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Delmanor West Oak Inc.

Environmental Impact Study (Rev 1) in Support of a Zoning By-law Amendment

1280 Dundas St. W. and Fourth Line
Town of Oakville, Ontario

February 2022
SLR Project No.: 209.40574.00000

ENVIRONMENTAL IMPACT STUDY (REV 1) IN SUPPORT OF A ZONING BY-LAW AMENDMENT

1280 DUNDAS ST. W. AND FOURTH LINE
TOWN OF OAKVILLE

SLR Project No.: 209.40574.00000

Prepared by
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for

DELMANOR WEST OAK INC.
4800 DUFFERIN STREET
TORONTO, ONTARIO

18 February 2022

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1.0 INTRODUCTION

SLR Consulting (Canada) Ltd. (SLR) was retained by Delmanor West Oak Inc. to undertake an Environmental Impact Study (EIS) in support of a Zoning By-law Amendment (ZBA) for a proposed transitional retirement facility on lands located 1280 Dundas St. W. and Fourth Line in the Town of Oakville (the Town). An EIS is required due to the presence of natural heritage and physical features (Natural Areas) within and adjacent to the Site being subject to the Official Plan (OP) policies of the Town and portions of the Site being under the jurisdiction of Conservation Halton (CH) through Ontario Regulation 162/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Portions of the subject lands are designated under the Town's OP as Private Open Space and Natural Area (Schedule H) within the built boundary (Schedule A2). These lands are also included as an exception under policy 27.3.2 which permits uses including senior citizens' housing. This EIS was prepared based on pre-consultation and subsequent and on-going consultation with the Town and CH and in accordance with the CH EIS Guidelines (2005). The EIS report has been updated to reflect the Region of Halton's Environmental Impact Assessment (EIA) Guidelines (June 17, 2020) and a copy of Appendix D-3 of the guidelines is included in **Appendix A**.

1.1 Goals and Objectives

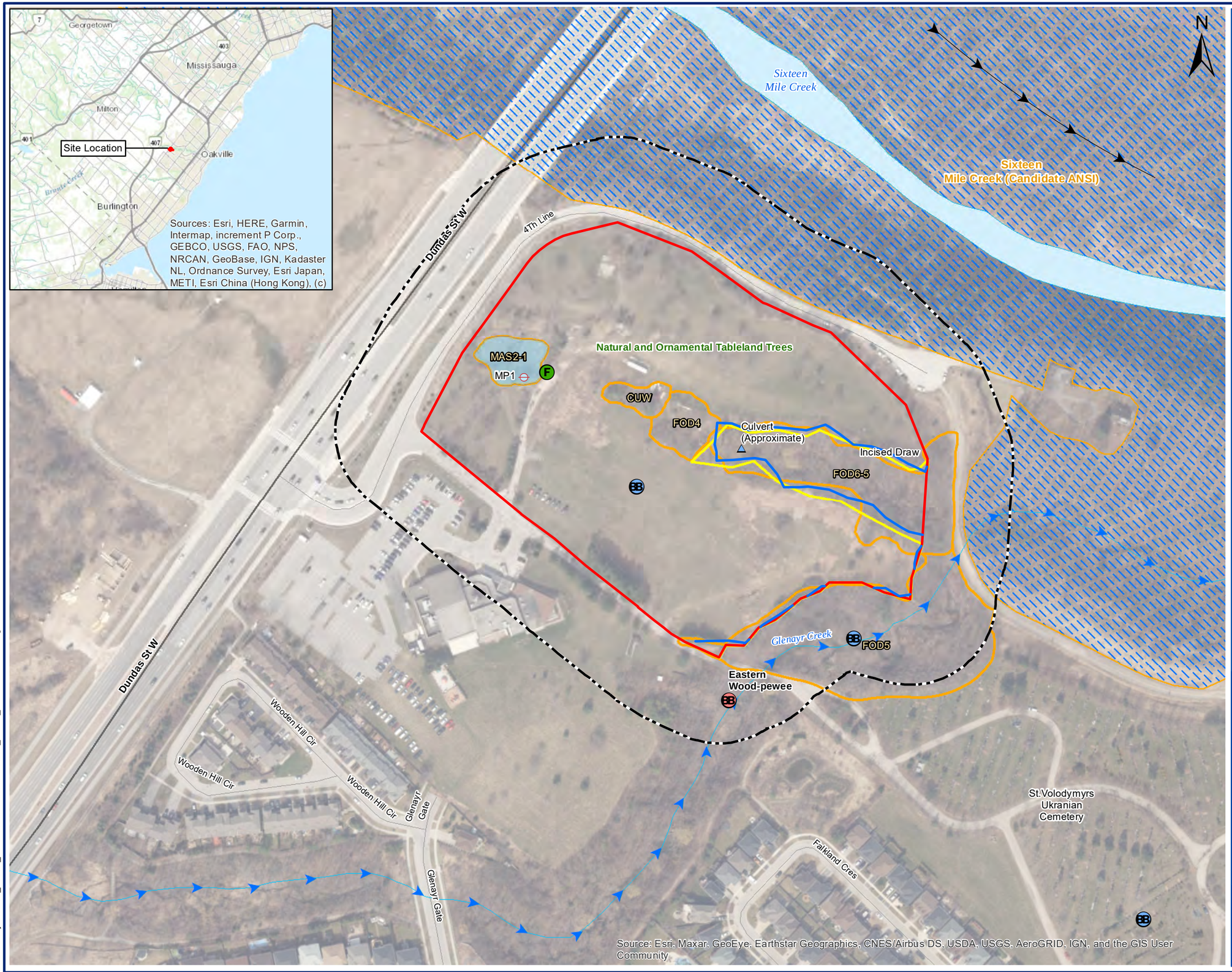
The purpose of this study is to review the proposed ZBA application and the conceptual Site Plan in the context of the Town of Oakville Official Plan (2016), in addition to the *Planning Act*, the Provincial Policy Statement (PPS) and other relevant polices as identified below. The objective of the exercise was to identify Natural Areas and confirm the appropriate limit of development using a constraints trace overlay method together with the application of policy directed set-backs and appropriate buffers.

The following instruments provide the applicable regulatory and policy framework for the zoning review:

- *Provincial Policy Statement*, Policy 2.1, 2020
- *Endangered Species Act* (ESA), 2007
- Ontario Regulation 162/06: *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* (CH)
- Livable Oakville Plan 2009 Town of Oakville Official Plan) and associated Schedules (January 15, 2016 Consolidation)
- Region of Halton Official Plan and associated Schedules (Office Consolidation June 19, 2018)
- Halton Region Integrated Growth Management Strategy (2019)

1.2 Site Location and Description

The subject property (the Site) is located at 1280 Dundas St. W. and Fourth Line in the Town within the Regional Municipality of Halton (HR). It is bounded at the northwest by the Dundas Street and Fourth Line, to the northeast by Fourth Line and Sixteen Mile Creek and to the east and southeast by Glenayr Creek, a tributary of Sixteen Mile Creek. Specifically, the Delmanor Site is located on the east side of the north-south driveway access that serves the St. Vlodymyr's lands (**Figure 1**). This EIS will primarily focus on the Site with consideration of features on adjacent lands in accordance with Policy 2.1 of the PPS (2020).



