Smiherb					
Vitaest					
laparde					
hepperf					
danspin					
woodcush					
ceanothus					
Phrvult					
rosemult					
rubocc					
frambesia					
symp aspe					
ruballe					

26 (bracketed: Vitaest – ceanothus)

SPECIES CODE	LAYER 1	2	3	4	COLL.
Alpeti					
radauri					
vulleng					
gerrobe					
amyhia					
Solcaes					
carlaxi					
Vicsoro					
crlyte					
antvirg					
leevirg					
chacanj					
Ropmit					
mairace					
carrose					
dryrai					
octpaer					
caugyno					
lapcanan					
solflex					
vivmuri					
aranudi					
actrubr					
agrgryp					
astlaeve					
mat stru					
Solcaes					

caraboor

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Enns		POLYGON: 2	
	SURVEYOR(S): DW	DATE: June 14 2021		UTME
	START	END	UTMZ	UTMN

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☑ MINERAL SOIL ☐ PARENT MIN ☐ ACIDIC BEDRK ☐ BASIC BEDRK ☐ CARB. BEDRK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☑ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☑ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☑ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☑ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☑ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☑ TREED		

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	Quealba Acesacc Querubr
2	SUB-CANOPY	3	3	Acesacc
3	UNDERSTOREY	4	2	Pruvirg Vibacer Cornrug Hamvirg
4	GRD. LAYER	5	3	Mairace Carpens Solflex

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50	O	> 50
STANDING SNAGS:	O	< 10	O	10 - 24	O	25 - 50	R	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	R	25 - 50	R	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE	☐ PIONEER	☐ YOUNG	☐ MID-AGE	☑ MATURE	☐ OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: Forest	CODE:	FO
COMMUNITY SERIES: Deciduous Forest	CODE:	FOD
ECOSITE: Dry-Fresh Sugar Maple FOD	CODE:	FOD5
VEGETATION TYPE: Dry-Fresh Sugar Maple-Oak FOD	CODE:	FOD5-3
INCLUSION	CODE:	
COMPLEX	CODE:	

Notes:

ELC PLANT SPECIES LIST	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
Quealba						Epipulch					
Acesacc						Mairace					
Carovat						Thadioi					
Querubr						Agrcana					
Tilamer						Aranudi					
Prunser						Carpens					
Pinstro						Ostvirg					
						yellow pimpernel					
						Arabis canadensis					
						Dacglom					
						Galbore					
						Solflex					
						Polpube					
Galapar						Nabalbu					
Hepacuti						Carplat					
Celscan						Eurmacr					
Anequin						Potsimp					
Alltric						Solcaes					
Prunvirg						Maicana					
bluebead lily						Astcord					
Rubodor						Amrosl					
Arelnu						Glystri					
Loncana						Lupperen					
Londioi						Hepnob					
Vibacer						Ostrubr					
Cornrug						Crataeg					
Hamvirg						Maistel					
						Geumacr					

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Farms			POLYGON: 3	
	SURVEYOR(S): DW		DATE: Jun 15 2021		UTME
	START	END		UTMZ	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☑ WETLAND	☑ MINERAL SOIL	☐ RIVERINE	☑ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN	☐ BOTTOMLAND		☐ FLOATING-LVD	☐ RIVER
	☐ ACIDIC BEDRK	☐ TERRACE		☑ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK	☐ VALLEY SLOPE		☐ FORB	☑ MARSH
	☐ CARB. BEDRK	☐ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		☐ DECIDUOUS	☐ BOG
		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
SITE		☐ ALVAR	**COVER**		☐ PRAIRIE
☐ OPEN WATER		☐ ROCKLAND	☑ OPEN		☐ THICKET
☐ SHALLOW WATER		☐ BEACH / BAR	☐ SHRUB		☐ SAVANNAH
☑ SURFICIAL DEP.		☐ SAND DUNE	☐ TREED		☐ WOODLAND
☐ BEDROCK		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY			
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER	3	4	phragmit [illegible] [illegible] [illegible]

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE .		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	Marsh	CODE:	MA
COMMUNITY SERIES:	Meadow Marsh	CODE:	MAM
ECOSITE:	Mineral Meadow Marsh	CODE:	MAM2
VEGETATION TYPE:	"	CODE:	MAM2
INCLUSION		CODE:	
COMPLEX		CODE:	

Notes:

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
phragmit											
[illegible]											
[illegible]											
[illegible]											
[illegible]											
cardamine											
[illegible]											

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Enns		POLYGON: 9	
SURVEYOR(S): DW	DATE: Jun 15 2021		UTME
START	END	UTMZ	UTMN

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☑ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN ☐ ACIDIC BEDRK ☐ BASIC BEDRK ☐ CARB. BEDRK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☑ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☑ CULTURAL	☐ PLANKTON ☑ SUBMERGED ☑ FLOATING-LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☑ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☑ SURFICIAL DEP. ☐ BEDROCK			☑ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY			
2 SUB-CANOPY		1	typlati phraust mcaque
3 UNDERSTOREY		3	lemmno
4 GRD. LAYER		3	Pot-sp

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT 2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:				BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: Shallow Aquatic	CODE: SA
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Duckweed Mixed Shallow Aquatic	CODE: SAM1-2
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
						lemmno					
						sgeoqvng					
						Pot-sp					
						phraust					
						dream					
						typlati					

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Harms		POLYGON: 5	
SURVEYOR(S): DW	DATE: June 15 2021		UTME
START	END	UTMZ	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☑ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN ☐ ACIDIC BEDRK ☐ BASIC BEDRK ☐ CARB. BEDRK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☑ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☑ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE	COVER
☑ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK	☑ OPEN ☐ SHRUB ☐ TREED

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY			
2 SUB-CANOPY		1	typangu poucordcan spp jun sp
3 UNDERSTOREY		1	nymodor
4 GRD. LAYER		2	milfoil

