BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

Scoped Environmental Impact Assessment

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: **January 2022**

Project: **220262 and 221306**

(Revised February 2022 to include updated Eaglewood Site Plan)

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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 Property (**Figure 1**).

The Subject Property include 12.5 hectares 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 Property supports existing development and the southern half supports woodlands and valleylands. The developed areas include several residential properties that contain individual residences, outbuildings, landscaped areas (lawns, ornamental plantings and dug ponds). It is proposed that these existing developed areas be redeveloped to create a single community comprised of a mix of residential townhouses and detached homes.

The developed portions of the Subject Property are designated by the Town of Oakville as Low and Medium Density Residential and Natural Area. The undeveloped portions of the Subject Property are designated as Greenbelt. There is also a Parkway Belt overlay applied.

The developed portions of the Subject Property are surrounded by environmentally designated lands including the Greenbelt Protected Countryside, Bronte Creek Provincial Park and components of the Region of Halton 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 Property overlaps 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 Property fall within the regulation limits of Conservation Halton (CH) and are subject to CH development policies and permitting (**Figure 3**).

Because the Subject Property supports existing development and the proposed redevelopment will be limited to areas that are currently developed and will not encroach into any of the adjacent key natural heritage features, it was proposed that the EIA could be scoped. Additionally, the Subject Property was previously studied from 2012-2015 as part of the Merton Tertiary Panning process to establish the current land use designations and zoning.

Terms of Reference for a Scoped EIA were submitted to the Town of Oakville on July 9, 2021. Comments on the Terms of Reference were received from the Town (October 15, 2021) and Conservation Halton (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**.

1.1 Study Team

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

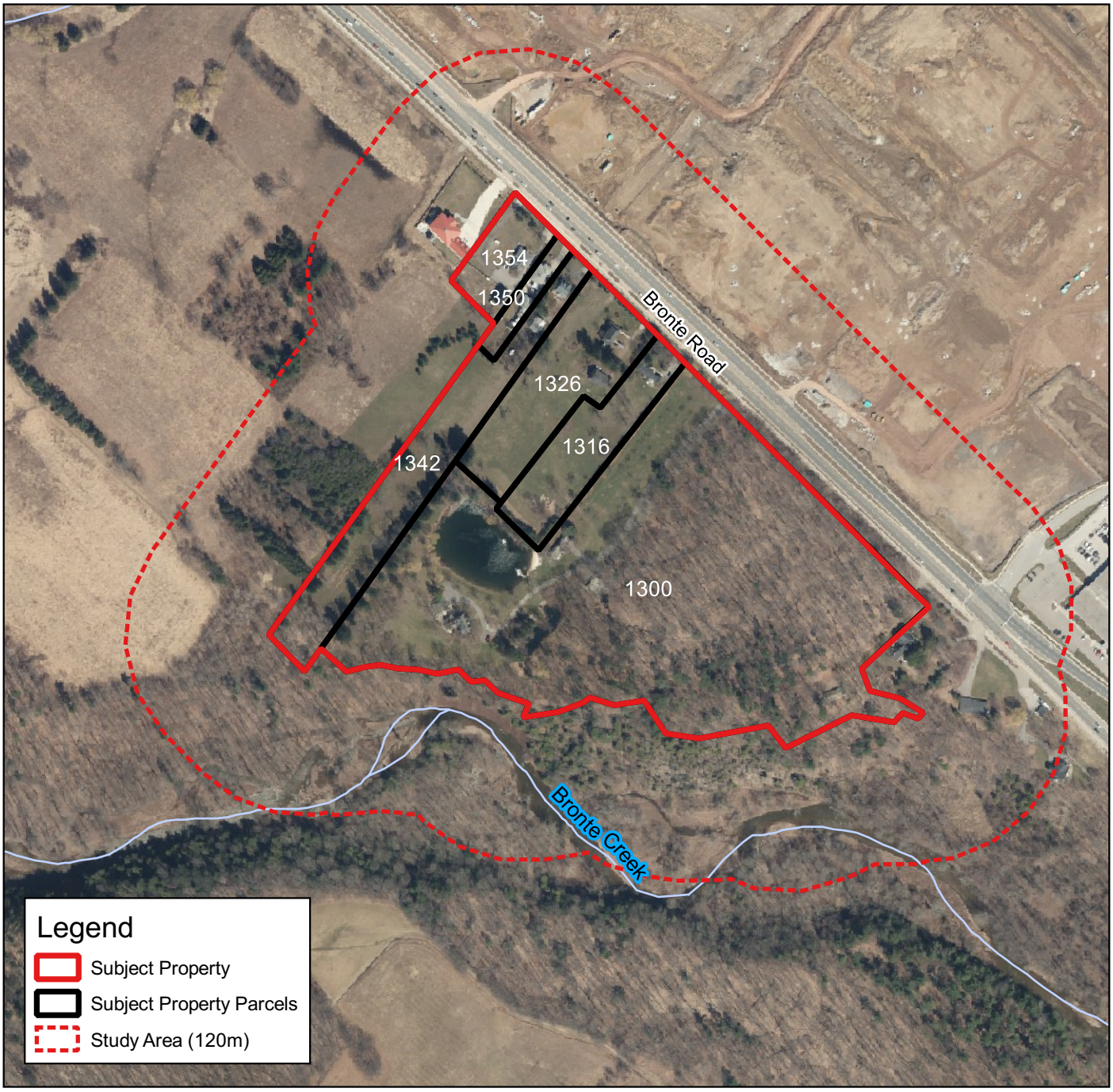
A list of Study Team members, their qualifications, and role in the project is provided in **Table 1**.

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 – Primary Author*
	Grace Bolton	B.Sc.(Hons.) / Ecologist	*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*
GEOMorphix	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 / Municipal Design Assistant	Functional Servicing Report
	Andrew Fata	P.Eng.	
DS Consultants Ltd.	Martin Gedeon	M.Sc., P.Geo. / Vice President	Project Management
Jennifer Lawrence and Associates Inc.	Jennifer Lawrence	Principal, MCIP, RPP	Project Management
Korsiak Urban Planning	Terry Korsiak	Principal – M.A., MCIP, RPP	Planning
	Alison Bucking	Planner – B.E.S., RPP	

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 are variable and are defined by disciplines and scale 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 limits are generally based on application of the 120 m adjacent lands standard as depicted on **Figure 1**, although the EIA also considers the broader landscape and ecological setting.



Site Location	Figure 1
Environmental Impact Assessment – 1300, 1316, 1326, 1342, 1350 & 1354 Bronte Road, Oakville, ON	
BEACON ENVIRONMENTAL	Project: 220262 Last Revised: December 2021
Client: Bronte River Limited Partnership and Eaglewood Communities Inc.	Prepared by: SZ Checked by: KU
N 1:5,000	Inset Map: 1:50,000
Contains information licensed under the Open Government License– Ontario Orthoimagery Baselayer: FBS Halton Region (2019)	

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Legend

- Subject Property
- 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)
- Proposed Draft Natural Heritage System (Region of Halton 2020)

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: December 2021

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.

Prepared by: SZ
Checked by: KU

N

1:15,000

0 300 600 m

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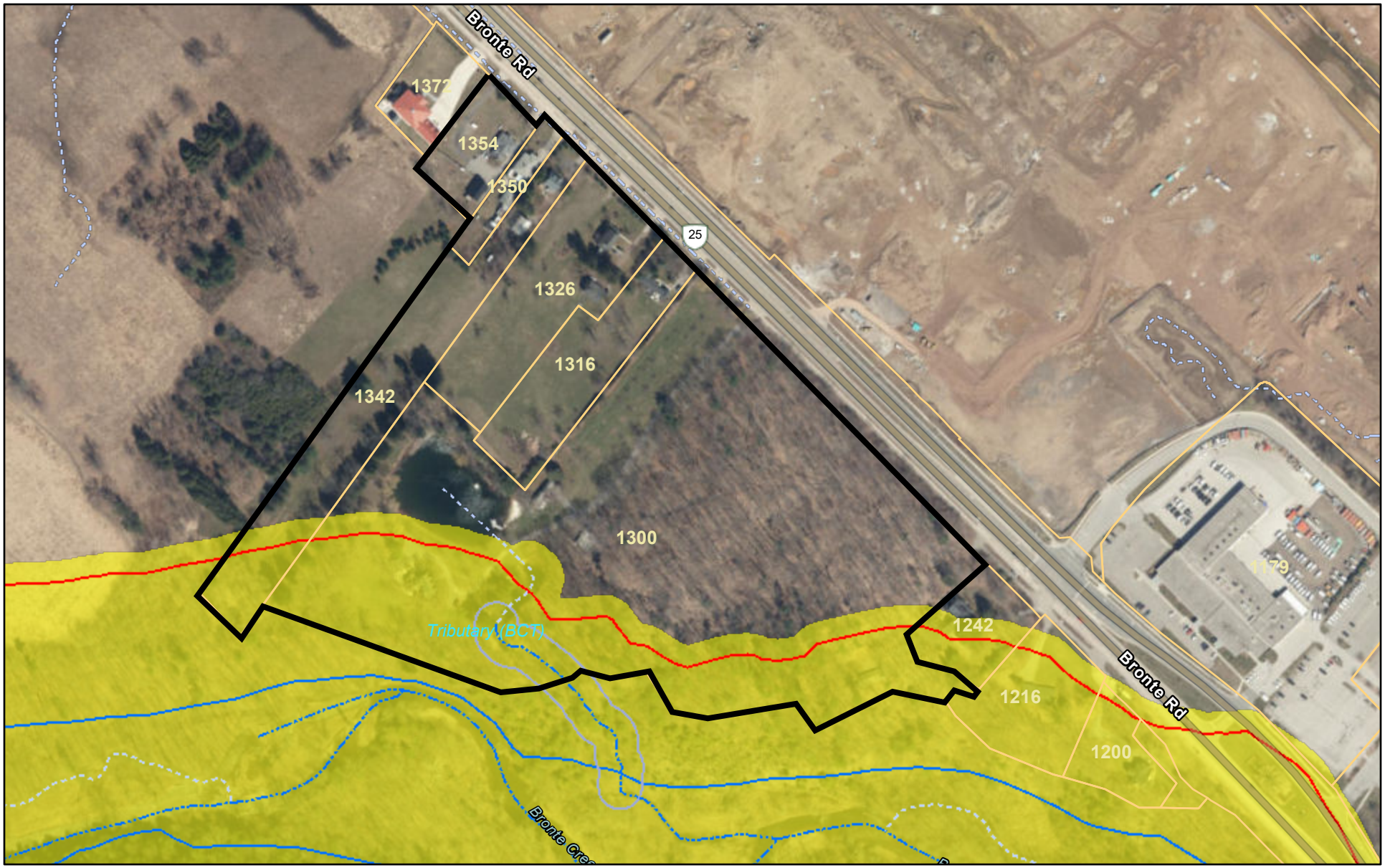
Conservation Halton Regulation Mapping



12/6/2021, 10:32:54 AM

1:5,161

0 175 350 700 ft

0 50 100 200 m

- 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

Conservation Halton, 2021

Conservation Halton, 2021

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 provided 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 Property
Federal	*Fisheries Act* (1985)	Act	To ensure the conservation and protection of fish and fish habitat.	Fish habitat is present in the Study Area but not on the Subject Property. Development activities taking place in or near water may affect fisheries by adversely affecting fish or fish habitat. DFO recommends that proponents of these activities should undergo the following: • Understand the types of impacts their projects are likely to cause; • Take measures to avoid and mitigate impacts to the extent possible; and • Request authorization from the Minister and abide by the conditions of any such authorization, when it is not possible to avoid and mitigate impacts of projects that are likely to cause serious harm to fish. 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.
	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 Property. 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 Property. 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 Property as nesting birds are present.
Provincial	*Conservation Authorities Act (1990) and Ontario Regulation 162/06 (2013)*	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 Property 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)	Act	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 Property 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 Regulation 242/08). 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	The *Fish and Wildlife Conservation Act* enables the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) 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 Plan (2017)	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 (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	Schedule 1 (*Greenbelt Area*) confirms that portions of the Subject Property are located within the Greenbelt Plan Area and are designated as Protected Countryside. The lands on the south and west sides of the Subject Property, 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. *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;*