Legend

- Site Boundary
- Study Area
- Ecological Land Classification
- Shallow Pond (MAS2-1)
- Provincial - Candidate ANSI, Life Science
- Longterm Stable Top of Slope (LTSTS) (BIG Consulting November 26th, 2021)
- Staked Physical Top of Bank (Conservation Halton March 23, 2018)
- Glenayr Creek (LIO, 2018)
- Culvert (Approximate) (SLR, 2018)
- Mini-peizometer (SLR, 2018)
- Frog Survey Location
- Breeding Bird Survey Location
- Breeding Bird Observation

ELC Code	Description
CUW	Cultural Woodland
FOD4	Dry-Fresh Deciduous Forest Ecosite
FOD5	Dry-Fresh Sugar Maple Deciduous Forest
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest Type
MAS2-1	Cattail Mineral Shallow Marsh

0 12.5 25 50 Meters

SCALE: 1:2,130
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 17N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.

Basedata: World Imagery (Halton Region, 2015,01,15)

DELMANOR WEST OAK INC.

DELMANOR WEST OAK

STUDY AREA, SITE LOCATION, AND EXISTING CONDITIONS

December 9, 2021 | Revision 0 | Figure No. 1

Project No. 209.40574.00000

SLR Consulting (Canada) Ltd.

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The Site is positioned within the Sixteen Mile Creek watershed and under CH jurisdiction. The Site was formerly used as active agriculture and has been primarily used and maintained for passive recreation by St. Vlodymyr. In addition to the adjacent treed Sixteen Mile Creek valley and Glenayr Creek, the primary natural features include incised draw feature and its associated valleyland woodland, a remnant agricultural pond, and sporadically occurring mature tableland trees, maintained for aesthetic purposes. The woodland associated with the draw feature was delineated using the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) Land Information Ontario (LIO) woodland layer which is recognized the Region of Halton. This layer and associated buffer are shown on **Figure 2**.

The study area includes the site and the immediately adjacent features associated with this reach of Sixteen Mile Creek. All figures show the limits of the Study Area. The study area was chosen based on the connectivity of the natural features to the site considering the limitations that Dundas Street West and Fourth Line pose to ecological function.

2.0 AGENCY CONSULTATION AND FIELD STUDIES

Representatives from the Town and CH were engaged during the preparation of this EIS, including site visits regarding feature staking and subsequent constraint boundary adjustments. Please refer to **Appendix A** for Record of Consultation and a copy of the Draft Terms of Reference (ToR). Based on consultation and timing of the project the ToR has yet to be approved, however, the EIS was completed in keeping with the Region's Guidelines and a comprehensive scope was employed with only minor scoping. A copy of the Scoping and Terms of Reference Checklist from the Region's Guidelines (Appendix D-2) is also included in **Appendix A**.

Correspondence and meetings / site visits included:

- In-field physical top of slope and staking of features in the central and southern portions of the Site with CH, dated 28 March 2018; A visual assessment of the watercourse, pond and hydrologic feature were also completed while on-site
- Pre-consultation meeting with Town, dated 23 October 2019
- Consultation with Halton Region regarding process requirements via email chain, dated 7 November 2019
- Consultation initiation with CH regarding process requirements via email chain, dated 7 November 2019
- SLR memo to CH regarding regulation limit of the on-site remnant pond, dated 19 November 2019
- CH recommended a scoped Environmental Impact Assessment (EIA) be completed to support this application in consultation with CH, the Town and Region (Bain, December 10, 2019)
- CH advised the applicant that the pond is not a regulated wetland as per CH's policies (Bain, January 8, 2020). However, the wetland may be protected under other applicable municipal policies that will need to be reflected within the report
- A pre-consultation meeting with Town of Oakville, Region of Halton, and CH staff, April 29, 2020
- Meeting with CH to discuss limits of development, dated July 2020

2.1 Field Study Timing

A summary of the field studies performed by SLR is provided in **Table 1** and accompanied by a summary discussion of study methods in the following sections; field survey station locations are provided in **Figure 1**, as well.

Table 1: Summary of Field Studies

Date	Task	Weather[1]
March 28, 2018	SLR and CH staff staked Top of Bank; initial HDF assessment, A visual assessment of the watercourse, pond and hydrologic feature were also completed while on-site.	With Emma DeFields (edefields@hrca.on.ca); Mike Mestyan and Darko Straijn
April 26, 2018	Installation of mini-piezometers in wetland	Weather: part sun / Beaufort 2 / Temp: high: 25.1°C low: 1.6°C;
May 3, 2018	Amphibian Survey No. 1 of 2 SAR habitat, SWH	Weather: clear / Beaufort 0 / Temp: high: 21°C low: 10°C
May 5, 2018	Water levels survey; HDF flow regime review	Weather: clear / Beaufort 1/ Temp 15.5°C
May 31, 2018	Amphibian Survey No. 2 of 2	Weather: light rain; Beaufort 2 / Temp: 20°C
June 18, 2018	Breeding Bird Surveys No. 1 of 2 Passive bat ARU monitoring (hand-held, in-situ). Deployed Bat Acoustic Recording Unit (ARU), SAR habitat, SWH	Weather: clear / Beaufort 0-1/ Temp 13°C
June 26, 2018	Breeding Bird Survey No.2 of 2, Recover Bat ARU, SAR habitat, SWH	Weather: clear / Beaufort 0/ Temp 13°C
September 13, 2018	Groundwater level measurements	n/a
December 10, 2019	Water pond levels (winter)	Weather: Clear / Beaufort 0/ Temp 0°C
July 27 & 29, 2020	Tree Inventory and ELC – Kuntz	n/a
August 26, 2021	Geo Morphix Field Assessments	n/a
November 2, 2021	Confirm ELC, site features and conditions for revised submission	Weather: Clear / Beaufort 1/ Temp 5°C

3.0 METHODOLOGY

Existing conditions were characterized through a review of secondary source materials combined with field investigations to assess and delineate natural features.

The details associated with these tasks are described in the sections below.