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:				BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Open Water Aquatic	CODE: OAO
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
						typangu					
						milfoil					
						nymodor					
						carlhey?					
						ascsyr					
						pickerelweed					
						leerpora?					
						Scirtab?					
						junefu					
						corvilly?					
						junduddle?					
myrgale											

Cornus white path

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Enns		POLYGON: 6	
	SURVEYOR(S): DW	DATE: Jun 15 2021		UTME
	START	END	UTMZ	UTMN

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN ☐ ACIDIC BEDRK ☐ BASIC BEDRK ☐ CARB. BEDRK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	Picabie >> Pinnig Acesac
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER	5	2	allpeti cirlute [illegible] solalti

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:								BA:
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:	
COMMUNITY SERIES:	CODE:	
ECOSITE:	CODE:	
VEGETATION TYPE: Hedgerow	CODE:	HE
INCLUSION	CODE:	
COMPLEX	CODE:	

Notes:

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
picabie						allpeti					
acesac						allpeti					
pinnig						vitrip					
jugcine						parqui					
						cirlute					
						juguia					
						leomiB					
						dacglo					
						solalti					

3211

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: [illegible]		POLYGON: 7	
	SURVEYOR(S): [illegible]	DATE: Jun 15 2021		UTME
	START	END	UTMZ	UTMN

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN ☐ ACIDIC BEDRK ☐ BASIC BEDRK ☐ CARB. BEDRK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT≤2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: Anthropogenic	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE: ANT
COMPLEX	CODE:

Notes:

ELC PLANT SPECIES LIST

ELC PLANT SPECIES LIST	
	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
[illegible]						[illegible]					
						[illegible]					

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Enns		POLYGON: 9	
SURVEYOR(S)	DATE Sep 30 2022		UTME
START	END	UTMZ	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
✓ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ✓ MINERAL SOIL ☐ PARENT MIN ☐ ACIDIC BEDRK ☐ BASIC BEDRK ☐ CARB. BEDRK	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ✓ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ✓ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ✓ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ✓ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WATER ✓ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ✓ TREED

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	Thuocci Picabie Fraamer Jugnig
2	SUB-CANOPY	2	3	Fraamer
3	UNDERSTOREY	4	2	rhoatt vitripa rubzoca rubidme
4	GRD. LAYER	5	2	allpeti geuurb parinse solalti

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:					BA:			
SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	O	25 - 50	R	> 50
STANDING SNAGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:	R	< 10	R	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	PIONEER	YOUNG	✓ MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: Cultural	CODE: CU
COMMUNITY SERIES: Cultural Plantation	CODE: CUP
ECOSITE: Mixed Plantation	CODE: CUP2
VEGETATION TYPE: Mixed Plantation	CODE: CUP2
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC
PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

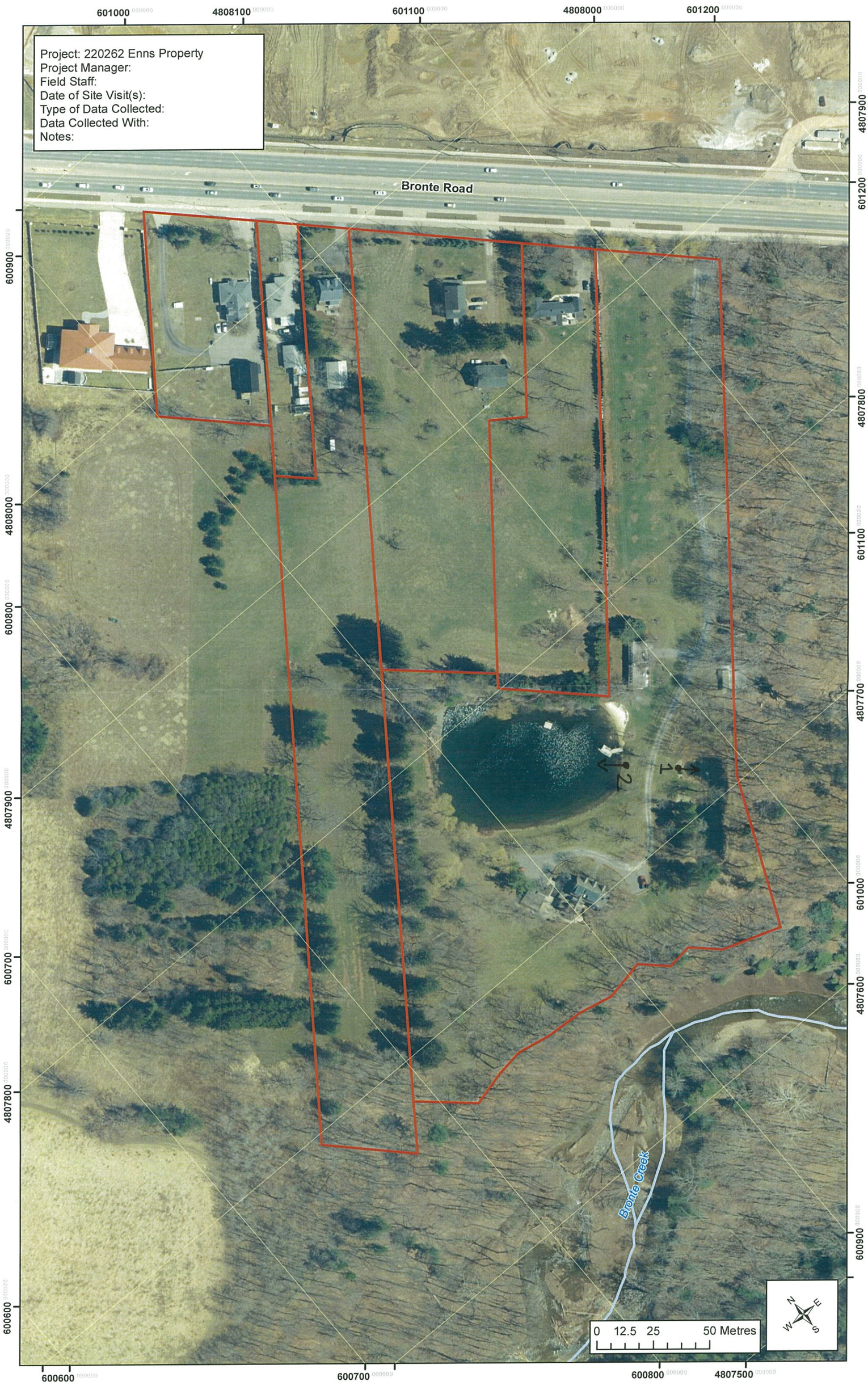
LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Jugnig					
Thuocci					
Fraamer					
Pinstro					
Popdelt					
Picabies					
Thuocci					
Quemacr					
Picglau					
rubidme					
rhoatt					
vitripa					
rubocc					