Level of Government	Act/Regulation/ Policy/Guideline	Type	Purpose	Relevance to the Subject Property
			supports a thriving economy, a clean and healthy environment and social equity.	*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.*
	Provincial Policy Statement (2020)	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 Property. 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 Property 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 Property as part of the EIA.
	Parkway Belt West Plan (1978)	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. The woodlot remains within the limits of the PBWP. 1350 Bronte Road is the only remaining developable property within the PBWP. Within the PBWP, 1350 Bronte Road is designated 'General Complementary Use Area' (*Figure 5*). The Complementary Use Area consists of areas that will be predominantly used for private purposes that are compatible with the PBWP. Permitted uses within the General Complementary Use Area consists of agricultural, institutional, recreational, public, and existing uses. A single detached dwelling on an existing lot of record is also permitted. The woodlot is designated 'Public Open Space and Buffer Areas' which permits public, open space and linear facility uses. An application to remove 1350 Bronte Road from the PBWP was submitted to the Province on September 1, 2021, to allow the property to be developed cohesively with adjacent lands outside of the PBWP.
Regional	Region of Halton Official Plan (2018)	Policy	The Halton Region Official Plan 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 Regional NHS on the Subject Property. Additionally, the Subject Property 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) provides direction as to the land use within the Town.	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 Property 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 Property were 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);
- Functional Servicing Report (Urbantech 2021);
- 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 2021);
- Preliminary Geotechnical Investigation Proposed Residential Development 1326 -1342 Bronte Road Oakville Ontario (DS 2020);
- Tree Inventory and Preservation Plan 1300-1342 Bronte Road Oakville Ontario (Kuntz Forestry Consulting Inc. 2021);
- 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); and
- Aerial Photographs 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 the Subject Property, and two dug pond features on the Subject Property, as well as a drainage feature that outlets from the dug ponds into the Bronte Creek valley via a steep gully.

No assessments were undertaken for Bronte Creek as it is well-removed from the proposed re-development, however assessments were completed to characterize the two dug pond features as well as the drainage feature to which they outlet (Tributary BCT). The assessment was completed on June 7, 2021 by Beacon Environmental aquatic staff. The 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 ponds and following the drainage feature (BCT) downstream and recording the following 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 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 site visits on the Subject Property on May 25, 2021, June 15, 2021, and August 18, 2021 to confirm community classifications, boundaries, and observed flora. These later surveys were focused primarily on the developed portions of the Subject Property.

All of the ecological communities have been classified according to the *Ecological Land Classification for Southern Ontario* (Lee *et al*. 1998) and their boundaries mapped.

A checklist of all vascular plant species observed from the Subject Property, 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 Property has 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 2013). Incidental anuran observations were also noted during other fieldwork (Dance 2013).

As it has been nearly a decade since the Subject Property was last surveyed, 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 Property was 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 indicates 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 Property 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 Property, 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 a number of structures associated with the Subject Property. 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 Property 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 Property 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 Property was 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 Property 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 Property, 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.

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 adjacent to the Subject Property, 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 Property 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 Property 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 Property 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 conduced early in the season, on warm sunny days with limited clouds (Dance 2015).

Beacon also completed turtle surveys on the Subject Property 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:	May 13, 2021	April 23, 2021	September 17, 2021
Start time:	9:50 am	12:30 pm	11:00 am
End time:	10:15 am	12:45 pm	12:00 pm
Temp:	12 °C	12 °C	24 °C
Wind (Beaufort Scale):	1	2	0
Cloud cover:	0%	0%	30%
Precipitation:	None	None	None

Dance Environmental (2015) also conducted snake coverboard surveys in 2013 to monitor for snake Species at Risk (Dance 2013). Plywood coverboards were set in suitable snake habitat throughout the Subject Property. The coverboards were placed in areas that had good contact with the ground that received lots of sunlight (Dance 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, and by Beacon in 2021 by flipping cover objects.

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.

3.3 Feature Staking

The top of slope along the Bronte Creek valley and tributary was staked by Conservation Halton on August 18, 2021. The boundaries of woodlands associated with the Subject Property adjacent to the proposed redevelopment 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 Property is located on the south slope of the Trafalgar Moraine, a 'till moraine' originally mapped by Chapman and Putnam (1984) and updated by the Ontario Geological Survey (Barnett 1992). 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 Property.

4.1.2 Soils

Soils are described in the *Preliminary Geotechnical Investigation*'s for 1326-1342 and 1350 Bronte Road (DS 2020; DS 2021) 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 2020). 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 6m to 8.2m below ground surface (DS 2020). Topsoil typically ranged in thickness from 75 mm to 180 mm, however the depth may vary across the site (DS 2020; DS 2021). Fill was identified at all boreholes at depths varying from 0.8 to 3m.

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

4.1.3 Topography and Drainage

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

Bronte Creek is the main drainage feature adjacent to the Subject Property. The Subject Property supports two dug ponds, one large (0.41 ha) and another smaller (0.5 ha) that are connected with a culvert. The large pond drains into the smaller pond which then outlets to a drainage swale, referred to as Bronte Creek Tributary or BCT. The ponds are not mapped as regulated by CH however, the

drainage feature downstream of the smaller pond (i.e., BCT) is regulated by CH. Drainage from the ponds flows into BCT which outlets to a steep gully feature and spills onto the Bronte Creek floodplain. There is no discernable channel connecting BCT to the main Bronte Creek within the floodplain. BCT is ephemeral and only flows during storm events.

4.1.4 Hydrogeology

No hydrogeological investigations have yet been completed for the Subject Property. DS Consultants Ltd. (2020; 2021) have completed a geotechnical investigation during which they logged groundwater elevations from a number of the boreholes. All boreholes installed during this study were recorded as saturated at ranges of 1.2 m to 7.7 m below the existing ground surface. It is likely that the dug ponds have the effect of elevating water levels in the vicinity of the ponds and that once the ponds are removed in the future, that the levels will drop.

4.2 Aquatic Habitat

4.2.1 Ponds

The larger of the two dug ponds has a surface area of 0.41 ha. It is steep sided and has a depth of at least 2.0 m. The large pond is open water with aquatic vegetation along the perimeter. Many baitfish species such as Pumpkinseed (*Lepomis gibbosus*) and Largemouth Bass (*Micropterus salmoides*) were seen within the pond, mainly within the aquatic vegetation. It is our understanding that the pond is stocked. There is a small wooden dock at the eastern end of the pond, which can provide cover for fish species. On the north end of the pond, there is a small area of upwelling and iron staining, indicating potential groundwater input into the pond.

The smaller of the two dug ponds is 0.05 ha in area and is located south of the larger pond. The pond is steep sided and is approximately 1.5 to 2.0 m in depth. It supports some aquatic vegetation and is shaded by large mature trees. There were no fish observed within this pond, however, this could be due to the lack of visibility caused by the aquatic vegetation and the water circulation system.

4.2.2 Bronte Creek Tributary (BCT)

BCT conveys flows from the ponds through a deep gully feature associated with the Bronte Creek valley slope. The gully feature is approximately 13 m wide at the top and 6-7 m deep. It is semi-vegetated with groundcovers. Woody vegetation, shrubs and trees are limited to the upper slopes. The base of the gully contains woody debris and leaf litter. Woody debris throughout the channel creates knickpoints of approximately 0.5 m in height, creating a barrier to fish migration. Exposed banks and tree roots indicate some active erosion.

Substrate is composed of silt, sand and gravel. The swale is approximately 1.5 m wide. At the bottom of the gully, the channel loses definition and sheet flows to Bronte Creek through dense herbaceous vegetation. At the time of assessment, there was minimal flow at the top portion of the gully but the accumulation of groundwater inputs throughout the channel significantly increased the amount of flow at the lower portion of the channel. There was also iron staining and watercress along the lower portions of BCT.

4.2.3 Fish Community

No fish community sampling has been completed in Bronte Creek or in the dug ponds. The fish community in Bronte Creek is known and has been documented through multiple studies. The dug ponds are known to support Largemouth Bass, Pumpkinseed and Bluegill and these were observed nesting around the pond edges by Dance Environmental (2015). Mr. Enns indicated that all fish species in the ponds have been introduced by humans. While there are fishes associated with these ponds, the ponds are effectively offline and therefore do not represent fish habitat.

BCT is too steep to allow for fish passage. There is also a barrier between the ponds and BCT which preclude fish release from the ponds to BCT. Furthermore, flows are ephemeral to intermittent, and therefore not supportive of fish habitat.

4.3 Ecological Land Classification

Eight ecological communities were identified as being associated with the Subject Property. 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 open 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 (*Arissima triphyllum*), and Herb Robert (*Geranium robertianum*).

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 (*Tusga canadensis*). Understory shrubs include Maple-leaf Viburnum (*Viburnum acerifolia*), 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*).

ELC Unit 3: Mineral Meadow Marsh (MAM2)

This small marsh is located along the south/east side of the property and is associated with a low area at the outlet of the smaller dug pond (ELC unit 4). This feature is dominated by Common Reed

(*Phragmites australis*), 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 smaller dug pond feature. It supports Lesser Duckweed (*Lemna minor*), pondweeds (*Potomageton* sp), 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 larger dug pond 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, and Austrian Pine (*Pinus nigra*). 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*), and White Cedar (*Thuja occidentalis*).

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

This feature is a mature forest on the southwestern side of the Subject Property 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 (*Hamamelis virginiana*). 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 (*Maianthemum racemosum*), Pennsylvania Sedge (*Carex pennsylvanica*), and Large-leaved Aster (*Eurybia macrophyllum*).

Legend

- Subject Property
- Watercourse (MNRF 2021)
- Ecological Communities

Unit	ELC Communities
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)
5	Open Water Aquatic (OAO)
6	Hedgerow
7	Anthropogenic
8	Dry-Fresh Hemlock Mixedwood Forest (FOM3)
9	Mixed Plantation (CUP2)

ELC Communities | **Figure 4**

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

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: December 2021

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.

Prepared by: SZ
Checked by: KU

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ELC Unit 9: Mixed Plantation (CUP2)

This woodland community is located within the Study Area adjacent to the Subject Property to the northwest. It consists of a mix of young to mid-aged planted trees, including Scotch Pine (*Pinus sylvestris*), Larch (*Larix sp.*) and Black Walnut (*Juglans nigra*).

4.4 Flora

A total of 249 vascular plant species were identified during botanical field investigations in 2012, 2013 and 2021. A list of flora recorded during field surveys is presented in **Appendix B**. Of the 249 species, 75 (30%) are non-native in Ontario. The majority of native species are ranked S5 or S4 by the NHIC, indicating they are secure (S5) or apparently secure (S4) provincially.

Two species are ranked S2?. Both Honey Locust (*Gleditsia triacanthos*) and Butternut *(J. cinerea)* were recorded on the Subject Property. 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 (2021). Butternut is designated as an endangered species in Ontario. The locations of Butternut trees are illustrated in **Figure 5**. Two of the Butternut trees (#2 and #3) were planted by the previous owner in 1988. Cultivated butternuts are not protected under the *Endangered Species Act*. Butternut #4 was assessed to be a Category 1 (non-retainable) tree by a Certified Butternut Health Assessor (Peter Kuntz). Non-retainable Butternuts are not protected under the *Endangered Species Act*. Through the Butternut Health Assessment, Butternut #1 was determined to be a hybrid based on phenotypic traits (lenticel shape, pitch color, leaf scar shape). Butternut hybrids are not protected under the *Endangered Species Act*. The Butternut Health Assessment report and supporting documentation was submitted to MECP on July 12, 2021.

Using the vascular plant status from the Halton Natural Areas Inventory (Crins *et al* 2006), there are 17 species identified from the Subject Property 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 & 8 and the larger pond ELC Unit 5. The rare and uncommon species 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	Location (ELC Unit)
Bidens vulgata	Tall Beggarticks	S5	Uncommon	7*
Borodinia canadensis	Canada Rockcress	S4?	Uncommon	2
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*

Scientific Name	Common Name	S-Rank	Halton Status	Location (ELC Unit)
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*
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 (2021).