3.1 Background Review

A secondary source review and desktop analysis was performed for data on potential presence of wildlife, in particular rare species, as well as to support the identification and characterization of natural heritage features and functions within and adjacent to the Site. The following documents were reviewed:

- Ontario Geological Survey Mapping (OGS)
- Recent air photos of the site
- Bird Studies Canada, 2005. Ontario Breeding Bird Atlas (OBBA)
- E-Bird Ontario (Online records Database for Oakville)
- Ontario Ministry of Natural Resources and Forestry (MNRF), 2020. Natural Heritage Information Centre (NHIC) rare species records
- Ontario Ministry of Natural Resources and Forestry, Land Information Ontario “Make a Map” 2019, Accessed September 2019 and July 2020
- Ontario Ministry of Natural Resources and Forestry, Land Information Ontario (LIO), Wetlands, ANSI, Natural Features, LIO metadata, Downloaded October 2019
- Oakville Wildlife Strategy (OWLS), 2012
- Ontario Species at Risk List (O. Reg. 230/08) under the ESA 2007
- Fisheries and Oceans Canada Distribution Maps for Fish and Mussel Species at Risk (on-line accessed June 2020, modified 2019-08-23)
- Halton Natural Areas Inventory (2003, 2004)
- Growth Plan for Greater Horseshoe (2019)
- Green Belt Plan
- Oakville Tree By-law (No.2008-156)
- Oakville Zoning By-law (OZBA) (2020)
- Region of Halton Official Plan (HROP) and associated Schedules, Office Consolidation June 19, 2018
- Town of Oakville, 2016. Official Plan Office Consolidation (Oakville OP)), January 15, 2016

The methodologies used to perform these field studies are provided in the following sections, together with a summary of the purpose and dates of the 2018 / 2019 field studies presented in.

[1] The Beaufort Wind Scale is a tool used to estimate wind conditions. [0] Air calm, smoke rises vertically [1] Light air movement, smoke drifts, [2] Wind felt on face, leaves rustle [3] Leaves and small twigs in continual motion, wind extends light flags [4] Wind raises dust, loose paper, moves small branches [5] Small trees begin to sway, white crested wavelets form on inland waters [6] Large branches in motion

3.2 Site Characterization

Field studies included vegetation community characterization with a botanical inventory, tree inventory, amphibian surveys, breeding bird surveys, bat acoustic monitoring, and general Species at Risk (SAR) habitat surveys during appropriate and accepted timing windows. Additionally, evidence of wildlife presence was recorded during various field investigations from incidental direct sightings, and indirectly from such indicators as nests, tracks, scats, browse and burrows.

3.2.1 Flora and Vegetation Communities

Vegetation communities were delineated and classified generally following the principles of the *Ecological Land Classification (ELC) for Southern Ontario: First Approximation and its Application* (Lee et. al., 1998) by Kuntz during their July 2020 field investigations in support of the tree inventory. ELC communities provide the basis for establishing habitat baseline conditions and support the SAR habitat and SWH screening exercises.

SLR's detailed Botanical Inventory was scoped to the tableland area and existing pond with a general botanical review competed (dominate species and understory composition to characterise the valleyland. Please refer to **Appendix B** for the botanical inventory list.

Presence surveys for Butternut trees and Butternut seedlings were completed by an MECP-qualified Butternut Health Assessor, concurrent with other SLR field investigations.

Survey Limitations

While every effort was used to detect the presence of Butternut and Black Ash by visual examination, seedlings are difficult to detect due to visibility restrictions. Furthermore, seed dispersal (squirrels) may occur and seeds may remain dormant for prolonged periods. Thus, seedlings may occur in the future especially if a parent trees occurs in proximity to the Site.

3.2.2 Feature Staking

SLR ecologists and CH confirmed and staked the boundary of the top of bank and vegetation dripline during a site walk on March 18, 2018. This exercise focused on the incised draw feature internal to the Site and the Glenayr Creek valley bounding the Site to the east and southeast. An initial review of the remnant agricultural pond was also performed during this visit. The agreed-upon staked feature delineations were surveyed by professional surveyors and are illustrated on figures provided in this report.

3.2.3 Tree Inventory and Shade Impact Study

A tree inventory was undertaken on 27 and 29 July 2020 by Kuntz Forestry Consulting Inc. (Kuntz), dated 24 August 2020 **(Appendix C**). The tree inventory addresses the Town of Oakville requirements for tree inventory and preservations plans and provides a Shade Impact Study within as well.

3.2.4 Herptiles

Secondary source literature was reviewed to identify known records of reptiles and/or amphibians potentially found within the Site, including the NHIC database. Amphibian surveys were

undertaken to determine the presence of breeding amphibians and presence of SAR species (e.g., Western Chorus Frog (*Pseudacris triseriata*)).

To understand potential breeding habitats for amphibians, calling surveys followed the general methodology of the Marsh Monitoring Program (MMP) (BSC, 2009) (adapted to site conditions) during appropriate weather conditions. One station was selected in the Site for the SLR 2018 nocturnal frog call-count surveys. Survey times are coordinated with several other ecologists conducting similar assessments at other locations throughout Southern Ontario via an email circulation used to assist surveyors in targeting the prime breeding window for early and late breeders. As climate change has the potential to shift the incidence of calling amphibians, it is increasingly important to coordinate surveys based on weather conditions and seasonal trends. Calling evidence was recorded on a scale of L0-L3 and interpreted as follows:

- L0 – No calling
- L1 – Individuals can be accurately counted; calls do not overlap
- L2 – Some calls simultaneous, number of individuals can be estimated
- L3 – Full chorus, calls overlap, individuals cannot be estimated

Reptile habitat surveys and incidental presence observations were conducted concurrently with breeding bird surveys and vegetation surveys. Reptiles are particularly difficult to document and are mainly identified by identifying potential suitable supporting habitat and searching for evidence of activity in suitable habitats or through incidental observation. For example, evidence of basking individuals and potential nesting sites for reptiles were assessed, including seeking evidence of potential overwintering habitats for turtles and evidence of potential snake hibernacula sites.

3.2.5 Breeding Birds

Scoped breeding bird surveys of the tableland area and valleyland and edge were undertaken during the breeding window in June 2018. Additional observations were also recorded during other site surveys. Surveys followed standard methodologies and weather conditions established by the Ontario Breeding Bird Atlas (OBBA) (i.e., between 5:30 and 10:00, low winds, no precipitation and suitable temperatures, two visits at least 10 days apart). Breeding evidence was recorded generally and evaluated as probable, possible or confirmed (e.g., singing male, pair observed or adult carrying food) in accordance with the standard protocols. Breeding bird field survey results are summarized in **Appendix D**, along with the OBBA results.

3.2.6 Bats

Given the recent endangered status of four species of bats under the ESA (2007), coupled with the presence of mature trees, the need to address bats was justified.