SPECIES CODE	LAYER 1	2	3	4	COLL.
allpeti					
leocard					
geuurb					
parinse					
solalti					
chemaju					

GC/DU. April 5 2021 Amphib Survey Rnd 1



Amphibian Data Form

BEACON ENVIRONMENTAL

Visit Information

Project Name: Ens property
Project #:
Observer Name: GC/DM
Visit #: 1
Date: April 5/2021
Cloud Cover (%): 30%.
Temperature (°C): 8
Beaufort Wind Scale (0-6): 0
Precipitation (check one): ☒ None/Dry ☐ Damp/Haze/Fog ☐ Drizzle ☐ Rain

Call Level Codes

Code 1: Calls not simultaneous, number of individuals can be accurately counted.

Code 2: Some calls simultaneous, number of individuals can be reliably estimated.

Code 3: Full chorus, call continuous and overlapping, number of individuals cannot be reliably estimated.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

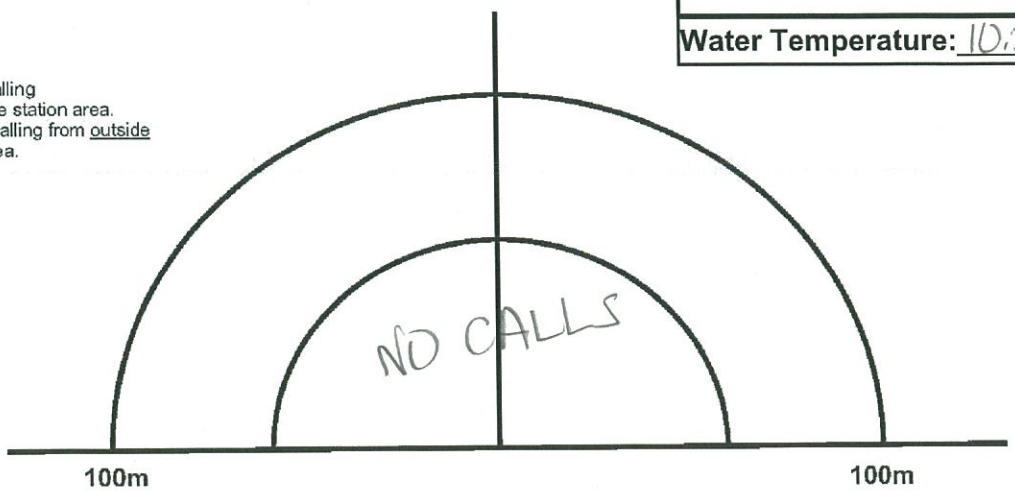
Station 1

Station Start Time (24 hr): 10:00

Background Noise Code (1-4): 3 pump

GPS Coordinates: see map

Water Temperature: 10.3

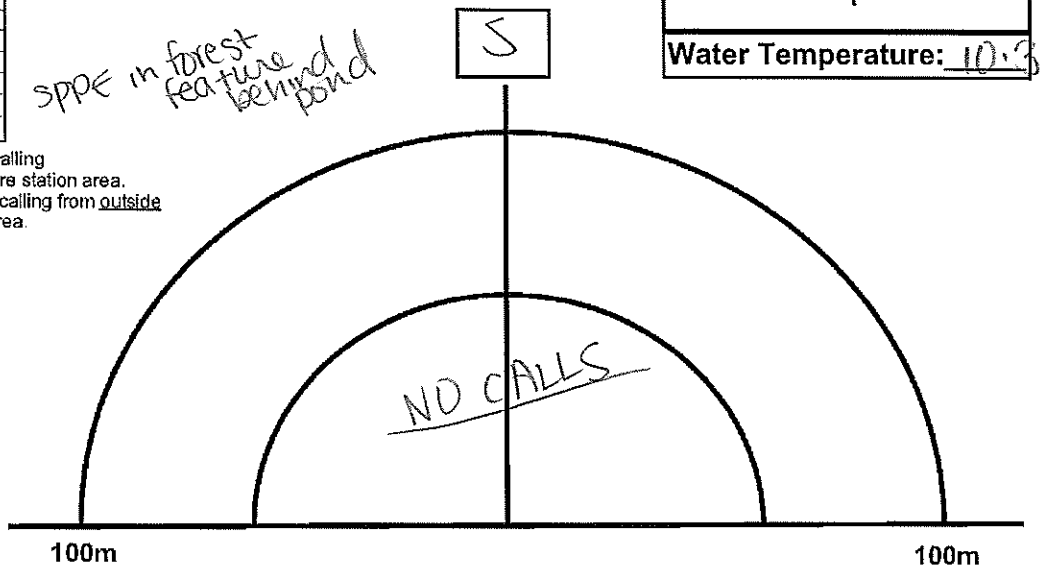


Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station 2

Station Start Time (24 hr):	10:09
Background Noise Code (1-4):	2
GPS Coordinates:	see map
Water Temperature:	10.3