4.5 Anuran Surveys

Dance Environmental did not detect any anuran species calling within the Subject Property (Dance 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 Valley to the west of the Subject Property (Dance 2013).

Two frog species, Green Frog and Spring Peeper were recorded calling within the Subject Property during Beacon's amphibian surveys in 2021. 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.

Legend

- Subject Property
- Watercourse (MNRF 2021)
- Bronte Creek Tributary (Conservation Halton)
- Butternut Assessed by Kuntz Forestry Consulting (2021)
- Amphibian Monitoring Stations
- Bat Exit Survey Locations
- Chimney Swift Survey Location

Biological Sampling Stations | **Figure 5**

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

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: December 2021

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.

Prepared by: SZ
Checked by: KU

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The anuran population on the Subject Property is low in species richness and in diversity. While the 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 Property as these are contained within the Greenbelt and will not be developed. It is assumed that roosting habitat for bats, including listed species, exists. However, 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 Property by A. Keavney 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 valleyland off the Subject Property.

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 larger pond (ELC Unit 5).

Beacon conducted breeding bird surveys on the Subject Property 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 Property dominated by open anthropogenic spaces, 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 Property 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 Property.

4.8 Insect (Dragonfly and Damselfly) Surveys

Odonates

Dance Environmental identified 13 dragonfly and damselfly species on the Subject Property in 2012, with the majority found around the two ponds on 1300 Bronte Road. In 2014 & 2015 Dance observed 28 species of Odonates on the Subject Property. 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 Property. 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 smaller 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 Property

Common Name	Scientific Name	Total Recorded	Provincial S rank	Region of Halton Status (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	n/a
Familiar Bluet	*Enallagma civile*	82	S5	Common
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 Property 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. Lepidopterans Recorded on the Subject Property

Common Name	Scientific Name	Total Recorded	Provincial S rank	Region of Halton Status (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 Sulpher	*Colias philodice*	16	S5	Common
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 observed two snake species during coverboard surveys in 2013, Eastern Gartersnake and DeKay's Brownsnake. These species were observed within the Bronte Creek valleylands.

No snakes were noted by Beacon during any field visits in 2021 on the Subject Property.

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 Property and along the Subject Property 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*);
- Ring Billed Gull (*Larus delawarensis*);
- Red-winged blackbird (*Agelaius phoeniceus*);
- Blue Jay (*Cyanocitta cristata*);
- Black-capped chickadee (*Poecile atricapillus*); and
- Great Horned Owl (*Bubo virginianus*).

Mammals

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

Amphibians

- Green Frog (*Lithobates clamitans*); and
- 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.

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 Regional Natural Heritage System. 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.*

The ecological surveys and habitat assessments confirmed that the Subject Property supports habitat for endangered Butternut and possible habitat for endangered Northern Myotis.

As was discussed in **Section 4.4**, there are four Butternut associated with the Subject Property. Three of the trees are either planted or hybrids, and one of the three trees is a non-retainable specimen. Under the regulations of the *Endangered Species Act*, habitat protection does not apply to hybrids and planted specimens. The other specimen is located in a buffer area (identified as Butternut # 4 in **Figure 5**) and will be protected.

While not confirmed, it is possible that portions of the forested communities on the Subject Property could support habitat for endangered Northern Myotis, however further studies would be required to confirm their presence. As no development is proposed within any of the forested areas, it is our opinion that such studies would not affect the outcome of the EIA, as it has been assumed habitat is present.

5.2 Significant Woodlands

Significant Woodlands are also Key Features of the Regional Natural Heritage System. 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 Property (ELC Units 1, 2 & 8) do support patches of trees over 99 years in age, and collectively comprise and are of greater than 2.0 ha, and are also within 50 m of Bronte Creek, which has been identified as a major creek by the ROP. Based on fulfilment of multiple criteria, these forest units qualify as significant woodland and are Key Features of the RNHS.

The Cultural Plantation (ELC Unit 9) does not support trees greater than 99 years in age, is less than 2.0 ha in area, and is more than 50 m from a major creek. This unit is separated from the other woodlands by a gap of more than 20 m and therefore does not qualify as significant woodland.

The limits of the natural forest communities and cultural plantation adjacent to the proposed redevelopment 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 (2014) 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 Region's Natural Heritage System. 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.*

The small wetland associated with ELC Unit 3 is located outside the Greenbelt Plan Area and does not provide an important ecological contribution to the RNHS. This feature does not contain regionally or provincially sensitive species and covers less than 0.03 ha. The small amount of wetland area and anthropogenic origin do not significantly contribute to the RNHS.

There are no Provincially Significant Wetlands (PSWs), ecologically contributing wetlands or MNRF evaluated wetlands within or adjacent to the Subject Property. The nearest PSW is the Lower Bronte Creek Wetland Complex, located ~2.3 km southeast of the Subject Property (**Figure 2**).

5.4 Significant Valleylands

In regard to valleylands, significant is defined by the PPS (2014) 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 …*

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 Regional Natural Heritage System. The Town of Oakville does not define significant valleylands, although they do identify major valleylands like Bronte Creek.

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 a majority of the criteria in this table and are therefore considered significant valleylands and a Key Feature of the Regional Natural Heritage System.

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 Property support candidate 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 Significant Wildlife Habitat (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, each of which is intended to capture a specialized type of habitat that may or may not be captured by other existing feature-based categories (e.g., significant wetlands, significant woodlands).

Based on the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF 2015), the forested habitats associated with the Subject Property qualify as potential Significant Wildlife Habitat for the following habitat types:

- Bat Maternity Colonies;
- Landbird Migratory Stopover Areas; and
- Special Concern and Rare Wildlife Species (Eastern Wood-Pewee).

A detailed analysis of SWH is presented in **Appendix D.**

5.6 Significant Areas of Natural and Scientific Interest

Significant Areas of Natural and Scientific Interest are recognized as Key Features within the Regional Natural Heritage System. Regarding Areas of Natural and Scientific Interest (ANSIs), 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.*

There is a Life Science ANSI, Bronte Creek Provincial Park Nature Reserve Zone, overlapping slightly with the southern and western portion of, and adjacent to, the Subject Property (**Figure 2**).

5.7 Fish Habitat

The PPS (2020) treats all fish habitat equally regardless of significance. All water features (i.e., permanent or intermittent streams, seasonally flooded areas, and natural ponds are generally considered fish habitat). The PPS applies only to waterbodies that constitute fish habitat, as defined by the *Fisheries Act* (1985).

Bronte Creek contains fish habitat and is approximately 30 m southwest of the Subject Property. The two dug ponds on the Subject Property are not considered fish habitat. These are both artificial features, the larger of which has been historically stocked with fish. Both ponds have a limited connection with Bronte Creek, from a fish habitat perspective. As discussed in **Section 4.2** the gully provides an extremely limited movement corridor, and fish are not expected to migrate between Bronte Creek and the dug ponds.

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 Regional Natural Heritage System 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 Property. 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 components of the RNHS as they relate to the Subject Property. As the RNHS also encompasses the Greenbelt NHS, the latter is not discussed below. Furthermore, as the Greenbelt Key Natural Heritage Features extend beyond the Greenbelt Plan limits, the Greenbelt Plan policies do not apply to those lands beyond the Greenbelt Plan limit.

The intent of identifying a Preliminary RNHS on the Subject Property is to inform the development plan and design. It is recognized that boundaries of the Preliminary RNHS will be further refined based on consideration of the development design and its efficient integration and that the resulting development limits will then be used to define the Final RNHS.

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 Property or likely associated with the Subject Property:

- Butternut (*Juglans cinerea*) – Endangered; and
- Northern Myotis (*Myotis septentrionalis)* – Endangered.

Four Butternut trees were identified on the Subject Property. One tree was determined to be a hybrid, two trees were planted, and one tree was assessed to be a Category 1 non-retainable specimen. The regulations under the *Endangered Species Act* do not apply to hybrids or planted specimens and only afford protection to Category 2 and 3 trees, which are not present. As such, the habitat of Butternut was not used to define the limits of the Preliminary RNHS. Notwithstanding, the non-retainable specimen will be contained within the RNHS as it overlaps with the buffer to the Significant Woodland feature.

Northern Myotis was detected on the Subject Property during acoustic monitoring. While no bats were observed utilizing existing structures in the developed portion of the Subject Property, 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 also be contained within the RNHS.

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 Property 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 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 stable top of slope, as determined by Terraprobe, represents the limit of the Significant Valleyland.

6.1.4 Significant Wildlife Habitat

As discussed in **Section 5.5**, the Study Area supports SWH for bat maternity colonies and habitat for species of conservation concern. The SWH is contained entirely within the boundaries of the significant woodland features on and adjacent to the Subject Property which form part of the Preliminary RNHS.

6.1.5 Significant Areas of Natural and Scientific Interest (ANSI)

As discussed in **Section 5.6**, the Subject Property 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.

6.1.6 Fish Habitat

As discussed in **Section 5.7**, fish habitat is present in Bronte Creek adjacent to the Subject Property, but not on the Subject Property. The two dug ponds on the Subject Property do not connect with the creek in a way that allows fish passage, and therefore are not considered fish habitat by DFO.

6.2 Non-significant Wetlands

As discussed in **Section 5.3** there is one wetland (ELC Unit 3) associated with the smaller dug pond on Subject Property and it does not meet the ROP definition of significance and therefore is not considered a Key Feature. Although other wetlands are considered part of the RNHS, this wetland was not staked by CH. As this wetland overlaps with the buffer to the adjacent Significant Woodland, it is contained within the Preliminary RNHS.

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 valleyland corridor 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. There are many variables that need to be considered in order to identify an appropriate and scientifically defensible buffer to a protected feature. These include slope and topography, soils, drainage, vegetative structure of the buffer area, the sensitivities of the feature, and the nature and scope of the proposed changes in adjacent land use. 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, prescribed 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, buffers are a mitigative tool that have become more or less standard as part of the natural heritage planning process in southern Ontario, they should be understood as only one of a multitude of possible tools in helping to mitigate the effects of changes in adjacent land uses. For example, the effectiveness of a buffer is generally increased when it is naturalized and implemented in conjunction with other design measures (e.g., physical barriers that clearly separate the protected natural area from the developed area such as fences, trails or LIDs).

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*.

As it relates to the Subject Property, the Significant Woodland represent the only Key Feature requiring a buffer.

The Region of Halton does not prescribe buffer widths, but requires they be determined through site-specific study. The Town of Oakville policies pertaining to woodlands (S. 16.1.8) generally do not permit development within 10 m of a woodland, however they 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) similarly recommends a minimum 10 m buffer to be confirmed through study.

From an ecological perspective, a 10 m woodland buffer is considered sufficient to protect the significant woodland features on the Subject Property from potential impacts related to the change in land use. The reasons for this are outlined below:

- The Subject Property currently supports existing residential development, consisting of residences, laneways, trails, lawns, accessory buildings and structures, some of which are

contained within the significant woodland Key Feature. There are currently no ecological buffers or fencing to the woodland and the woodland edges are well hardened and adapted to these existing uses and activities and therefore not considered highly sensitive;

- The trees along the woodland edges have been managed;
- ELC Unit 9 is a cultural plantation and does not support any significant wildlife;
- ELC Unit 2 flanks the Bronte Creek valley and also does not support any significant wildlife as most of it is currently maintained as lawn and used by the existing residents; and
- Portions of ELC Unit 1 proximal to the valley and ELC Unit 8 are 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 stressors of future residential development, however the effects of Bronte Road cannot be mitigated with a buffer.

Notwithstanding that a 10 m woodland buffer can provide appropriate protection to the significant woodland features on the Subject Property, the Town of Oakville 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 Property that can be further refined through the completion of an EIA approved by the Region. Beacon interprets this policy as permitting refinements the 30 m buffer in a manner that is consistent with ROP policy 116.1, which provides flexibility to make the buffer wider or narrower as established through the EIA.