General guidance for bat surveys related to development projects under the ESA (2007) does not describe a method that fits all projects. Thus, the protocol should be adapted to the local landscape and existing conditions. While draft guidance documents have been prepared by various MNRF districts for internal use, no formal document has been developed providing direction for use by non-MNRF personnel. Surveys of tree suitability and building review are generally the preferred preliminary step to identify potential bat use. A cursory review for bat habitat presence / absence was completed concurrent with other SLR field investigations, the purpose of which was to determine if potential roost habitat occurs and if bats occur generally within the context of the Site, importantly within the tableland areas. The survey did not involve targeted emergence review of individual trees.

Scoped emergence surveys with detections observed using active (handheld) heterodynes Bat Box II, Echo Metre Touch [EMT]) were used by an SLR biologist experienced and qualified in conducting bat surveys which identify bat pulses (fly-over passes) to evaluate presence in-situ (active monitoring) over two nights, coupled with passive monitoring through deployment of an ARU June 18 through 26, 2018. Bat signals (or pulses) recorded by the ARU and handheld units were processed using SonoBat software with an automated call measurement and identification tool capability. SAR Bats in Ontario, such as Myotis species and Tri-coloured Bats, have a detection frequency equal to or greater than 40 kHz, (high), whereas non-SAR bats (e.g., Big Brown Bat, Silver-haired Bat, Hoary Bat) have call signatures that are well below this threshold (low).

Survey Limitations

While every effort was used to detect the presence of bats by visual examination and the use of ARUs, the absence of key signals is not an indication that occurrence may not occur in the future. The mobility of these species means that it is difficult to rule out bats using any type of structure for roosting or habitat for foraging in the future.

3.2.7 Aquatic Habitat

Aerial imagery, MNRF's LIO base mapping data, the NHIC and DFO online databases, and Official Plan schedules and mapping were reviewed to determine the presence of any aquatic features or fish habitat within the Site.

The presence / absence of surface water in the incised draw feature internal to the Site was performed as part of multiple field visits undertaken primarily for other purposes. No aquatic habitat mapping or fish collection was deemed necessary based on the condition and slope of this feature. The function and significance of this feature was further evaluated using the Evaluation, Classification and Management of Headwater Drainage Features Guideline (TRCA & CVC, 2014). This guideline assists in the characterization and classification of headwater water drainage feature (HDF) conditions and the determination of recommended management scenarios.

A mini-piezometer was installed and investigate the shallow groundwater / surface water interaction within the remnant pond for a duration of six months in 2018. Periodic groundwater elevations within the pond were obtained to determine whether the pond receives seasonal groundwater contributions and to assess pond function. Periodic observations of discharge (presence / absence) were made during various site visits in the spring and summer of 2018.

Finally, a CCTV investigation of the pond outlet culvert and subterranean drain was completed in fall 2019 to investigate connection between this feature and the incised draw feature (HDF) in the centre of the Site.

3.2.8 Species of Conservation Concern

For this EIS, species that are designated federally, provincially and which are of regional or local interest (e.g., rare to the watershed or municipality) are collectively identified as Species of Conservation Concern (SOCC). Species protected under the ESA (2007) and aquatic species federally listed on Schedule 1 of the *Species at Risk Act* (SARA) are also included in this category. Secondary data sources are included above in Section 3.1 while targeted wildlife investigations performed as part of this study included amphibian, breeding bird and bat surveys (Sections 3.2 to 3.7). Given the scope of this assessment, a habitat-based approach was also applied to evaluate the potential for SOCC to occur within the Site and adjacent lands.

A screening of natural heritage information was undertaken using data listed in **Section 3.1** and 3.2, including current Ministry of the Environment Conservation and Parks (MECP) guidelines *Clients Guide to Preliminary Screening for Species at Risk (Draft 2019)* within and adjacent to the Site to identify potential candidate species to be included in this assessment.

3.2.9 Significant Wildlife Habitat

The criteria provided in the MNRF Significant Wildlife Habitat Technical Guide and Ecoregion Criterion **Schedules 7E** (MNRF, 2015) for significant wildlife habitat (SWH) was reviewed. Anthropogenic features do not qualify as SWH, and therefore was not assessed.

4.0 EXISTING CONDITIONS

To characterize the Site and immediately adjacent lands a review of available information was completed. Policy information was reviewed to determine the connection between the context of policy and planning and the site conditions. Following the background, secondary source and historical information review an assessment of the current site conditions was completed at the Site.

4.1 Secondary Source Review Results

Below are the details of the information collected through background and secondary sources.

4.1.1 Landscape Context

The Site exists within the Lake Erie Lowland Ecoregion (7E) of the Mixedwood Plains Ecozone (Environment Canada 2005). Ecoregion 7E contains Carolinian forest where vegetation is typically quite diverse, with common woodland tree species include sugar and silver maple, beech, white and red oak, shagbark hickory, black walnut, butternut, red and black ash, balsam poplar, black cherry, bitternut hickory, and tulip tree.

The Site is entirely within the South Slope Physiographic Region of southern Ontario (Chapman and Putnam, 1984). In Oakville, the South Slope includes the strip of land between the Lake Iroquois shoreline to the south and the Peel Plain to the north. The topography in the till plain is typified by gently undulating to fluted with low relief and poor to moderate drainage. Drainage in the study area generally follows a linear pattern.

Active surrounding development together with historic agricultural and existing passive recreational practices on the Site have influenced the naturalized vegetation and habitat of the Site.

4.1.2 Subwatershed

The Site falls within the Sixteen Mile Creek Watershed (CH, 2020), within its Main Branch Subwatershed (MOECC, 2017; CH, 2019). This Subwatershed is characterized by the Sixteen Mile Creek valley, a prominent feature forming the northeastern boundary of the Site, and which is deeply incised down to underlying shale (MOECC, 2017). The Creek's valley provides a major discharge area, and seeps are found along the walls of the valley (*ibid*).

4.1.3 Land Use and Zoning By-law Designations

Review of the *Planning and Justification Report: 1280 Dundas Street West* (MacNaughton Hermsen Birtton Clarkson Planning Limited, 2020) indicates that the Site, which is currently

vacant, forms a portion of the St. Volodymyr Cultural Centre. The Site will be severed as its own development block, while the St. Volodymyr Cultural Centre and associated cemetery will remain to its south as its own parcel. The report indicates surrounding land uses as follows:

- The Oakville OP Schedule A1: Urban Structure (2016) designates the Site and surrounding area as Residential Area, as Urban Area, per Map 16: Key Features within the Greenbelt and Regional Natural Heritage Systems of the HROP (2018), and Private Open Space within the Oakville OP Schedule H (2016). It is zoned Private Open Space (O2 sp:122) (OZBA, 2020)
- To the north, the Site is bounded by Fourth Line, then Dundas Street West, beyond which to are additional vacant lands in use by telecommunication facilities and also designated as Urban Area (HROP, 2018). It is zoned primarily Existing Development (ED) by (OZBA, 2020)
- To the east, the Site is bounded Fourth Line where it ends near the south; there, it becomes municipal right-of-way. Further east beyond the road are valleylands associated with Sixteen Mile Creek, designated as Key Features (HROP, 2018) and as Natural Area by the Oakville OP Schedule H (2016). It is zoned Natural Area (N) by Oakville Zoning By-law (OZBA, 2020)
- To the south lies Glenayr Creek which is also designated as Key Features (HROP, 2018) and Natural by Oakville OP Schedule H (2016), beyond which lies St. Volodymyr Ukrainian Cemetery designated Private Open Space by Oakville OP (2016), then a residential neighbourhood, all designated as Urban Area (HROP, 2018) with the residential designated as Low Density Residential by Oakville OP Schedule H (2016). It is zoned a combination of Natural Area, Cemetery (CEM), Stormwater Management Facility (SMF), and Residential Low (RL6) (OZBA, 2020)
- To the west lies the St. Volodymyr Cultural Centre, beyond which lies residential which is designated as Low and Medium and High Density Residential by Oakville OP Schedule H (2016). It is zoned a combination of Natural Area, Park (O1), Residential Low (RL7), and Residential Medium (RM1) (OZBA, 2020)

4.1.4 Designated Natural Heritage Features

Review of the NHIC Make-A-Map natural feature mapping online tool (2020) designates Sixteen Mile Creek as Urban River Valley. The Creek, along with the wooded portions within the Site, are also therein designated as Natural Heritage System.

Policy 16.1 of the Town's OP provides the permitted uses and protection direction for land development applications positioned within or adjacent to Natural Areas. Schedule B of the Town's OP identifies the Sixteen Mile Creek valley as an Area of Natural and Scientific Interest (ANSI) and an Environmental Sensitive Area (ESA) (**Figure 1**). The Halton Natural Areas Inventory (HNAI, 2006) identified a significant portion of the Sixteen Mile Creek valley as ESA #16. The boundary of the ESA extends along the Sixteen Mile Creek valley from Derry Road south to Lake Ontario. Due to its size, this area supports a significant number of native plant and wildlife species, including are nationally, provincially, and locally rare species. The length and location of the valley allows movement of both terrestrial and aquatic species, including migrating birds, large mammals such as white-tailed deer and fish.

This valley together with the Glenayr Creek valley forming the east and southeast boundary of the Site and a portion of the incised draw feature are also identified as Valleylands and Floodplain on Schedule B and their treed portions are identified as Woodlands. Existing conditions are illustrated on **Figure 1**.

The site investigations and data analysis completed in support of this EIS together with the feature staking exercise in March 2018 have further refined the position and extent of these Natural Areas and identified Significant Wildlife Habitat 9SWH) and Natural Corridors within the adjacent larger valley systems.

4.1.5 Geological, Hydrogeological and Hydrological Conditions

The site and surrounding lands are located within the South Slope physiographic region. This region is situated on the southern slope of the Oak Ridges Moraine and is characterized by a subdued morainic topography that is underlain by till plains with sand and gravel deposits. Drainage of the region is typically oriented and controlled by the direction of the predominant regional south-facing slope with exposed red shales of the Queenston Formation common on valley walls. The surficial geology is characterized by clay to silt-textured till derived from glaciolacustrine deposits or shale. (Geo Moprhix Ltd., 2021)

The available well records (MECP, 2021) note that the site within the vicinity of the pond is comprised of clay to a depth of 2 m and underlain by shale (soft to approximately 4 m). Fresh groundwater is located approximately 4 m below ground surface. Groundwater at the bottom of the incised channel feature within the are of the tributary that confluences to the east with Sixteen Mile Creek noted salty groundwater at a depth of approximately 46 m below ground surface.

Historical air photos were obtained by Geo Morphix as part of the erosion hazard and mitigation assessment. The aerial photos show drainage features in a northwest to southeast orientation coming from upstream actively cultivated areas. The central ravine with a narrow woody riparian buffer was apparent as early as the 1934 air photo obtained. In the 30s residential development was visible on the site. The pond which currently exists on site was constructed by the 1954 aerial photo and also showed a connection through a narrow-forested buffer but it was not apparent if flows travelled above or below grade. In the 1970s it appears that any potential upstream connection north of Dundas Street West was redirected to flow directly east to Sixteen Mile Creek.

Based on the available secondary sources the hydrology of the site seems to be divided to the north by Dundas Street West and the east by Sixteen Mile Creek. Any source of flows within the incised drainage feature would be sustained by overland flows with very limited potential for seeps or groundwater input.

4.2 Field Results

The following sections outline the existing conditions at the site based on the field studies completed to characterize the site between March 2018 and November 2021.

4.2.1 Flora and Vegetation Communities

Review of the NHIC database indicated no occurrence records for flora ranked provincially as Endangered, Threatened, or Special Concern.

The natural vegetation communities assessed by Kuntz (2020) within the Site and the immediate valleylands are considered common and secure in Ontario. No regionally or locally flora were observed. **Table 2** outlines the communities assessed and summarizes the dominant vegetation

cover. For further tableland vegetation composition, please refer to the accompanying *Tree Inventory and Preservation Plan & Shade Impact Analysis Report* (Kuntz 2020) (**Appendix C**).

Table 2: Summary of Vegetation Communities

Vegetation Community Type	Community Characterization	Comments
Pond – MAS2--1	Cattail Marsh Reed Canary Grass Multiflora Rose Zigzag Goldenrod Spotted Jewelweed	Crack willow riparian with Manitoba maple
Tableland (Anthropogenic) No ELC Code	Community resulting from, or maintained by, cultural or anthropogenic-based disturbance. Vegetation communities often have a large proportion of non-native plant species. Black Locust Basswood Black Walnut Silver Maple Common Lilac Tufted Vetch Norway Spruce White Spruce	Manicured grass, and former amenity area (barn, storage structures) with planted trees
Remnant Hedgerow No ELC Code	Planted rows of Coniferous trees Cedar, Spruce Eastern White Cedar	Top of finger to staked valleyland Limit Refuse dumping, storage
Vegetation north of Incised Channel FOD4: Dry-Fresh Deciduous Forest Ecosite and CUW: Cultural Woodland	Community resulting from, or maintained by, cultural or anthropogenic-based disturbance. Vegetation communities often have a large proportion of non-native plant species. Black Locust Manitoba Maple Ash Buckthorn Sumac Cedar Crack Willow Dog Strangling Vine Burdock Goldenrod species\ Garlic mustard	Treed community (deciduous dominated with “old field species” on the tableland outside of the staked top of bank)

Vegetation Community Type	Community Characterization	Comments
Incised Channel FOD6-5: Fresh-Moist Sugar Maple-Hardwood Deciduous Forest Type	Sugar Maple Black Locust White Ash Beech Basswood Red Maple Shagbark Hickory Crack Willow White Oak Bitternut Hickory	Treed community within the valley (deciduous dominated) with “old field species” concentrated at the top of the channel slope
Valleyland FOD5: Dry-Fresh Sugar Maple Deciduous Forest	Red Oak Manitoba maple Black Walnut White Ash Maple Species. Associations of: Common Buckthorn Spreading Dogbane Tartarian Honeysuckle Chicory Tall Goldenrod	Treed community (deciduous dominated with fringes of “old field species”).