Amphibian Species Codes

Species	Code
American Toad	AMTO
Northern (Blanchard's) Cricket Frog	BCFR
Bullfrog	BULL
Chorus Frog	CHFR
Cope's (Diploid) Gray Treefrog	CGTR
Fowler's Toad	FOTO
Gray (Tetraploid) Treefrog	GRTR
Green Frog	GRFR
Mink Frog	MIFR
Northern Leopard Frog	NLFR
Pickerel Frog	PIFR
Spring Peeper	SPPE
Wood Frog	WOFR

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)

24 Hour Time

12 Hour	*24 Hour*	*12 Hour*	*24 Hour*
7:00 PM	1900	10:00 PM	2200
8:00 PM	2000	11:00 PM	2300
9:00 PM	2100	12:00 PM	2400

Beaufort Wind Scale

Number	Wind Speed		Indicators
	Km/h	Mph	
0	0-2	0-1	**Calm**, smoke rises vertically
1	3-5	2-3	**Light air movement**, smoke drifts
2	6-11	4-7	**Slight breeze**, wind felt on face
3	12-19	8-12	**Gentle breeze**, leaves and small twigs in constant motion
4*	20-30	13-18	**Moderate breeze**, small branches are moving, raises dust and loose paper

* Winds over Beaufort 3 are unacceptable for amphibian surveys.

Amphibian Data Form

BEACON ENVIRONMENTAL

Visit Information

Project Name: ENS
Project #: 220262
Observer Name: DW/GC
Visit #: 2
Date: May 25 2021
Cloud Cover (%): 80
Temperature (°C): 26
Beaufort Wind Scale (0-6): 0
Precipitation (check one): ☑ None/Dry ☐ Damp/Haze/Fog ☐ Drizzle ☐ Rain

Call Level Codes

Code 1: Calls not simultaneous, number of individuals can be accurately counted.

Code 2: Some calls simultaneous, number of individuals can be reliably estimated.

Code 3: Full chorus, call continuous and overlapping, number of individuals cannot be reliably estimated.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

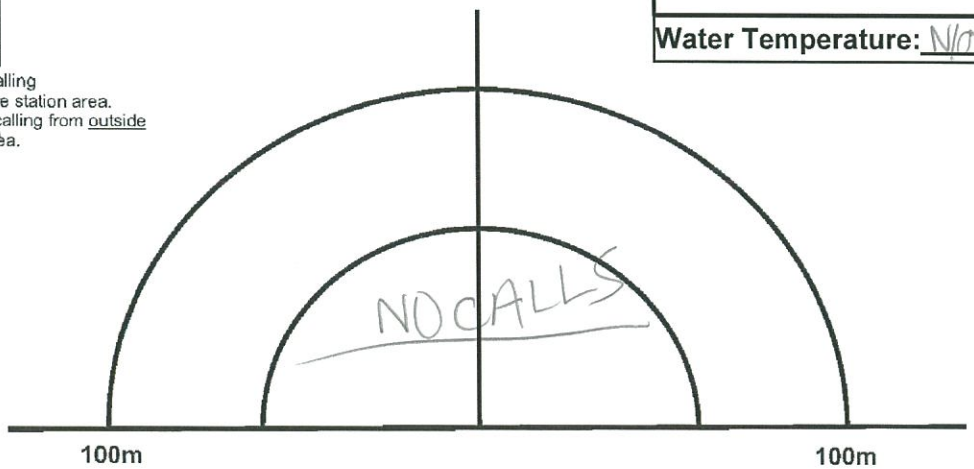
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station 1

S

Station Start Time (24 hr):	11:05
Background Noise Code (1-4):	4
GPS Coordinates:	NA
Water Temperature:	N/A

water pump

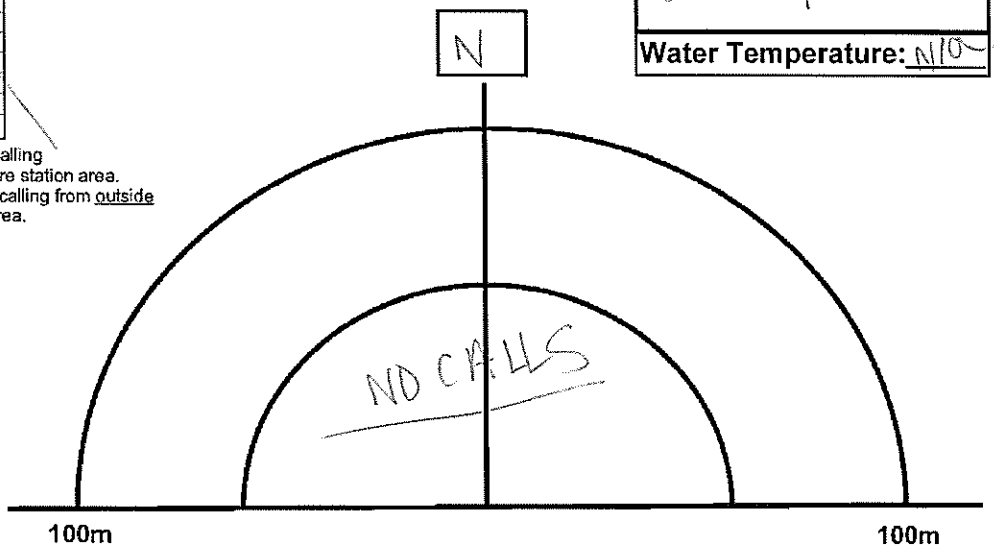


Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station 2

Station Start Time (24 hr):	11:09
Background Noise Code (1-4):	1
GPS Coordinates:	see map
Water Temperature:	N/A