For the purposes of establishing the limits of the Preliminary RNHS in a manner that is consistent with the Town of Oakville policy 27.3.8.3 e)i) and the Natural Area designation reflected on Schedule H, Beacon recommends application of a 10 m buffer to provide for ecological protection of Key Features to which is added a 20 m Enhancement Area that can provide supportive functions to the Key Features such as habitat and water quality improvements (**Figure 6**). In our view, this approach achieves both the ecological protection and satisfies the policy requirements.

6.5 CH Regulated Watercourses

There are two watercourses associated with the Subject Property. Bronte Creek is located immediately west of the Subject Property and is mapped as a regulated watercourse by CH. Bronte Creek Tributary (BCT) is mapped as regulated downstream of the smaller pond. These watercourses are contained within the limits of the Preliminary RNHS.

6.6 Enhancements to Key Features

Enhancements to Key Features is another component of the RNHS as defined 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.*

Legend

- Subject Property
- Woodland Boundary (Staked by the Region of Halton Sept. 7, 2021)
- Woodland Buffer (10 m)
- Enhancements to the Key Features (20 m)
- Staked Top of Slope (Staked by Conservation Halton Aug. 18, 2021)
- Stable Top of Slope (Determined by Terraprobe 2016, confirmed by Terraprobe in 2021)
- 15 m Setback from Stable Top of Bank
- Preliminary Regional Natural Heritage System (Beacon 2021)
- Proposed Draft Natural Heritage System (Region of Halton 2020)
- Bronte Creek Tributary (Conservation Halton)

Constraints	**Figure 6**

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

BEACON ENVIRONMENTAL

Project: 220262
Last Revised: December 2021

Client: Bronte River Limited Partnership and Eaglewood Communities Inc.	Prepared by: SZ Checked by: KU
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Opportunities exist on the Subject Property to implement measures that will increase the ecological resilience and function of Key Features. Recommended measures to be considered adjacent to and within the Key Features and Enhancement Areas are listed below:

As the area within 30 m of the Greenbelt boundary is zoned as Natural Area, there is an opportunity to provide for an Enhancement Area of approximately 20 m in width adjacent to the 10 m buffer. This area could be naturalized and used for green infrastructure and trails that would improve the ecological resilience and function of adjacent Key Features. Measures could include:

- Landscaping with locally appropriate native trees, shrubs and groundcovers to enhance diversity by providing local seed sources;
- Creation of artificial wildlife habitats (i.e., brush piles, snake pits, bird and bat boxes) to provide more opportunities for local wildlife and to increase biodiversity; and
- Establishing trails for nature appreciation and recreation.

There are also many opportunities to implements enhancement measures within the adjacent Key Features. Measures could include:

- Management and control of populations of invasive species within Key Features and replacement with locally appropriate native trees, shrubs and groundcovers;
- Removal of existing structures from within Key Features (e.g., sheds, garage, deck platform) and rehabilitation and restoration of these areas to original condition;
- Installing signage to discourage off trail activities, control access and pets, and promote nature interpretation and education;
- Decommissioning of redundant trails and rehabilitation;
- Installation of natural barriers (i.e., logs, rocks, brush piles, shrub plantings) along any trails to be retained in the future to mitigate off trail activities; and
- Creation of artificial wildlife habitats (i.e., brush piles, snake pits, bird and bat boxes) to provide more opportunities for local wildlife and to increase biodiversity.

The significant woodland features on the Subject Property will come into public ownership in the future. If it is the Town's desire to provide public access to the significant woodland, it is recommended that a Master Plan be prepared to incorporate the enhancement measures recommended above, and to address long-term management of the woodland.

The limits of the Preliminary RNHS (**Figure 6**) were established by applying a 10 m buffer to the significant woodland and adding a 20 m wide Enhancement Area.

6.7 Flood Hazard

The ROP includes flood hazards as a component of the RNHS as defined in ROP policy 115.4. There are no flood hazards on the Subject Property, however there is a regulated floodplain associated with Bronte Creek. 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 Property.

6.8 Erosion Hazards

Erosion hazards are not considered components of the RNHS, however they often overlap with Key Features such as significant valleylands which are defined using the stable top of slope. The Region, Town and CH have specific policies relating to development within or adjacent to natural hazards that must be considered and will be used to establish development limits for future development.

The Bronte Creek valleylands on the Subject Property represent an erosion hazard. The physical top of slope was staked by CH on August 18, 2021. Erosion hazards for confined systems are defined by calculating the Long-Term Stable Top of Slope (LTSTOS).

Terraprobe Inc. originally completed a slope stability assessment of the Bronte Creek valley slope in May 2016. The LTSTOS was calculated based on the applicable erosion and stability setbacks in accordance with CH guidelines. A slope inclination of 1.4H:1V is recommended for the slope portion comprising shale, 1.8H:1V for areas with undisturbed native overburden soil and 2.25H:1V or flatter is required for the long-term stability of the slope in areas with earth fill (Terraprobe 2016). The resultant stable top of slope limit is shown on **Figure 6.**

The slope stability assessment was updated by Terraprobe Inc. in December 2021 to include an additional segment of valley slope further south in the vicinity of the gully feature. As there were no significant or noticeable changes to the slope from the prior inspection, the original LTSTOS remains applicable.

In keeping with CH's planning policy recommendations related to development setbacks adjacent to the stable top of slope, the Town of Oakville Official Plan Policy 16.1.9.c requires a 15 m setback from the identified stable top of slope of major valleys, which applies to Bronte Creek. A 15 m setback has been applied to the identified stable top of slope when determining development constraints related to future development.

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 Property.

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 in **Section 6**, it was determined that the significant natural heritage features that have been identified on the Subject Property are associated primarily with the Bronte Creek valleylands and woodland areas within the Greenbelt.

The following is a list of natural heritage constraints to future development on the Subject Property:

- Significant Habitat of Endangered and Threatened Species:
    - Northern Myotis (endangered) – defined by limits of Significant Woodlands;
- Significant Woodlands – defined by staked woodland dripline to ELC Units 1 & 2;
- Significant Valleylands – defined by stable top of slope;
- Significant Wildlife Habitat – defined by limits of Significant Woodland;
- Significant ANSI – as shown on **Figure 2;**
- Fish Habitat – defined by Bronte Creek;
- Linkages – Bronte Creek valleyland – defined by limits of Significant Valleyland;
- Buffer – defined by a 10 m zone from the staked dripline of Significant Woodland; and
- Enhancements to Key Features – defined by a 20 m zone applied to the buffer.

7.2 Natural Hazard Constraints

The Study Are includes the Bronte Creek valleyland and floodplain. The bottomlands or floodplain are subject to flooding which may present a constraint should there be a requirement for infrastructure to be installed in the valley. The Bronte Creek valley slopes present an erosion hazard to tableland development. As noted in **Section 6.8**, Terraprobe Inc. completed a slope stability assessment to establish the long-term stable top of slope

The following is a list of natural hazard constraints to future development on, or adjacent to, the Subject Property:

- Regional Storm flood plain and 15 m regulatory allowance; and
- Long-Term Stable Top of Slope and 15 m regulatory allowance.

While development within natural hazards is generally discouraged, there are criteria and conditions which do permit it in certain cases such as existing uses and infrastructure. Furthermore, setbacks to natural hazards do not constitute a hazard, but are provided for the purposes of providing access and a means of egress/ingress to the hazard lands. Any development within the above noted natural hazard constraints and regulatory setbacks 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 Property and surrounding area. To facilitate achieving this objective, this EIA has confirmed the significance of the various natural heritage features, delineated the boundaries of natural features with agencies and identified a Preliminary RNHS inclusive of buffers and Enhancement Areas, as well as other constraints. This work was used to inform and guide the design of the proposed redevelopment plan and associated environmental management systems.

The proposed redevelopment plan has been designed to avoid impacting significant natural heritage features and ecological functions. Development limits have generally been established outside of the identified Key Features and their buffers as well as Enhancement Areas and natural hazards that comprise the RNHS.

Eaglewood Communities Limited

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

- One four storey residential complex consisting of 71 condominium units; 111 parking spaces;
- Landscaping; and
- Road connection to Saw Whet Boulevard.

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

Bronte River Partnership Limited

The proposed redevelopment plan (**Figure 7B**) consists of the following:

- 39 single detached dwellings including one existing dwelling to remain post-development;
- 103 condominium town homes;
- 2.09 ha Buffer and Enhancement Area;
- 5.32 ha woodlot block;
- 0.05 ha of road widening; and
- 1.00 ha of 17 m ROW (583 m).

Two structures will be removed from the erosion hazard, including a small building at the top of BCT and a cantilevered deck into the main valley. With the exception of the stormwater related infrastructure described below, the proposed redevelopment plan generally respects the limits of the Preliminary RNHS. There are however four lots (Lots 13, 14, 15, 17) plus the lot for the existing Enns residence (Lot 16) which encroaches on the Preliminary RNHS. The identified lots along the Bronte Creek valley side of the Subject Property encroach slightly into the 30 m area (i.e., 30 m from dripline) containing the Enhancement Area and buffer. While these encroachments are limited to the Enhancement Area and do not affect the woodland buffer or its functions, they do reduce the size of the Natural Area Zone and

DEVELOPMENT STATISTICS

CONDO SITE AREA: 0.44ha (0.441ac)
SITE DENSITY: 162 UPHA

BUILDING STATISTICS

TOTAL UNITS: 71 UNITS
UNITS PER FLOOR (1ST STOREY): 12 UNITS
UNITS PER FLOOR (2ND STOREY): 20 UNITS
UNITS PER FLOOR (3RD STOREY): 19 UNITS
UNITS PER FLOOR (4TH STOREY): 20 UNITS

LOCKERS PROVIDED: 73
BIKE RACKS PROVIDED: 59

PARKING STATISTICS

TOTAL SPACES: 111 SPACES
PARKING RATIO REQUIRED: 1.5 SPACES / UNIT
PARKING RATIO PROVIDED: 1.6 SPACES / UNIT

TOTAL ACCESSIBLE SPACES: 4 SPACES

17 SURFACE
PARKING SPACES

94 UG PARKING
SPACES

111 TOTAL PARKING
SPACES

1 SP1 SITE PLAN
1:150

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND JOB CONDITIONS BEFORE PROCEEDING WITH WORK

ALL DRAWINGS MAY BE SUBJECT TO CHANGE DUE TO COMMENTS FROM MUNICIPAL DEPARTMENTS AND OTHER AGENCIES WITH AUTHORITY

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECTS AND MUST BE RETURNED AT THE COMPLETION OF THE WORK

THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED "FOR CONSTRUCTION" MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM HIS OR HER WORK

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

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.
1006 SKYVIEW DRIVE • SUITE 101
BURLINGTON, ONTARIO • L7P 0V1
T 905.639.6595
F 905.639.0394
www.knymh.com info@knymh.com