SLR’s Botanical Inventory (**Appendix B**) yielded 85 species of plants, all of which are considered common and secure in Ontario. No SAR or SOCC vegetation communities or species were encountered during SLR’s surveys; this included no observations of Butternut trees or seedlings, though this species is known to occur in the general area, and might be present off-site however, SLR did not have permission to access the adjacent lands.

4.2.2 Tree Inventory and Shade Impact Study

The 2021 Kuntz tree inventory documented 193 trees, as well as 13 tree polygons, within 6 m of the proposed development and the road right-of-way. Of these, the proposed development will require removal of 92 trees and three whole tree polygons and portions of two tree polygons. Thirty-eight (38) trees require removal due to poor and/or hazardous condition. All other trees can be retained through adherence to the Kuntz (2021) mitigation and avoidance recommendations provided appropriate tree protection measures are installed prior to development. No tree SAR were encountered. The Kuntz (2021) shade impact study indicated that impacts of shade on the adjacent tree communities from the proposed development will be minimal.

4.2.3 Herptiles

Review of the NHIC database indicated no occurrence records for reptiles or amphibians ranked provincially as Endangered, Threatened, or Special Concern.

Suitable available habitat for amphibians is limited on site and scoped to the pond (wetland) with calling activity also limited for a pond (offsite in the cemetery) and the Sixteen Mile Creek valley north of the site (fourth Line) at the Dundas Street bridge crossing. Spring Peepers (L2), Gray Tree Frog (*Hyla versicolor*) (L2), Northern Leopard Frog (L1) and Green Frogs (L2) were heard within the Site at the pond. The significance of the pond is included in Sections 4.2.11 and 7.1.

American Toads (*Anaxyrus americanus*) (L1) were heard dispersed in the open manicured areas. This is not uncommon for this species as it is a habitat generalist and will move frequently in a larger area and occupy small field "puddles". Calling activity for frogs at the nearby reference site on the same night were calling at level 2 and 3, indicating that the low numbers observed on-site can be attributed to the presence of suboptimal habitat (hydroperiods, shallow standing water depth, etc.) as opposed to weather conditions. A discussion of the limited presence of amphibians at the pond and the isolated habitat are further discussed in Section 7.1.

4.2.4 Breeding Birds

Review of the OBBA 10 km by 10 km mapsquare 17PJ01, which overlays the Site, yielded 91 records of potential breeding birds. Note that the vast majority are unlikely to find suitable breeding habitat within a project's boundaries, as is the case with this Site. Review of the NHIC database indicated occurrence records for two bird SAR: Northern Bobwhite (*Colinus virginianus*) ranked as Endangered, and Barn Swallow (*Hirundo rustica*) ranked as Threatened. Northern Bobwhite are generally historic records, and no supporting habitat is found within or adjacent to the Site, therefore it is not anticipated to be present. Barn Swallow was not observed breeding nor foraging in or adjacent to the Site during SLR's breeding bird field investigations.

Birds observed on the Site during SLR's breeding surveys are typical of forested areas and urban environments. These species are tolerant to disturbances within the landscape and able to adapt to changing environments. For example, American Crow (*Corvus brachyrhynchos*), American Goldfinch (*Spinus tristis*), and American Robin, Eastern, King Bird, Eastern Phoebe, and Red Winged Black Bird were frequently encountered within the Valleyland. Two Red-tailed Hawks were observed overhead (no nest could be located) on one occasion. **Table 3** below provides a summary of breeding birds observed during SLR breeding bird surveys.

One SOCC bird, the Eastern Wood-pewee (*Contopus virens*), was also observed by SLR during the early June on one visit only within the Glenayr Creek valley. It is ranked provincially as Special Concern. A single male was heard singing from within the Glenayr Creek valley to the east of the Site. Efforts to detect breeding individuals over the subsequent surveys did not record this species meaning it could have been a vagrant. However, since this species was detected in suitable habitat during the breeding season it is considered a "probable" breeder in the adjacent valley woodland along Glenayr Creek.

Table 3. SLR Breeding Birds Observed

Latin Name	Common Name	S-Rank[2]	SARA Schedule 1[3]	[4]SARO	SLR Observation	NHIC Result
Sayornis phoebe	Eastern Phoebe	S5B			x	
Myiarchus crinitus	Great Crested Flycatcher	S4B			x	
Buteo jamaicensis	Red-tailed Hawk	S5		NAR	x	
Colinus virginianus	Northern Bobwhite	S1	END	END		x
Contopus virens	Eastern Wood-pewee	S4B	SC	SC	x	

[2] S-Ranks - Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

S1 Critically Imperiled—Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 Imperiled—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure—Common, widespread, and abundant in the nation or state/province.

S#S# Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.

SNA (Formally SE) Exotic; not believed to be a native component of Ontario's flora.

[3] **SARA** - Species at Risk Act (S.C. 2002, c. 29) Act current to 2018-07-05 and last amended on 2018-05-30.

[4] SARO - ONTARIO REGULATION 230/08 under the Endangered Species Act, 2007 species at risk in Ontario list. Act current to 2018-08-01. COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

EXT Extinct - A species that no longer exists.

EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.

END Endangered - A species facing imminent extirpation or extinction.

THR Threatened - A species likely to become endangered if limiting factors are not reversed.

SC Special Concern (formerly vulnerable) - A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

NAR Not At Risk - A species that has been evaluated and found to be not at risk of extinction given the current circumstances.

DD Data Deficient (formerly Indeterminate) - Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.

* - Species on Schedule 1 of Species At Risk Act (SARA)

Latin Name	Common Name	S-Rank[2]	SARA Schedule 1[3]	[4]SARO	SLR Observation	NHIC Result
Tyrannus tyrannus	Eastern Kingbird	S4B			x	
Hirundo rustica	Barn Swallow	S5B	THR	THR		x
Cyanocitta cristata	Blue Jay	S5			x	
Corvus brachyrhynchos	American Crow	S5B			x	
Poecile atricapillus	Black-capped Chickadee	S5			x	
Troglodytes aedon	House Wren	S5B			x	
Sturnus vulgaris	European Starling	SNA			x	
Cardinalis cardinalis	Northern Cardinal	S5			x	
Melospiza melodia	Song Sparrow	S5B			x	
Agelaius phoeniceus	Red-winged Blackbird	S4			x	
Haemorhous mexicanus	House Finch	SNA			x	
Turdus migratorius	American Robin	S5B			x	
Quiscalus quiscula	Common Grackle	S5B			x	

4.2.5 Bats

Where suitable treed habitats occur, such as larger snag trees with loose bark and cavities in woodland areas, hedgerows and landscape trees, potential suitable roosting and foraging habitat is present for SAR bats, and bats generally. Winter hibernation habitats are not present, however; summer roost sites can be under the loose bark of dead trees, the hollows of trees or within man-made structures.