Amphibian Species Codes

Species	Code
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Bullfrog	BULL
Chorus Frog	CHFR
Cope's (Diploid) Gray Treefrog	CGTR
Fowler's Toad	FOTO
Gray (Tetraploid) Treefrog	GRTR
Green Frog	GRFR
Mink Frog	MIFR
Northern Leopard Frog	NLFR
Pickerel Frog	PIFR
Spring Peeper	SPPE
Wood Frog	WOFR

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)

24 Hour Time

12 Hour	*24 Hour*	*12 Hour*	*24 Hour*
7:00 PM	1900	10:00 PM	2200
8:00 PM	2000	11:00 PM	2300
9:00 PM	2100	12:00 PM	2400

Beaufort Wind Scale

Number	Wind Speed		Indicators
	Km/h	Mph	
0	0-2	0-1	**Calm**, smoke rises vertically
1	3-5	2-3	**Light air movement**, smoke drifts
2	6-11	4-7	**Slight breeze**, wind felt on face
3	12-19	8-12	**Gentle breeze**, leaves and small twigs in constant motion
4*	20-30	13-18	**Moderate breeze**, small branches are moving, raises dust and loose paper

* Winds over Beaufort 3 are unacceptable for amphibian surveys.

Amphibian Data Form

BEACON ENVIRONMENTAL

Visit Information

Project Name: ENS
Project #: 220262
Observer Name: GB/GC
Visit #: 3
Date: June 23/21
Cloud Cover (%): 90
Temperature (°C): 20
Beaufort Wind Scale (0-6): 0
Precipitation (check one): ☑None/Dry ☐Damp/Haze/Fog ☐ Drizzle ☐Rain

Call Level Codes

Code 1: Calls not simultaneous, number of individuals can be accurately counted.

Code 2: Some calls simultaneous, number of individuals can be reliably estimated.

Code 3: Full chorus, call continuous and overlapping, number of individuals cannot be reliably estimated.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station 1

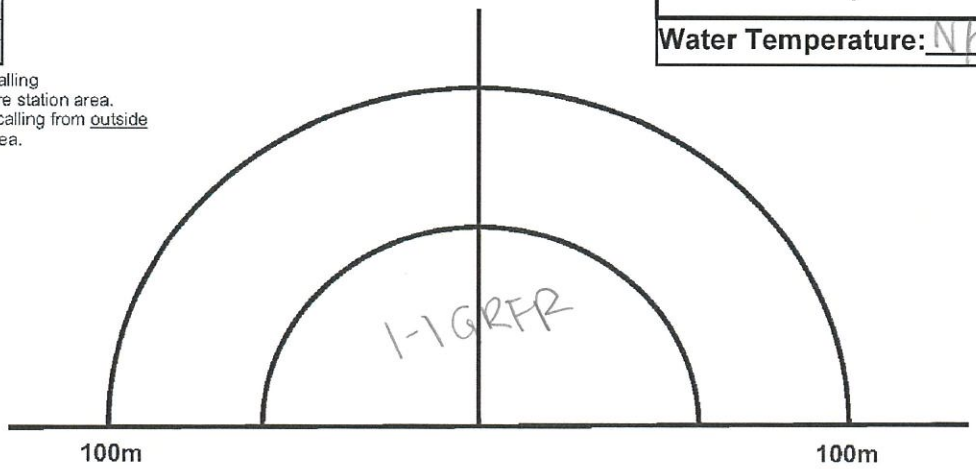
E

Station Start Time (24 hr): 11:16

Background Noise Code (1-4): 3 / pump

GPS Coordinates: see map

Water Temperature: NA

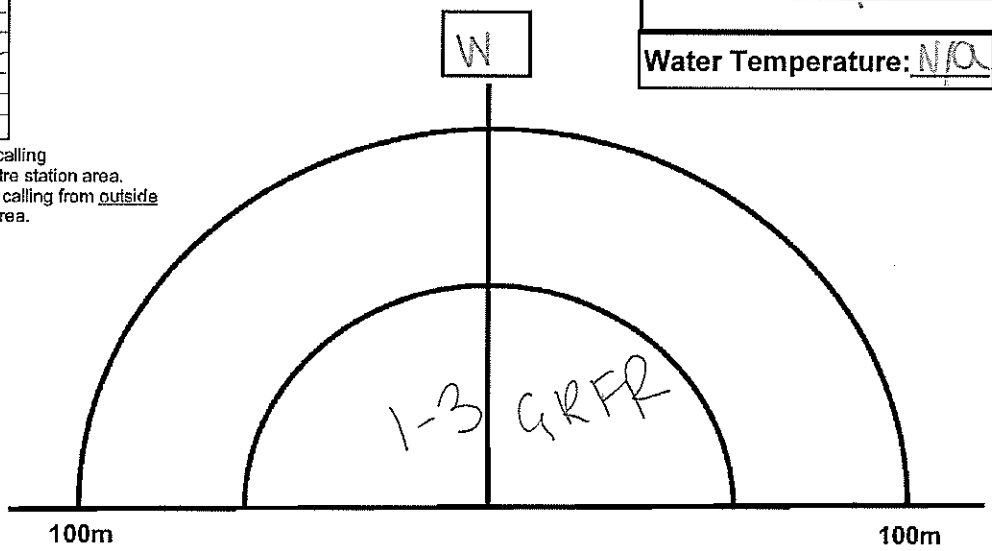


Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station 2

Station Start Time (24 hr):	11:21
Background Noise Code (1-4):	1
GPS Coordinates:	see map
Water Temperature:	N/A



Amphibian Species Codes

Species	Code
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Gray (Tetraploid) Treefrog	GRTR
Green Frog	GRFR
Mink Frog	MIFR
Northern Leopard Frog	NLFR
Pickerel Frog	PIFR
Spring Peeper	SPPE
Wood Frog	WOFR

Background Noise Codes

Index	Description
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24 Hour Time