ONTARIO ASSOCIATION OF ARCHITECTS
PRZEMYSLAW MYSZKOWSKI
LICENCE 7984

FIGURE 7A

RESIDENTIAL PROJECT

1354 BRONTE ROAD
OAKVILLE, ONTARIO

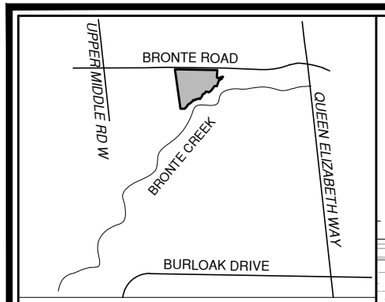
DRAWING SHEET TITLE:
SITE PLAN

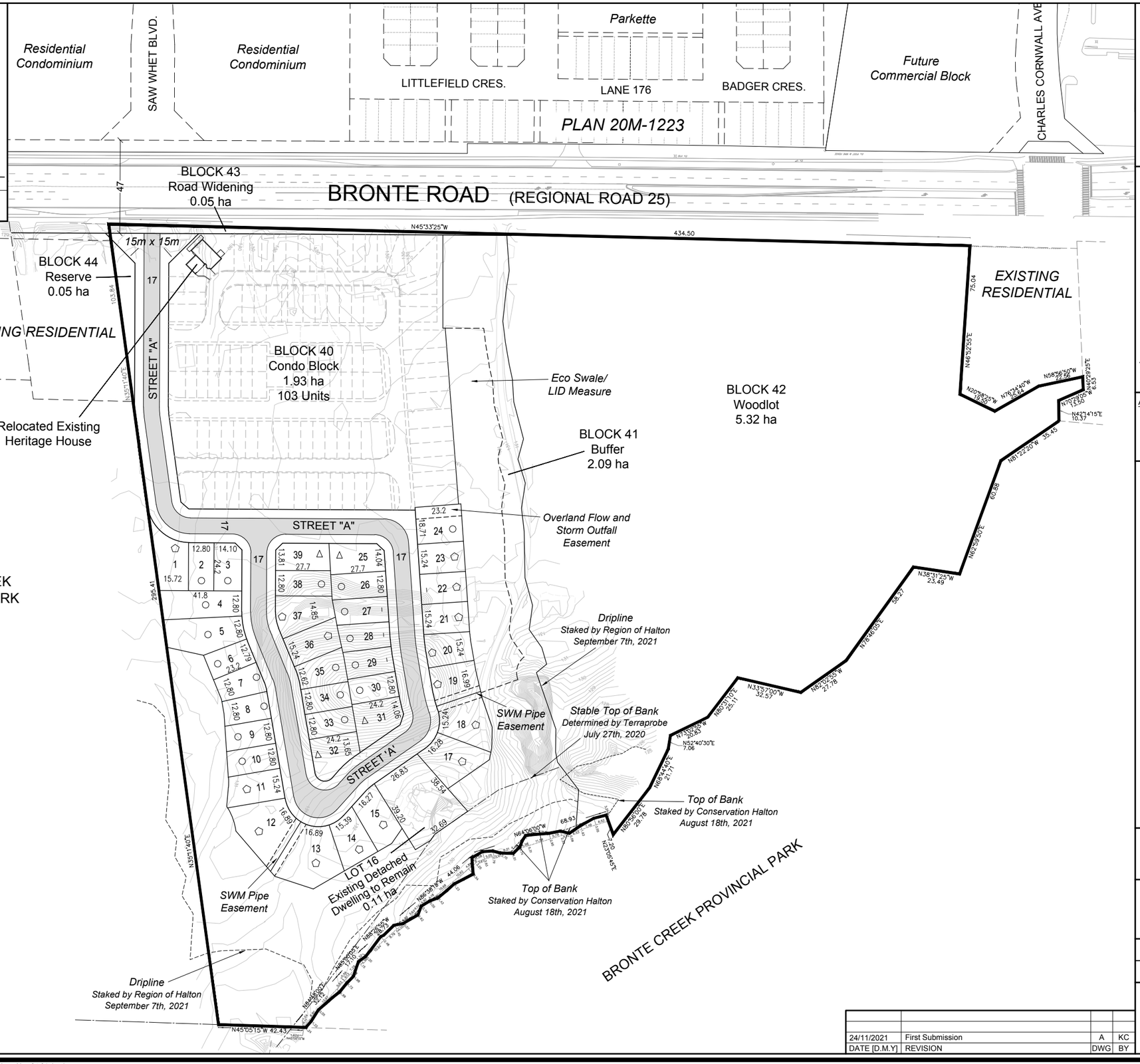
DRAWING SCALE:
PROJECT NUMBER: 20041
DRAWN BY: CHECKED BY:
DRAWING VERSION:
PLOT DATE: January 7, 2022
DRAWING SHEET NUMBER: SP

DRAFT PLAN OF SUBDIVISION
24T-
Bronte River, LP

1300, 1316, 1326, 1342, and 1350 Bronte Road
PART OF LOT 31
CONCESSION 2, SOUTH OF DUNDAS STREET

GEOGRAPHIC TOWNSHIP OF TRAFALGAR
NOW IN THE
TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON





OWNER'S AUTHORIZATION

I HEREBY AUTHORIZE KORSIAK URBAN PLANNING TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF OAKVILLE FOR APPROVAL.

SIGNED _____ DATE September 2, 2021
Gord Buck
Bronte River, LP
4900 Palladium Way, Suite 105
Burlington, Ontario L7M 0W7

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED _____ DATE September 2, 2021
Thomas J. Salb, OLS, OLIP

J.D. BARNES LIMITED
LAND INFORMATION SPECIALISTS
SURVEYING MAPPING GIS
491 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C7
T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

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

A) SHOWN ON PLAN
B) SHOWN ON PLAN
C) SHOWN ON PLAN
D) SHOWN ON PLAN
E) SHOWN ON PLAN
F) SHOWN ON PLAN
G) SHOWN ON PLAN
H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
I) SANDY LOAM
J) SHOWN ON PLAN
K) SANITARY AND STORM SEWERS TO BE PROVIDED
L) SHOWN ON PLAN

LAND USE SCHEDULE

Land Use	Lots/Blocks	Lot / Block Total	Area (ha)	Units
⬠ Single Detached (15.24 m)	1, 11-15, 17-23, 36, 37	15	0.72	15
○ Single Detached (12.80 m)	2-10, 24, 26-30, 33-35, 38	19	0.69	19
△ Single Detached (12.50 m)	25, 31, 32, 39	4	0.16	4
Existing Detached Dwelling to Remain	16	1	0.11	1
Condo Block	40	1	1.93	103
Buffer	41	1	2.09	
Woodlot	42	1	5.32	
Road Widening	43	1	0.05	
Reserve	44	1	0.05	
17 m ROW (573 m)			1.00	
Total	44	44	12.12	142

FIGURE 7B

NOTES:
- Pavement illustration is diagrammatic
- Local to Regional Road daylight triangle = 15 m
- Local to Local daylight triangle = 3.5 m

DATE [D.M.Y]	REVISION	DWG	BY
24/11/2021	First Submission	A	KC

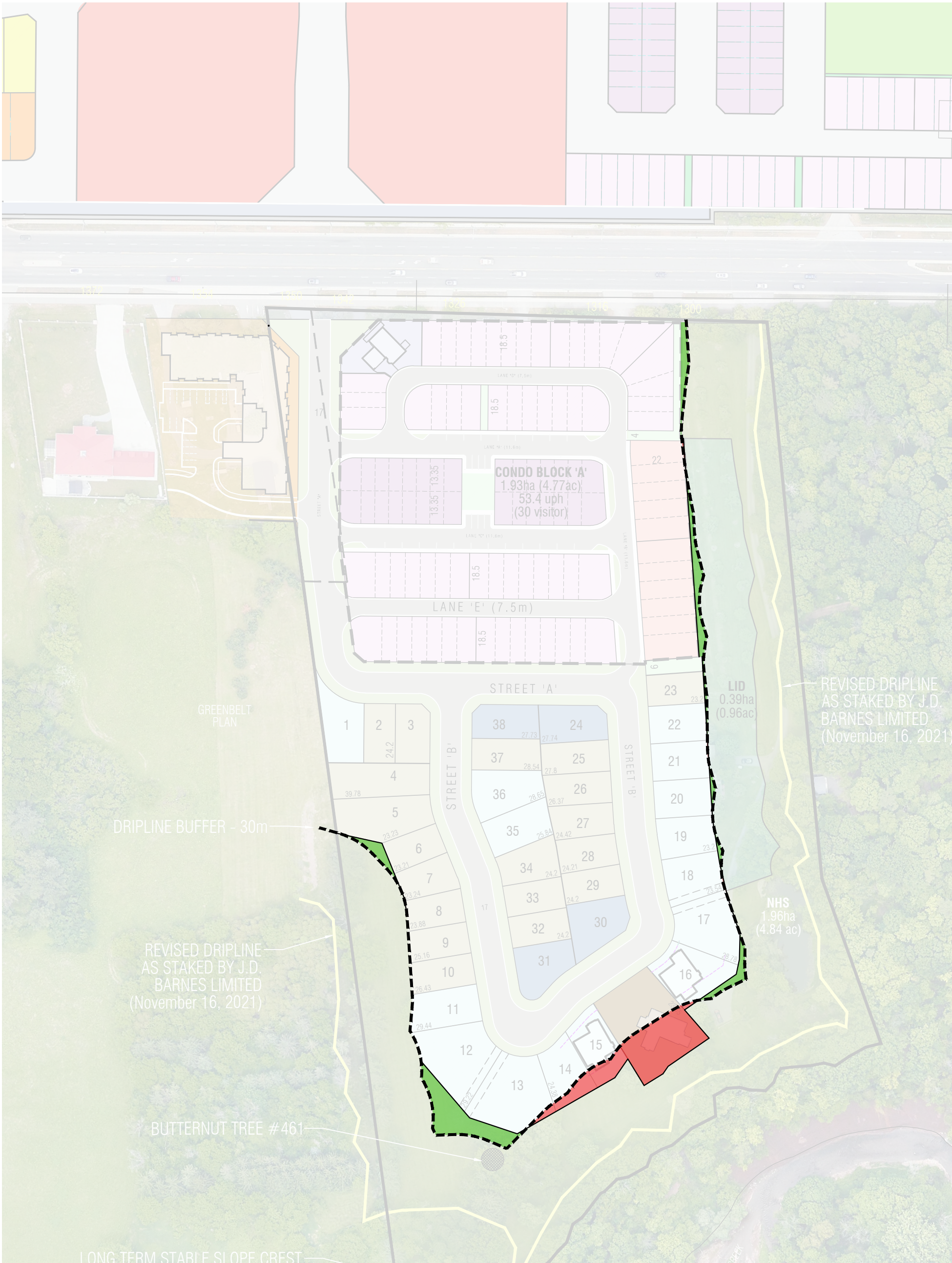
ARGO DEVELOPMENT CORP

SCALE 1:2000	November 24, 2021
DRAWN BY: KC	CHECKED BY: SE

A

KORSIAK Urban Planning
206-277 Lakeshore Road East
Oakville, Ontario L6J 1H9
T: 905-257-0227
info@korsiak.com

S:\Korsiak & Company\ARGO\Enns\Draft Plan\2021-11\Argo - Enns - Draft Plan - Nov 24 21_kc.dwg



NET GAIN/LOSS TO PRELIMINARY RNHS

Preliminary NHS	2.3427 ha.	5.7888 ac.
Loss of NHS Area	-0.0852 ha.	-0.2105 ac.
Gain of NHS Area	0.0852 ha.	0.2105 ac.
Net NHS Area	2.3427 ha.	5.7888 ac.
Net Gain of NHS Area	0.0000 ha.	0.0000 ac.

FIGURE 8

- 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: FBS, 2012

GERRARD DESIGN

BRONTE RIVER | Oakville, Ontario

NET GAIN/LOSS TO PRELIMINARY RNHS

PROJECT 1637
DATE DEC 21, 2021
SCALE 1:1000

Preliminary RNHS by 852m^2. To offset for this encroachment, the Enhancement Area has been expanded elsewhere to ensure no net loss of area. This has been achieved by reducing the sizes of other lots, such as Lots 12 and 13. The proposed development plan achieves a net balance in RNHS area (**Figure 8**).

8.1 Stormwater Management

Grading, servicing and stormwater management details are outlined in the Functional Servicing and Stormwater Management Reports prepared by Urbantech Consulting (December 2021) and the Conceptual Channel Design and Erosion Assessment prepared by GEOMorphix 2021. Water supply and sanitary will be provided to the community by making connections to existing municipal services along Bronte Road. In terms of stormwater management, two options were explored by Urbantech, including a conventional wet pond that would discharge to the storm sewer on Bronte Road. This option was not pursued as it would not represent an efficient use of the land. To direct all site drainage to a wet pond requires more extensive earthworks, importation of fill, as well as more long-term maintenance. The other option was to utilize a bio-filtration swale that would collect drainage from the majority of the site and outlet to the Bronte Creek Tributary, with remaining drainage controlled by a super pipe that ultimately outlets to 14 Mile Creek. In evaluating these options, Urbantech concluded that the latter option is preferred for the reasons outlined in Table 4-2 of the FSR.

ROP Policy 117.1(9) permits essential utility facilities within the RNHS. The definition of 'Utility' in the ROP includes stormwater systems. As such, through this EIA, and other supporting documents such as the FSR, it is necessary to demonstrate that the bio-filtration swale within the RNHS is essential. In addition, the EIA must demonstrate that the bio-filtration swale will have no negative impacts on the RNHS and that the removal of the small wetland associated with the small dug pond and any required minor tree removal to facilitate the restoration of a natural channel in this area will not have a negative impact on the natural features and areas or their ecological functions (ROP Policy 118(2)b)). In order to demonstrate that the LID feature within the RNHS is essential, Beacon has considered the associated impacts and benefits.