Trees were assessed as having good opportunities for roosting bats (generally) but limited in the tableland area for Northern Myotis and/or Tri-coloured Bats based on current science and species biology. Mature trees and snag tree areas are associated with valleyland limits along the Top of Slope. Given that in Ontario Little Myotis (SAR) is often associated with buildings, trees are likely to be used by non-SAR such a Big Brown Bat or Hoary Bat.

During the active surveys using hand-held devices, only low-frequency calls were documented, indicating the presence of non-SAR bats. The emergence counts were low (only a few individuals at dusk) with few bat passes recorded on the devices or visually observed foraging over the tableland area.

Evidence of bats was detected at the passive ARU monitoring station established near the pond area. This is also the cluster area where the larger deciduous trees occur within the tableland area. Few high-frequency calls of SAR bats were detected at this station. The following species were identified with 98% accuracy of identification: Silver-haired Bat and Hoary Bat were recorded more frequently, with some recordings of Big Brown Bat and a few of Eastern Red Bats. The high-frequency detections (SAR bats) were faint, indicating observations were at a distance from the observer and at the range limits of the ARU. It is likely that the valleyland may provide roost opportunities for SAR bats, particularly Northern Myotis. Habitat for both SAR and non-SAR bats are protected within the features outside of the development limits.

4.2.6 Mammals

The site is likely to provide suitable habitat for urban tolerant mammals. Wildlife observed were characteristic of the culturally influenced landscapes of urban areas where species are tolerant to disturbances within the landscape and able to adapt to changing environments. Wildlife observed included Eastern Grey Squirrel (*Sciurus carolinensis*), Eastern Chipmunk (*Tamias striatus*), Raccoon (*Procyon lotor*) and White-tail Deer.

4.2.7 Aquatics

From a watershed perspective, the Site is positioned in the Lower Main Branch of Sixteen Mile Creek which extends approximately from Highway 407 to the north, south to Lake Ontario. As a consequence, the majority of the Sixteen Mile Creek drainage area occurs upstream of the Site. The steep sided valley wall of Lower Main Branch of Sixteen Mile Creek occurs to the northeast of the Site, adjacent to Fourth Line. This valley's long-term stable top-of-slope (LTSTS) feature illustrated on all of the **Figures** was derived by BIG Consultants in support of the subject application.

The Lower Branch of Sixteen Mile Creek provides fish habitat for a variety of minnow and dater fish species including Blacknose Dace (*Rhinichthys atratulus*), Longnose Dace (*Rhinichthys cataractae*), Common Shiner (*Luxilus cornutu*), Fantail Darter (*Etheostoma flabellare*) Rainbow

Darter (*Etheostoma caeruleum*). While water temperature monitoring by CH (2011) indicate this branch generally provides habitat for warm water resident fish species, the fish species assemblage indicates warm-cool water habitat is present. Migratory salmonids including salmon and rainbow trout (*Oncorhynchus mykiss*) are also present in the fall (Conservation Halton 2013. Long Term Environmental Monitoring Program Grindstone Creek, Sixteen Mile Creek and Supplemental Monitoring. Conservation Halton, Burlington, ON. 176 pp.).

A small tributary of Sixteen Mile Creek, Glenayr Creek, bounds the Site to the southeast. This tributary exhibits intermittent, seasonal flow. Diverse substrates include clay, silt and gravel with some evidence of cobble. This small tributary valley has relatively steep densely treed valley walls with an average bankful width of 1.9 m (Town of Oakville North Oakville Creeks Subwatershed Study, 2006). No existing fish community data was available for this small creek. Given that the conceptual site plan avoids disturbance of fish habitat, no fish community sampling or habitat mapping was undertaken as part of this study.

The incised draw feature protruding westward into the center of the Site appears to only receive and convey ephemeral surface run-off derived from the lands immediately surrounding the feature. While historically this feature may have received additional discharge from the remnant pond, recent CCTV investigations of the pond outlet culvert concluded the subsurface pipe is blocked / collapsed at more than one location. As such, the pond does not contribute discharge into this HDF. Early spring flow was observed on March 23, 2018. Discharge was not observed in this feature during subsequent site visits performed in May and June 2018 for amphibian and breeding bird surveys. This feature connects to Glenayr Creek through a perched culvert. The woodland habitat of both features is contiguous. While considered and evaluated as a candidate HDF, this densely treed incised draw feature almost exclusively provides steep sided valleyland terrestrial habitat.

4.2.7.1 *HDF Evaluation of the Incised Draw*

When considered in the context of the HDF Evaluation, Classification and Management Guidelines (TRCA & CVC, 2014) the following values were identified:

Hydrology Classification: Flow observations indicated that the HDF is ephemeral (that is: present only for short periods when there is greater rainfall). The remnant pond does not contribute discharge into this HDF and therefore the HDF has Contributing functions.

Riparian Vegetation: Woodland vegetation exists throughout this feature, extending along the feature's floor and along each side. The approximate width of the woodland feature varies between 20 m toward the centre of the Site to nearly 40 m near its connection to Glenayr Creek For this reason, the feature was evaluated as providing an Important Riparian function.

Fish and Fish Habitat: None. The subject HDF does not provide direct habitat. Similarly, it is unlikely that its ephemeral discharge through a perched outlet culvert provides enough flow to contribute to fish habitat in Glenayr Creek, a tributary of Sixteen Mile Creek during periods when fish may be present in that feature.

Terrestrial Habitat Classification: Woodland is present throughout this feature. No amphibian calls were recorded within this feature. At a local landscape scale, this feature provides movement opportunities for non-amphibian, urban tolerant wildlife by connecting Glenayr Creek to the remnant pond, although the use and significance of this localized function is likely low.

This feature was evaluated as providing a Contributing terrestrial habitat function based on the HDF criteria.

Management Recommendations: In accordance with the HDF Evaluation, Classification and Management Guidelines, the management recommendation for the incised draw feature HDF is Conservation. Interestingly, this recommendation is based almost exclusively on its terrestrial attributes of woodland along the incised valley, rather than for aquatic headwater functions.