12 Hour	24 Hour	12 Hour	24 Hour
7:00 PM	1900	10:00 PM	2200
8:00 PM	2000	11:00 PM	2300
9:00 PM	2100	12:00 PM	2400

Beaufort Wind Scale

Number	Wind Speed		Indicators
	Km/h	Mph	
0	0-2	0-1	**Calm**, smoke rises vertically
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2	6-11	4-7	**Slight breeze**, wind felt on face
3	12-19	8-12	**Gentle breeze**, leaves and small twigs in constant motion
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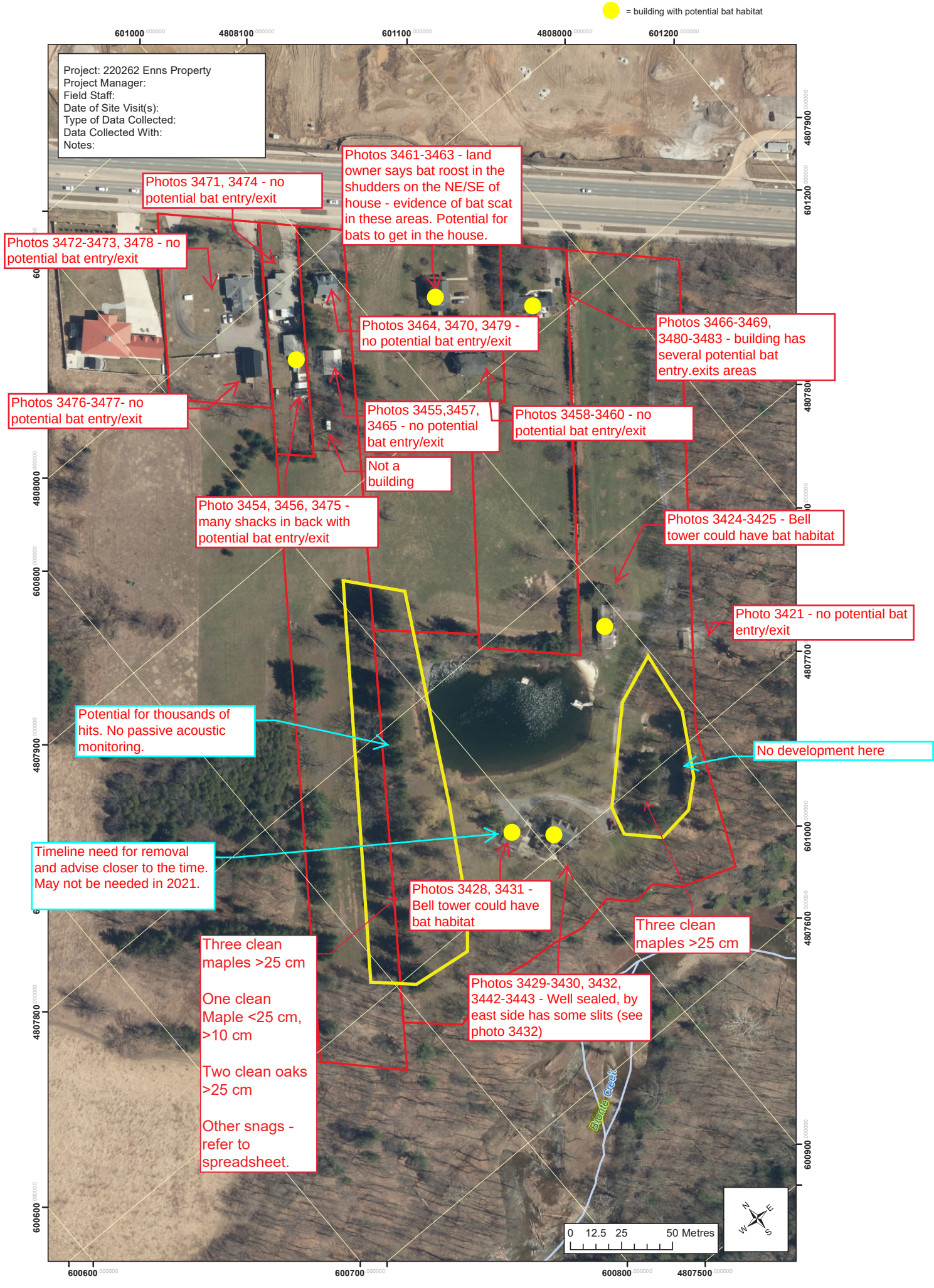

= building with potential bat habitat
Project: 220262 Enns Property
Project Manager:
Field Staff:
Date of Site Visit(s):
Type of Data Collected:
Data Collected With:
Notes:
Photos 3461-3463 - land owner says bat roost in the shudders on the NE/SE of house - evidence of bat scat in these areas. Potential for bats to get in the house.
Photos 3471, 3474 - no potential bat entry/exit
Photos 3472-3473, 3478 - no potential bat entry/exit
Photos 3464, 3470, 3479 - no potential bat entry/exit
Photos 3466-3469, 3480-3483 - building has several potential bat entry.exits areas
Photos 3476-3477- no potential bat entry/exit
Photos 3455,3457, 3465 - no potential bat entry/exit
Photos 3458-3460 - no potential bat entry/exit
Not a building
Photo 3454, 3456, 3475 - many shacks in back with potential bat entry/exit
Photos 3424-3425 - Bell tower could have bat habitat
Photo 3421 - no potential bat entry/exit
Potential for thousands of hits. No passive acoustic monitoring.
No development here
Timeline need for removal and advise closer to the time. May not be needed in 2021.
Photos 3428, 3431 - Bell tower could have bat habitat
Three clean maples >25 cm
Three clean maples >25 cm
One clean Maple <25 cm, >10 cm
Two clean oaks >25 cm
Other snags - refer to spreadsheet.
Photos 3429-3430, 3432, 3442-3443 - Well sealed, by east side has some slits (see photo 3432)
Bronte Creek
0 12.5 25 50 Metres
N E S W
601000
4808100
601100
4808000
601200
4807900
4807800
4807700
4807600
4807500
600600
600700
600800
600900