The proposed bio-filtration swale and naturalized outfall have been designed to meet required quality and quantity controls, including enhanced Level 1 protection that will be provided through OGS units prior to discharge from two outlets to the bio-filtration swale. The bio-filtration swale has been designed to fully contain runoff from the 25 mm event. Runoff will percolate through the floor of the bio-filtration swale through engineered topsoil (special topsoil/sand mixture). Beneath engineered topsoil is a rock gallery with a perforated under drain that collects filtered flows that are released to the natural outfall channel. An impervious liner is proposed beneath the bio-filtration swale to preclude groundwater intrusion into the filter and underdrain. This bio-filtration swale has been proposed to be located outside the 10 m woodland buffer, but within the 20 m Enhancement Area. This 30 m area is currently zoned as Natural Area and stormwater management is a permitted use. Beacon advises that it would be preferable to keep the facility outside of the 10m woodland buffer and considers this type of green infrastructure compatible with the RNHS as it provides ecological benefits to the receiving watercourses and provides for additional protection to the woodland by functioning as a naturalized barrier between the Key Feature and the residential development. As the Town may need to access to periodically maintain the bio-filtration swale, it is recommended that the existing driveway on 1300 Bronte Road be used for access, to the extent feasible, and that it double as a trail if so desired by the Town. To connect the community to the adjacent woodland and existing trail system, it is recommended that the

stormwater outlet easement located beside Lot 24 be utilized for a potential trail connection across the bio-filtration swale in the future.

Option A – Naturalized Outfall to BCT

The Study Team outlined their proposed stormwater outfall option during the August 18, 2021 site visit with Town and CH staff. This option involves the removal of the small dug pond and the creation of a restored channel immediately upstream of BCT, as well as some localized restoration of BCT downstream of the outfall. BCT currently functions as a natural outlet for runoff from the dug ponds on the site and erosion was observed during the site visit. GEO Morphix has investigated the suitability of releasing stormwater to this location and has confirmed that BCT can accommodate the proposed release rates from the bio-filtration swale with no increased, and potentially decreased, erosion. GEO Morphix has prepared a design to remove the dug pond and connect this restored channel to BCT near the top of the valley slope (2021). A design for the outlet channel based on natural channel design and ecological principles has been prepared by GEO Morphix (2021) and is provided under separate cover. This design provides opportunity for improved riparian conditions through the removal of the online dug pond and creation of pocket wetlands and will also provide for additional erosion protection along BCT.

To facilitate the construction of the naturalized channel and removal of the smaller dug pond some minor work within the Significant Woodland will be required. It is estimated that an area of approximately 265m^2 will be temporarily affected, but immediately restored. An additional area of 1,660m^2 outside the Significant Woodland, but within the buffer and Enhancement Area will also be temporarily affected and immediately restored. The majority of this work will take place on the Subject Property however, there are some localized erosion protection measures proposed along that portion of BCT within the Bronte Creek Provincial Park lands. For those works, permission will need to be obtained from both Conservation Halton (pursuant to Ontario Regulation 162/06) and from Ontario Parks. For outfall details refer to FSR Drawing Sheet PP-3 and GEO Morphix Drawing Sheet GEO-1 (2021).

Option B – Bronte Creek Outfall

During the site visit on August 18, 2021, CH staff requested that an alternative outlet be considered. Specifically, CH requested that the construction of a stormwater outfall directly to the base of the main Bronte Creek valley be explored through the use of 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, 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 entirely 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 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 filling 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.

Preferred Approach

Based on the analysis of both alternative outfall options, the Study Team is confident that the naturalized outfall to BCT will have a significantly lower impact on the natural heritage and natural hazard features, can be designed to maintain or potentially reduce erosion along BCT and maintain the vast majority of the work on the Subject Property with only limited restoration/erosion protection works on Bronte Creek Provincial Park lands.

The above analysis has demonstrated that: (1) the outfall within the RNHS is essential (ROP Policy 117.1(9); and, (2) that the outfall at the upstream limit of BCT is significantly less impactful to the natural heritage and natural hazard systems as compared to an outfall to the main valley and that the outfall to BCT will have no negative impact to the RNHS (ROP Policy 118(2)(b).

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 Property. The proposed redevelopment has been designed to avoid developing within any significant natural heritage features and natural hazards and generally achieves this with the exception of the naturalized channel, downstream of the bio-filtration swale, that is required to convey runoff to BCT. This outfall has been designed with a small footprint and is anticipated to improve natural heritage and natural hazard conditions in this area and downstream.

As the proposed development plan has been designed to avoid Key Features, Linkages, Buffers, and most Enhancement Areas and natural hazards, direct impacts have generally been avoided. As such, potential impacts resulting from the redevelopment are limited to indirect impacts which 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 Property, 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.

Table 9. Impact and Mitigation Assessment

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
Geology	**Bedrock Geology**	Grading and Servicing	Bedrock on the Subject Property is at least 6 m below ground surface and will not be impacted by grading and servicing (Terraprobe, 2016).	• None	Neutral
	Surficial Geology/ Physiography/ Topography	Site Preparation, Grading, Servicing	The topography of the Subject Property is generally flat and bordered by steep valleylands to the south and west. To accommodate future development, the Subject Property 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 naturalized channel, do not grade 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**	Grading, Servicing and Development	The direction of groundwater flow in the larger area is expected to be 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 has the potential to disrupt the pre-existing groundwater flow dynamics at the site.	• 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 are likely as a result of the removal of the large pond • 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 2021). • Implement the Stormwater Management strategies as detailed in the FSR (Urbantech 2021).	Neutral

	Dewatering	Grading, Servicing and Development	The two dug 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.	• 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.
				  ○ Where dewatering is required, effluent shall be discharged in a way that prevents sedimentation to watercourses.
					Neutral

Surface Water	**Drainage Patterns**	Grading, Servicing and Development	Under existing conditions surface flow from 3.7 ha of the Subject Property drains to the existing ponds and then to Bronte Creek (Urbantech 2021). 3.26 ha of the property drains east to Bronte Road where it is conveyed north by an existing ditch where it eventually outlets to 14 Mile Creek (Urbantech 2021). The development of the site will result in the redirection of flows such that the majority of the site will drain to the Bronte Creek.	• Implement the Stormwater Management Strategy as detailed in Section 4 of the FSR (Urbantech 2021).	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-	• Implement proposed SWM plan and erosion control measures as detailed in FSR Sections 4 and 7 (Urbantech 2021).	Neutral-Positive

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
			filtration swale are overcontrolled to ensure the release targets are met. As the uncontrolled flows to Bronte Creek are all from pervious surfaces that will be unchanged from pre to post development, no negative impacts are anticipated		
	Geomorphological Processes	Grading, Servicing and Development	Additional flows from the proposed development have the potential to impact Bronte Creek and 14 Mile Creek. As a relative volume, the flows from the development compared to normal flows of the creeks should be considered nominal. SWM facilities have been designed to provide erosion control through expected detention and do not exceed pre-development flows.	• Implement proposed SWM plan and erosion control measures detailed in FSR Sections 4 and 7 (Urbantech 2021).	Neutral
	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.	• SWM facilities have been designed to meet MECP enhanced level protection. For more information refer to FSR Section 4.4 (Urbantech 2021).	Neutral
	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 2021).	Neutral

	Site Water Balance	Grading and Development	Grading activities and conversion of the Subject Property from rural residential lands to a mix of urban residential development units may results in some compaction of native soils and will result in an increase in the overall imperviousness of the Subject Property. During the post-construction period, there will be an increase in the area of impervious surfaces which in turn will result in a n overall decrease in the available pervious area in which infiltration can occur. In the post-construction scenario, a decrease in infiltration volumes is anticipated. Further, there will be an increase in the volume of evaporation and runoff.	• Surficial LID techniques recommended for the Subject Property include:
				  ○ Increasing topsoil thickness across lots and boulevards;
				  ○ Directing roof runoff to pervious areas (i.e., rear yards) via downspout disconnection will be implemented to provide lot level controls
				  ○ Groundwater levels may preclude deep infiltration LID measures
				• BMPs for topsoil placement will be used to minimize compaction
					Neutral

	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.	• None	Neutral
Natural Heritage System	**Significant Woodlands**	Grading, Servicing and Development	Significant Woodlands occur along portions of the Bronte Creek valleylands and on the tableland portion of the Subject Property. With the exception of the naturalized outfall, no development is proposed within these woodlands or their buffers. It is anticipated that the tableland woodland contained within the Greenbelt portion of the Subject Property 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, however further consultation with the Town will be required.	• Restore areas disturbed for creation of naturalized outfall using locally native vegetation. • Implement woodland buffer and naturalize in accordance with CH guidelines.	Neutral
	Significant Wetlands	Grading, Servicing and Development	There are no provincially significant wetlands or regionally significant wetlands associated with the Subject Property.	• None	Neutral
	Other Wetlands	Grading, Servicing and Development	There is one wetland associated with the outfall of the small dug pond on the Subject Property (ELC Unit 3). The ecological functions of this wetland are limited due to its small size and use as an ornamental landscape features. The dug pond and associated wetland will be removed to facilitate the construction of a naturalized outfall. This will result in the loss of some wetland habitat, however the ecological impact is considered minimal and will be more than offset by the creation of three pocket wetlands along the proposed outfall channel.	• Implement pocket wetland creation as detailed in FSR (Urbantech 2021)	Neutral - Positive
	Valleylands	Grading, Servicing and Development	Significant valleylands associated with Bronte Creek overlap the Subject Property. These valleylands are entirely contained within the boundaries of the Greenbelt and are not expected to be impacted by proposed development.	• Implement woodland and stable top of slope buffers and setbacks and naturalize in accordance with CH guidelines.	Neutral

Category	Feature/Function	Proposed Activity	Potential Impacts	Recommended Mitigation/Management	Effect
	Trees	Grading, Servicing and Development	It is not anticipated that any trees would need to be removed from significant woodlands on the Subject Property to accommodate the redevelopment. To accommodate the stormwater outfalls, trees may be affected depending on the option selected. Under Option A – Naturalized Outfall, it is expected that tree removals or impacts will be nominal as the footprint is very localized. Under Option B – Bronte Creek Outfall, the footprint would be significant (~1.0 ha of forest disturbance) and for this reason, it is not preferred. With respect to trees located outside of Key Features of the RNHS, it is estimated that 241 trees and 12 tree groups would require removal. Further details can be found in the Arborist Report and Tree Preservation Plan (Kuntz Forestry Consulting - November 2021). These removals are not anticipated to adversely impact adjacent Key Features.	• Implement recommendations of Arborist Report (Kuntz 2021).	Neutral
	Birds	Grading, Servicing and Development	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 allow).	Neutral
Wildlife	**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 field surveys in 2021. The development of the tablelands is not expected to negatively impact reptile species.	• The loss of potential foraging habitats for snakes can be mitigated by retaining habitat within the buffer around the Greenbelt.	Neutral
	Amphibians	Grading, Servicing and Development	Surveys to investigate breeding amphibian habitat on the Subject Property were completed by Dance Environmental in 2013 and by Beacon in 2021. A total of three amphibian species were heard calling within the Subject Property 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 restoration of the smaller pond and creation of small wetland features.	Neutral
	Mammals	Grading, Servicing and Development	Presence of mammalian species within the Subject Property 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 Property 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.	Neutral
	Significant Wildlife Habitat (SWH)	Grading, Servicing and Development	SWH is present within the Greenbelt significant woodland. The proposed redevelopment will be situated outside the Greenbelt and not impact on SWH.	• Implement recommended buffers. • Install fencing at rear lots adjacent to the RNHS • Control access to RNHS	Neutral-Positive
	Fish Habitat	Grading, Servicing and Development	There is no fish habitat on the Subject Property. Fish Habitat associated with Bronte Creek is to be protected within the Greenbelt. There is a potential for construction or dewatering activities to indirectly impact downstream fish habitat if water is released to BCT uncontrolled or without appropriate mitigation measures.	• Potential indirect impacts to fish habitat can be reduced by implementing the following measures: ○ Prepare and implement a Dewatering Plan including fish rescue plan ○ Prepare and implement a Spill Prevention Plan. ○ 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
				○ Stabilize soils that will be exposed for long periods of time; and ○ During site preparation and construction ensure surface water is properly managed and treated using approved BMPs. • Mitigation measures for flood control, water quality, and erosion are noted above under Surface Water.	
	SAR Bats		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 over the Subject Property, Northern Myotis. There is the potential for this species to be roosting in woodlands associated with the Greenbelt on site. Development of the tablelands will not impact this habitat. Should impacts to the habitat be required for the development of outfall infrastructure or removal of the abandoned garage in ELC Unit 1, further studies will be required.	• Should impacts to the habitat be required for the development of outfall infrastructure or the removal of the abandoned building in ELC Unit 1, further studies are be recommended. Should SAR Bat habitat be confirmed, removal of the habitat will require a permit under the *Endangered Species Act* and regulations pertaining to this species.	Neutral
Provincially Threatened and Endangered Species	**SAR Species**	Grading, Servicing and Development	A species at risk habitat assessment revealed the presence of four Butternut trees. As discussed in **Section 4.4** these trees do not qualify for protection or mitigation under the *Endangered Species Act*.	• None	Neutral