Enns Property - 220262
Bat Habitat Assessment
A. Cunningham
2:00pm - 4:00pm
5°C, CC 50%, Wind 1, no ppt

*Butternut on site tagged with blue flagging tape

Clean Maples / Oaks

East Maple >25 :
Maple >25 :
West Maple >10 :
Oak >25 :

All anthropogenic structures on property were assessed for bat habitat

Incidentals

- BCCH
- BLJA
- RWBL
- WTDE (obs)
- EBAU Flyover
- WBNU
- DEJU
- AMRO
- CEDW
- BLSQ

Breeding Bird Survey Summary Form

Surveyor Name: Geoff Carpenter Date (use letters for mos.): May 26/21

Project Name: Enns Property, Oakville Project #: 220262

Time of Survey (start and finish): 5:15 - 7:30

Weather (approx. temp., cloud cover, wind, precipitation): 75% cloud, 23°C, light breeze

Additional notes on birds (nests, uncertainties, unusual observations, habitat comments etc.) :

E. Cottontail, Gr. Squirrel

Incidental Observations

Anything welcome (mammals, herps, fish presence, insects, plants esp. unusual spp. etc.). For herps, rare plants, occurrence of fish, please also mark location on map. For herps, number observed. Thanks!

COGR	1	BHCO	1	
AMRO	4	RWBL	3	
GCFL	2 prs.	AMGO	1	
BLJA	1	SOSP	2	
NOCA	3	HOME	(with yg.) 10 birds total	
EUST	4	BADR	3	
COYE	1	RBWO	1	
BCCH	1	WBNU	1	
KILL	1	MODO	1	
HOWR	2	CAGO	[redacted] 1	

We have to keep

Breeding Bird Survey Summary Form

Surveyor Name: Geoff Carpenter Date (use letters for mos.): June 7/21

Project Name: Enns Property, Oakville Project #: 22062

Time of Survey (start and finish): 6:15 - 0845

Weather (approx. temp., cloud cover, wind, precipitation): 22°C Sunny no wind

Additional notes on birds (nests, uncertainties, unusual observations, habitat comments etc.) :

Green Frog // natural bees nest in dead White Pine

HT mole, EChip, 6or 5g

Incidental Observations

Anything welcome (mammals, herps, fish presence, insects, plants esp. unusual spp. etc.). For herps, rare plants, occurrence of fish, please also mark location on map. For herps, number observed. Thanks!