10. Monitoring Recommendations

The EIA Terms of Reference 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.**

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 2021)	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 Bronte Creek Tributary	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.	Standard geomorphological methods will be implemented. Several monumented cross sections are to be established and re-surveyed annually to detect changes in channel geometry. Annual long profile surveys of the channel will monitor gradient changes. Erosion pins will be installed throughout to detect bank erosion. Changes in sediment character will be detected with repeat pebble counts. Monumented photographs will provide supplementary observations of channel conditions.	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 design 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	Same as above	Bio-filtration Swale and Naturalized Channel	Same as above	Same as above	Not Applicable	Same as above	Same as above	Same as above
Human-Related Activities in the Buffer	To document and assess human-related activities within the buffer and Enhancement Areas for the	Human-Related Activities	Location, type and extent of human related activities	Select areas of the RNHS, including the buffer and Enhancement Areas will be	Once prior to development.	None	Once at 5 years following build-out	No monitoring is proposed within Key

Project Component	Objective(s)/Rationale	Monitoring Parameter(s)	Monitoring Indicator(s)	Methods/Protocols/Analyses	Frequency & Duration*			Comments
					Pre-Development	During Construction	Post-Development	
and Enhancement Areas	purposes of evaluating effectiveness of impact mitigation measures.			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.				Features, except the naturalized outfall.

11. Policy Conformity

A summary of federal, provincial and municipal environmental protection and planning policies and regulations applicable to the Subject Property was provided in **Section 2**. An 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
***Endangered Species Act* (2007)**	The proposed development does not impact on the habitats of any threatened or endangered species.	Yes.
Greenbelt Plan (2017)	The proposed redevelopment will be confined primarily to existing developed areas outside the Greenbelt. The Significant Woodland on tableland on the Subject Property overlaps with the Greenbelt and will be protected with an appropriate ecological buffer. The only component of the proposed redevelopment that will overlap with the Greenbelt Plan is the work required to tie in the naturalized channel to the upstream limit of BCT. This work will be completed with small machinery or by hand and will not negatively impact Key Natural Heritage Features. It is expected to provide an ecological benefit through the removal of a dug pond (adjacent to, and upstream of, the Greenbelt Plan Area), improved thermal mitigation through the provision of riparian plantings, reduction of erosion and creation of pocket wetlands. This work complies with Greenbelt Plan policy as the restoration work within the Greenbelt Plan Area (i.e., the tie into the natural channel at the upstream limit of the gully) and would be considered a conservation project pursuant to Greenbelt Policy 3.2.5.1(b). Through this EIA and the accompanying FSR, it has been demonstrated that this outfall is essential and has been advanced as the preferred alternative after the analysis of all other alternatives.	Yes.
Provincial Policy Statement (2020)		
2.1.5 a) Significant Wetlands	N/A – There are no provincially significant wetlands associated with the Subject Property or within the Study Area.	Yes.
2.1.5 b) Significant Woodlands	The Subject Property supports Significant Woodlands, including the forested features to the west and south. A naturalized channel is proposed just within identified significant woodlands on the southwest corner of the Subject Property. The construction and location of the channel will be designed in a way to minimize impacts and mitigation will ensure that no negative impacts to the significant woodland or its function occurs.	Yes.
2.1.5 c) Significant Valleylands	The Bronte Creek valley is considered a Significant Valleyland. The hazards associated with his valley (i.e., stable top of slope) have been determined and serve to delineate the extent of the Significant Valleyland. The Town OP and ROP permit development within Significant Valleylands for essential public/utility works under Policy 16.1.9c and Policy 117.1(9) respectively. Most of the proposed development is located well outside of the Significant Valleyland. The construction of an outfall structure is proposed to occur on the southwest corner of the Subject Property. Alternatives to this outfall have been evaluated and Beacon is of the opinion that the outfall to BCT is the least impactful option from a natural heritage and natural hazard perspective. An outfall is required to prevent flooding and is considered an	Yes.

Applicable Policy / Legislation	Relevant EIA Findings and Recommendations	Policy Compliance
	essential public work, satisfying Policy 16.1.9c of the Oakville OP and Policy 117.1(9) and 118(2)(b) of the ROP. The outfall has been designed to minimize negative impacts on significant woodlands and work will occur to maintain habitat area and ecosystem function. Erosion and sediment control measures will be used to ensure habitat area and ecosystem functions are protected during construction.	
2.1.5 d) Significant Wildlife Habitat	Portions of the Subject Property 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 as no development is proposed in, or near, these features.	Yes.
2.1.5 e) Significant Areas of Natural and Scientific Interest	The significant woodlands on the Subject Property overlap with portions of the Bronte Creek Provincial Park Nature Reserve Zone Life Science ANSI and will not be impacted by redevelopment.	Yes.
2.1.6 Fish Habitat	There is no habitat for fish within the two artificial ponds on the tablelands of the Subject Property. These ponds will be removed for development and fish will be rescued during dewatering. As these are not naturally existing features and the fish have historically been stocked, no negative impacts are expected. There is habitat for fish within Bronte Creek, adjacent to the Subject Property. It will not be impacted by the proposed development as no development is proposed near this feature and mitigation through the form of stormwater management, erosion and sediment controls and dewatering permits will ensure no negative impacts to water quality or quantity.	Yes.
2.1.7 Habitat for Threatened and Endangered Species	There are no threatened or endangered species associated with the portion of the Subject Property proposed for redevelopment. The significant tableland woodland and garage structure contained therein, could potentially support endangered bats as discussed in **Section 5.1**. Prior to removal of the garage structure, it is recommended that exit surveys be completed to confirm whether the structure represents habitat. If confirmed, MECP will be contacted to obtain necessary permits under the ESA.	Yes.
2.2 – Water	The water resource system associated with the Subject Property and Study Area has been identified and consists of the Bronte Creek, BCT and associated natural heritage features and functions. Water quality will be improved through the removal of the dug ponds (i.e., thermal impacts) and stormwater management is proposed to minimize stormwater volumes and contaminant loads. No impacts to sensitive surface or ground water features are anticipated.	Yes.
3.1 – Natural Hazards	The redevelopment of the Subject Property will be limited to areas outside of natural hazards including the Regional Storm floodplain and stable top of slope. With the exception of the new lot created for the existing Enns residence, all new development will be outside the associated 15 m setback to the stable top of slope.	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. 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).	Yes.

Applicable Policy / Legislation	Relevant EIA Findings and Recommendations	Policy Compliance
	The EIA has demonstrated that the LID feature and outfall within the RNHS is essential infrastructure and, as such, is permitted within the RNHS as per ROP Policy 117.1(9).	
Town of Oakville Official Plan		
Town of Oakville Official Plan (2021 Consolidation)	The Town of Oakville OP identifies a portion of the Subject Property as a Natural Area due to the presence of valleylands and woodlands. Development in Natural Areas is allowed in cases of infrastructure, erosion and flood control facilities as listed in Policy 16.1.1.iii of the OP. Outfall options have been considered and a naturalized outfall is the most feasible and least impactful. It aims to minimize negative impacts on Natural Areas and maintain habitat area and ecosystem function. Encroachment of lots 13-17 into the 20m Enhancement Area has been offset to ensure no net loss of area to the Preliminary RNHS as detailed in **Section 8**.	Yes.
CH Regulation and Policies		
Ontario Regulation 162/06	With the exception of the stormwater outfall and associated erosion protection measures, development on the Subject Property will occur outside of CH's regulated area. Permits will need to be obtained from CH prior to site alterations within regulated areas. It is proposed to maintain the existing Enns house, which necessitates the creation of a lot that includes the 15m setback from stable top of slope. CH normally recommends that new lot lines be created such that the 15m regulated allowance is outside of the new lots however, in this case, simply due to the location of the existing house, this is not feasible in this one location. The proposed Enns house lot is outside of the stable top of slope however, the 15m regulated allowance extends onto the lot (as it does under existing conditions). As such, there is no change to the extent of development within the 15m regulated allowance at this location. Finally, existing structures such as sheds and decks, that are within CH's regulated area, will be removed as part of the proposed development, thereby reducing the overall risk to property within the erosion hazard.	Yes.

12. Conclusion

This EIA has been prepared in support of the redevelopment of the Subject Property. The information presented in this report is comprehensive and based on available background studies, site-specific field assessments and analyses. It integrates the findings of companion technical studies prepared by members of the multi-disciplinary Project Team and is intended to be read in conjunction with the FSR and other technical studies. The EIA has been prepared in-keeping with the EIA TOR and, as a result, is consistent with policies of the Greenbelt Plan, PPS, Region of Halton Official Plan, Town of Oakville Official Plan and Conservation Halton regulatory and planning policies.

In summary, for the Subject Property and Study Area this EIA has:

- Provided a comprehensive summary of federal, provincial, regional and local level environmental regulations and policies that govern land use planning and development;
- 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 technical studies;
- Identified the relative significance and sensitivities of natural heritage features in accordance with applicable environmental protection policies and regulations;
- Identified biophysical constraints to development based on consideration of natural heritage and natural hazard constraints;
- Identified opportunities for improvement/restoration/enhancement of the NHS;
- Identified and confirmed the boundaries of a Preliminary RNHS based on applicable provincial, regional, and local policies;
- Described components of the proposed redevelopment (grading, servicing, stormwater, trails, etc.);
- Assessed the potential impacts of these changes on Key Features of the RNHS;
- Recommended measures for avoiding and/or mitigating potential impacts to Key Features of the RNHS;
- Provided an Environmental Monitoring Framework; and
- Evaluated how the proposed development conforms to applicable environmental legislation, policies and regulations.

The proposed redevelopment plan was developed with input from the multidisciplinary study team. To satisfy the various environmental protection requirements, the redevelopment plan was prepared to respect the refined boundaries of the Preliminary RNHS and therefore direct impacts to Key Features have been avoided, save and except for proposed naturalized channel which extends slightly into the significant woodland.

Elsewhere, the proposed development plan is confined to lands outside the Preliminary RNHS, except for the proposed bio-filtration swale which will be contained within the enhancement area and provide complimentary functions to the significant woodland and protection to downstream watercourses. Several lots will encroach slightly into the enhancement area, however these encroachments have been offset by providing an equivalent area in other locations.

The impact assessment presented in this EIA focused primarily on mitigating potential indirect impacts to the RNHS and addressing infrastructure related components of the redevelopment plan.

In conclusion, it is the opinion of Beacon that:

- The proposed redevelopment will not negatively affect significant natural heritage features and functions within the Subject Property or Study Area provided that the recommended mitigation measures specified in this report (and in the companion technical studies) are appropriately implemented; and
- The proposed redevelopment, subject to approvals and permits, is consistent with the environmental protection legislation, policies and regulations at the provincial, regional and local levels.

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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.

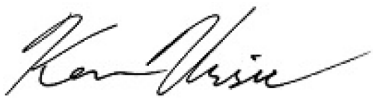
The EIA report will be components and associated tables and mapping as appropriate:

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
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		
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	-	-	0	0			X
Anemone quinquefolia	Wood Anemone	-	-	S5	-	-	7	0	X		X
Apocynum androsaemifolium	Spreading Dogbane	-	-	S5	-	-	3	5	X		X
Aquilegia canadensis	Red Columbine	-	-	S5	-	-	3	-5			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	-	-	3	5			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 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	-	2	-3			X
Bromus inermis	Smooth Brome	-	-	SE5	-	4	0	5	X		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
Carex platyphylla	Broad-leaved Sedge	-	-	S4S5	-	-	7	5	X		X
Carex radiata	Eastern Star Sedge	-	-	S5	-	-	4	0	X		
Carex rosea	Rosy Sedge	-	-	S5	-	-	0	5			X
Carex vulpinoidea	Fox Sedge	-	-	S5	-	-	3	-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
Carya cordiformis	Bitternut Hickory	-	-	S5	-	-	6	0	X		
Carya ovata	Shagbark Hickory	-	-	S5	-	-	6	3	X		
Catalpa speciosa	Northern Catalpa	-	-	SE1	-	-	0	3	X		
Caulophyllum giganteum	Giant Blue Cohosh	-	-	S5	Requires further review	-	8	0		X	X
Ceanothus americanus	New Jersey Tea	-	-	S4	-	-	6	3			X
Celastrus scandens	Climbing Bittersweet	-	-	S5	-	-	7	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	5			X
Collinsonia canadensis	Canada Horsebalm	-	-	S4	HU	-	8	0	X		X
Convallaria majalis	European Lily-of-the-valley	-	-	SE5	-	3	0	-3			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	-	-	3	-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		
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	-	2	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	-	-	0	5			X
Eutrochium maculatum var. maculatum	Spotted Joe Pye Weed	-	-	S5	-	-	3	-5	X		
Fagus grandifolia	American Beech	-	-	S4	-	-	6	3	X		X
Fragaria vesca ssp. americana	American Woodland Strawberry	-	-	S5	-	-	4	3	X		
Fraxinus americana	White Ash	-	-	S4	-	-	4	3	X		
Fraxinus pennsylvanica	Red Ash	-	-	S4	-	-	3	-3	X		X
Galium aparine	Common Bedstraw	-	-	S5	-	-	7	3			X
Galium boreale	Northern Bedstraw	-	-	S5	HU	-	0	3			X
Geranium maculatum	Spotted Geranium	-	-	S5	-	-	6	3	X		
Geranium robertianum	Herb-Robert	-	-	S5	-	-	2	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
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	-3			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	-	-	0	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	5	-5			X
Larix laricina	Tamarack	-	-	S5	-	-	7	-3	X		
Leersia virginica	White Cutgrass	-	-	S4	-	-	0	0			X
Lemna minor	Small Duckweed	-	-	S5?	-	-	5	-5	X		X
Leonurus cardiaca	Common Motherwort	-	-	SE5	-	-	0	5	X		
Leonurus cardiaca ssp. cardiaca	Common Motherwort	-	-	SE5	-	-	0	-5			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	-	-	0	5			X
Lonicera dioica	Limber Honeysuckle	-	-	S5	-	-	5	5			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	-	5	0			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		
Maianthemum stellatum	Star-flowered False Solomon's Seal	-	-	S5	-	-	0	5			X
Malus baccata	Siberian Crabapple	-	-	SE1	-	-	0	5	X		
Malus pumila	Common Apple	-	-	SE4	-	-	0	5	X		X
Matricaria discoidea	Pineappleweed	-	-	SE5	-	-	0	3	X		
Matteuccia struthiopteris	Ostrich Fern	-	-	S5	-	-	4	-3			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		

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
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	5			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	-	0	3			X
Onoclea sensibilis	Sensitive Fern	-	-	S5	-	-	4	-3	X		
Ostrya virginiana	Eastern Hop-hornbeam	-	-	S5	-	-	4	3	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	-	-	0	0			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
Picea abies	Norway Spruce	-	-	SE3	-	-	0	5	X		X
Picea glauca	White Spruce	-	-	S5	HU - native sites only (not introduced)	-	6	3	X		
Picea pungens	Blue Spruce	-	-	SE1	-	-	0	3	X		
Pilea pumila	Dwarf Clearweed	-	-	S5	-	-	5	-3	X		
Pilosella caespitosa	Meadow Hawkweed	-	-	SE5	-	-	7	5			X
Pinus nigra	Austrian Pine	-	-	SE3	-	-	0	0			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		
Poa alsodes	Grove Bluegrass	-	-	S4	HU	-	0	3			X
Poa compressa	Canada Bluegrass	-	-	SE5	-	-	0	3	X		
Poa pratensis	Kentucky Bluegrass	-	-	S5	-	2	2	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		
Populus grandidentata	Large-toothed Aspen	-	-	S5	-	-	5	3	X		
Populus x canadensis	(Populus deltoides X Populus nigra)	-	-	SNA	-	4	0		X		
Potamogeton crispus	Curly-leaved Pondweed	-	-	SE5	-	-	0	-5	X		
Potentilla simplex	Old-field Cinquefoil	-	-	S5	HU	-	9	5			X
Prunella vulgaris ssp. lanceolata	Lance-leaved Self-heal	-	-	S5	-	-	5	3			X
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	-	-	6	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		

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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	-	-	4	3			X
Rubus canadensis	Canada Blackberry	-	-	S5	-	-	2	5	X		
Rubus idaeus	Red Raspberry	-	-	S5	-	-	2	3	X		
Rubus idaeus ssp. strigosus	North American Red Raspberry	-	-	S5	-	-	2	0			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		
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	-5			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	Tall Goldenrod	-	-	S5	-	-	2	5			X
Solidago altissima var. altissima	Eastern Tall Goldenrod	-	-	S5	-	-	1	3	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
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		
Symphyotrichum novae-angliae	New England Aster	-	-	S5	-	-	2	-3	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

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
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	-	-	1	-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	-	-	1	-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	7	0			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

SWH Analysis

Appendix D

Significant Wildlife Habitat (SWH) Evaluation for the Subject Property

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
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.	**NO**
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**
Shorebird Migratory Stopover Area Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper	Suitable Habitat • Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH Suggested Criteria	• Only Spotted-Sandpiper (*Actitis macularius*) has been recorded on lands adjacent to the Subject Property (Dance Environmental 2013) during bird surveys. The Subject Property does not support sufficient numbers of individuals and suitable habitat is limited.	**NO**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
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	• Presence of 3 or more of listed species and > 1000[Í] 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		
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	• 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. • 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.	**NO**
Bat Hibernacula Big Brown Bat Tri-colored 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**
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 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	• The buildings on the developed portion of the Subject Property were surveyed and confirmed not to support suitable habitat. There is a garage structure in the Significant Woodland portion of the site that could possibly support roosting habitat, and this will be confirmed prior to demolition to ensure compliance with the ESA as it relates to SAR bats. • Potentially suitable habitat likely exists within the forested communities associated with the Subject Property and adjacent lands. Acoustic monitoring of the forested habitats has not been undertaken as no development is proposed in the Greenbelt. Furthermore, undertaking surveys for maternity roosts using MECP suggested criteria would not generate the data necessary to determine the precise numbers of individuals. For the purposed of this EIA, it is assumed that SWH is present.	**YES**
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	• 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	**NO**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
	• 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	subsequent studies, the Subject Property is not considered potential SWH.	
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	• No suitable habitat is present on the Subject Property as no burrows, rock crevices or rocky slopes have been identified on or adjacent to the Subject Property. • Dance Environmental (2013) noted nine Eastern Gartersnake (*Thamnophis sirtalis)* and one Northern Brownsnake (*Storeria dekayi*) on 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.	**NO**
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 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	• No suitable, natural habitat for colonial-nesting birds (bank and cliff) is present on the Subject Property . Potentially suitable habitat could be present along the Bronte Creek Valleylands on the adjacent lands. • Neither Cliff Swallow or Northern Rough-winged Swallow has been observed on or adjacent to the Subject Property.	**NO**
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) is present on the Subject Property or 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 lands) by Dance Environmental. This species was not observed breeding, and therefore this area is not considered potential SWH.	**NO**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
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 • Brewers 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**
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: • 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	• Suitable stopover habitat is not present on the Subject Property as the open areas are comprised on maintained lawn. 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 could potentially support this SWH category, however surveys would need to be completed to confirm MUDs.	**NO**
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	• 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**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
	• This abundance and diversity of migrant bird species is considered above average and significant		
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**
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 • ELC Communities: TAO, TAS, TAT, CLO, CLS or CLT	• Vegetation community not present on Subject Property or adjacent lands.	**NO**
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**
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	• Vegetation community not present on Subject Property or adjacent lands.	**NO**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
	• 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		
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**
Savannah	• A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60% • 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)	• Vegetation community not present on Subject Property or adjacent lands.	**NO**
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 or adjacent lands.	**NO**
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**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
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**
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.	**NO**
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)	• 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**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
	• 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		
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 • 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	• 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. • 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.	**NO**
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 seeps or springs were observed on the Subject Property. • Seeps have been noted at the base of the Bronte Creek valley slope off the Subject Property.	**NO**
Amphibian Breeding Habitat (Woodland) Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	Suitable Habitat • Presence of a wetland, pond, or woodland pool within or adjacent (within 120m) to a woodland (no minimum size) • Some small wetlands may not be mapped and may be important breeding pools for amphibians • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat 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	• Two artificial ponds within 120 of a woodland are present on 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**
Amphibian Breeding Habitat (Wetland) Eastern Newt	Suitable Habitat • Wetlands >500 m^2 (about 25 m diameter) supporting high species diversity are significant	• Two artificial ponds are associated with the Subject Property.	**NO**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
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	• 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	• No significant breeding populations (call codes of 3. or more than 20 individuals observed) have been noted on or adjacent to the Subject Property.	
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.	**NO**
Habitat for Species of Conservation Concern			
Marsh Bird Breeding Habitat American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan Black Tern Yellow Rail	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 • 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	• 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 have been noted, the Subject Property and adjacent lands are not considered potential SWH.	**NO**
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 Subject Property and adjacent lands do not support significant communities of grassland birds nor grassland species. • Savannah Sparrow (*Passerculus sandwichensis*) was the only indicator species recorded breeding on adjacent lands in 2013 by Dance Environmental. Since this was the only breeding	**NO**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
	• 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	grassland species, the Subject Property and adjacent lands are not considered potential SWH.	
Shrub/Early Successional Bird Breeding Habitat Indicator Species: Brown Thrasher Clay-coloured Sparrow Common Species: Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher Special Concern: 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**
Terrestrial Crayfish Chimney or Digger Crayfish (*Fallicambarus fodiens*) Devil Crawfish or Meadow Crayfish (*Cambarus Diogenes*)	Suitable Habitat • Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish • Constructs burrows in marshes, mudflats, meadows; the ground can't be too moist • Can often be found far from water • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels; usually the soil is not too moist so that the tunnel is well formed 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 suitable habitat is present on the Subject Property or adjacent lands. • No Terrestrial Crayfish have been noted on the Subject Property or adjacent lands. Therefore, this site is not considered to be potential SWH.	**NO**
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	• Special Concern species recorded on the Subject Property in 2021 and during previous field studies included Monarch (*Danaus plexippus*) and Eastern Wood-pewee (*Contopus virens*). The monarch was observed migrating through the Subject Property and no noteworthy habitat was observed. These species are discussed in the main text of the EIA. • Species that are listed as S1-S3 and known to be breeding on the Subject Property or within the study area that have also been listed provincially or federally as endangered or threatened are to be addressed under the *Endangered Species Act*.	**YES**

Wildlife Habitat Category and Associated Species*	Provincial Guidance for Ecoregion 7E*	Application to the Subject Property	Potential SWH
	• 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)		
Animal Movement Corridors			
Amphibian Movement Corridors 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	• 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 • 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	• 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**

* 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.