HOSP - 1-2

SOSP - 2

BLJA - 2

EWPE - 1

GCFL - 2

RWBL - 5

AMRO - 5-7

AMGO - 1

EUST - 2-3

~~[illegible]~~

CRCA - 1

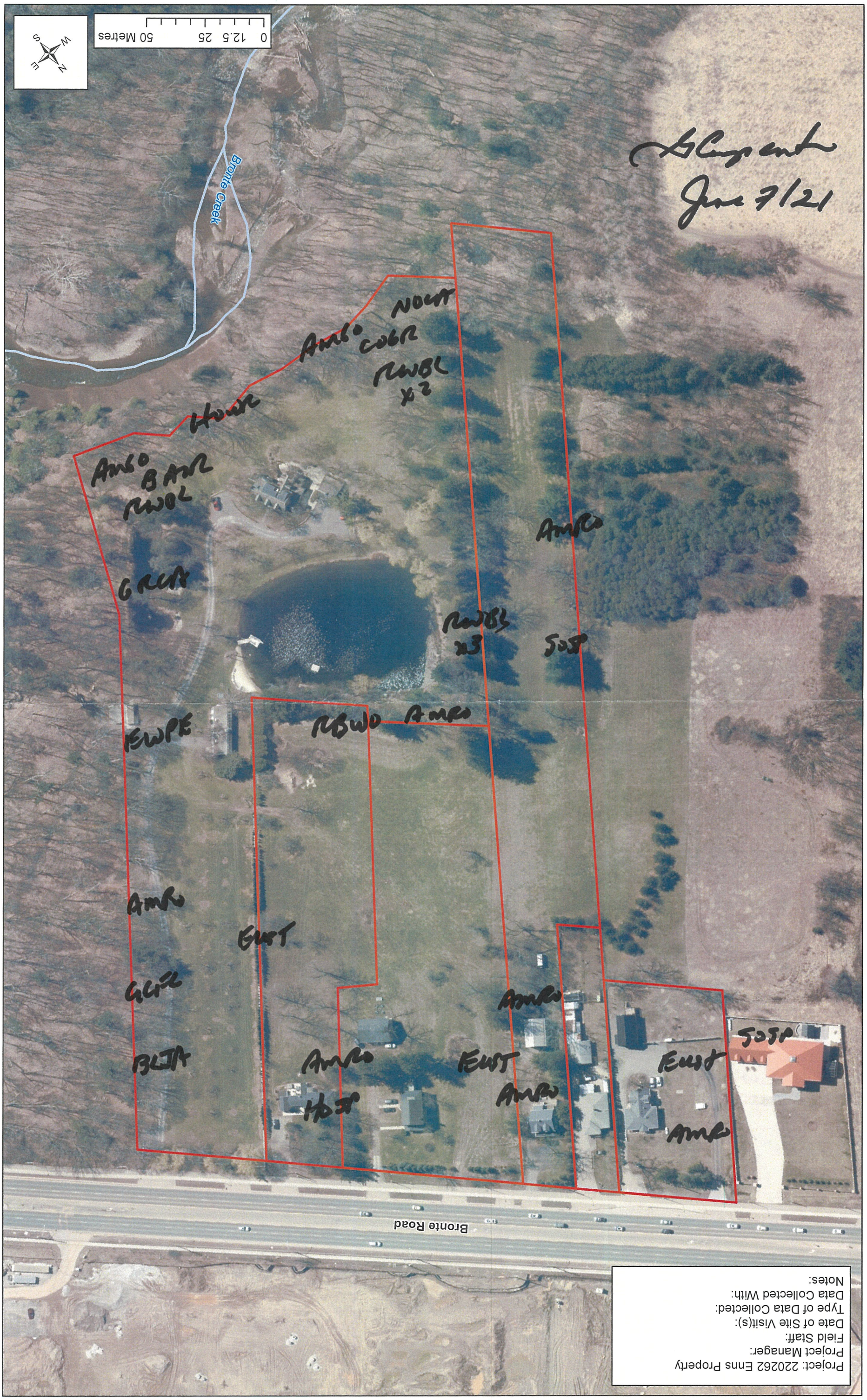
RBWO - 1

NOCA - 1

BADR - 1

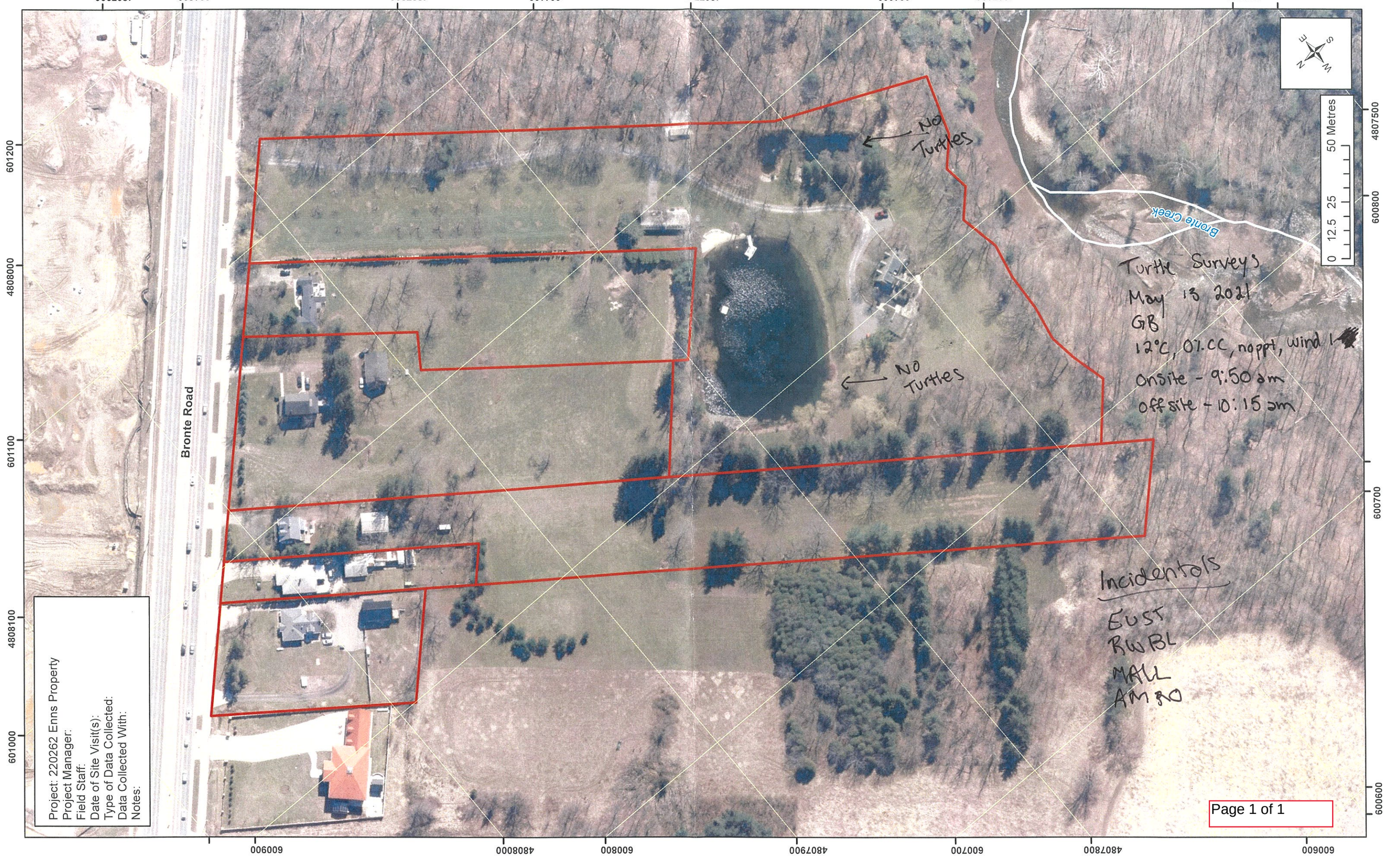
HOWR - 1

COGR - 1-2



Project: 220262 Enns Property
Project Manager:
Field Staff:
Date of Site Visit(s):
Type of Data Collected:
Data Collected With:
Notes:

April 23, 2021


4807900
601200
4807800
601100
4807700
601000
4807600
600900
601200
4808000
601100
4808100
601000
4807500
600800
600700
600600
Bronte Road
Bronte Creek
0 12.5 25 50 Metres
N
E
S
W
No Turtles
No Turtles
Turtle Surveys
May 13 2021
GB
12°C, 01.CC, nappt, wind 1
Onsite - 9:50 am
offsite - 10:15 am
Incidentals
EUST
RWBL
MALL
AMRO
Project: 220262 Enns Property
Project Manager:
Field Staff:
Date of Site Visit(s):
Type of Data Collected:
Data Collected With:
Notes:
Page 1 of 1

220262 Ens Sept. 17/21

on site 11-12pm
DK/GC
30% CC, 24°C no wind, no ppt

- No turtles observed @ either pond
- fish in pond