4.2.7.2 *Aquatic Species at Risk*

Silver Shiner (*Notropis photogenis*), a federally and provincially Threatened fish species, is identify as being present or potentially present within the Lower Branch of Sixteen Mile Creek and the Glenayr Creek according to the DFO online SAR mapping tool (accessed September 2020). The Recovery Potential Assessment of Silver Shiner in Canada (DFO, 2012) cites the known location of Silver Shiner in Sixteen Mile Creek being 9 km ESE of Milton and therefore within the North Oakville Creeks Subwatershed lying north of Dundas Street and the Subject site. This document also notes that no sampling effort, specifically targeting Silver Shiner has been performed south of Dundas Street in the Sixteen Mile Creek watershed. Taking a precautionary approach, it is reasonable to assume that Silver Shiner could be present in the main Lower Branch of Sixteen Mile Creek adjacent to and downstream of the study area. However, given that typical suitable habitat for Silver Shiner consists of medium to large streams or rivers, usually with widths generally greater than 20 m with pools as deep as 2 m (DFO, 2012), habitat for this species is unlikely to occur in the reach of Glenayr Creek bounding the southeast limit of the Site.

Silver Shiner are a small minnow sized fish related to Carp that are often found in schools. Spawning occurs in May and June in Ontario over about a two week period, at water temperatures of 18-23 °C. This fish is primarily a surface feeder that consumes aquatic insects, crustaceans, flatworms, surface insects, and algae (DFO 2012).

While it appears relatively little is known about the threats to Silver Shiner survival and recovery, it appears that dam construction, channelization, and deteriorating water quality (turbidity, pollution and impoundments) have been responsible for population declines in other jurisdictions such as Ohio. The provincial ESA, 2007 website (MECP, 2020) suggests significant alteration of aquatic habitat, water temperature and water chemistry as threats to the species together with rapid or permanent alteration of water quantity and significant alteration of riparian and floodplain conditions. Similarly, DFO (2012) describes the greatest threats to the survival and persistence of Silver Shiner in Canada as habitat reduction, fragmentation or habitat degradation attributed to turbidity and sedimentation, nutrient loading and contaminant or other toxic substance introductions as possible threats to the survival of this species. In Sixteen Mile Creek specifically, DFO suggests that the greatest threats to Silver Shiner populations are contaminant or other toxic substances, nutrient loading and flow management.

4.2.8 Wetlands

The on-site pond located near the western site boundary can also be described using the ELC system as a Cattail Mineral Marsh (MAS2-1) (Figure 2). This feature was the subject of multiple field investigations and discussions with Conservation Halton (CH) planners and biologists. The pond is not identified as provincially significant by the NDMNRF, nor would it qualify as such using the Ontario Wetland Evaluation System (OWES) and therefore it is not a significant wetland under the Provincial Policy Statement (PPS, 2020).

It is presumed that historically the pond received more water from upstream and likely overtopped on occasion into the minor valley feature. Past roadway improvements altered inflow water contributions and then, as part of past agricultural practices on the land, the feature's outlet was piped underground into the minor valley feature. This pipe was recently investigated as part of the application's supporting studies using a CCTV camera and was found to be blocked.

Based on the data gathered and the discussions with CH, it was determined that, while the pond provides isolated low quality functions / minor wildlife habitat opportunities at local scale, it plays a near negligible role at a RNHS / watershed scale. Based on these findings, staff at CH elected not to regulate the feature as part of the lands that would require an alteration permit.

For similar reasons, the pond is not found to be a significant wetland through ROP Sections 268 and 267.5 as it is not a Provincially Significant Wetland nor does it occur within the defined Regional Natural Heritage System (RNHS) or provide an important ecological contribution to the Regional Natural Heritage System.

The primary influencing factors in these determinations include:

- the past alteration of the pond's hydrology (in flow) as a result of improvements to Dundas Street West,
- the presence of a near monoculture of cattails limiting a diversity of habitats,
- the presence of frog species in relatively low abundance and below thresholds for SWH
- the knowledge that the pond likely freezes to the bottom during some winters – a condition that would kill any overwintering frogs and result in periodic resetting of small frog populations that inhabit the feature,
- the absence of groundwater contributions as determined by in situ monitoring of a minipeizometer, and.
- the disconnect of the outflow from the minor valley feature or incised draw located in the midportion of the site and therefore negligible contribution to discharge to the Sixteen Mile Creek Valley or RNHS.

4.2.9 Significant Valleylands

The ROP does not provide a definition for valleylands as the Region defers to the definition in the Provincial Policy Statement (PPS). Accordingly, the PPS defines as valleylands "a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year." Using this definition, the Sixteen Mile Creek valley, Glenayr Creek and the incised draw qualify as valleylands. As the Sixteen Mile Creek valley and Glenayr Creek valley are wooded, contain perennial discharge and provide interior Candidate and Confirmed SWH, they are ecologically important features, contributing to the quality and diversity of the RNHS and are found to be Significant Valleylands at a regional level under Section 276.4 of the ROP. The incised draw, while less important at a regional scale due to its ephemeral discharge and smaller size, also qualifies as a Significant Valleyland due to its mature woodland cover forming a contiguous landscape connection to the other two Significant Valleylands: Sixteen Mile Creek valley and Glenayr Creek valley. Qualifying as Significant Valleylands at a regional level means that these valleylands are also considered Significant Valleylands under Policy 2.1.5 of the PPS (2020).

4.2.10 Species of Conservation Concern

The background screening, coupled with the SLR field investigations, identified potential SOCC. The list was scoped to species which may occur on the Site based on the presence of suitable habitat and excluded those species that do not have habitat affinities on the Site or are historical in nature (i.e., observations made greater than 40 years). Recently, Black Ash has been designed as Special Concern and Threatened respectively by Committee on the Status of Endangered Wildlife in Canada (COSEWIC) but is not currently listed under O. Reg. 230/08 *Species at Risk in Ontario List* under the ESA (2007). This species is included as it may be listed within the next five years. The review provided below in **Table 4** below includes a summary of species relevance to the proposed application.

Table 4. Species of Conservation Concern Screening

Common Name[5]	Scientific Name	Status[6]	Habitat Description	Habitat Present Within the Site	Surveys Conducted	Likelihood of Occurrence on Site	Potential to be Impacted	Mitigation/Compliance Requirements
Mammals								
[1]Tri-Coloured Bat	*Perimyotis subflavus*	SARA – Endangered ESA – Endangered	Forests and Barns	Limited (potential suitable trees)	Yes ARU	Limited	None to little	Timing window for tableland tree removals; Protect valleyfeature/draw feature
[1,7]Little Brown	*Myotis lucifugus*	SARA – Endangered ESA – Endangered	Attics, abandoned buildings and barns (summer); caves/abandoned mines (winter)	No	Yes ARU	Unlikely	No	None required
[1]Northern Long-eared Bat	*Myotis septentrionalis*	SARA – Endangered ESA – Endangered	Forested areas	Limited (potential suitable trees)	Yes ARU	Limited	None to little	Timing window for tableland tree removals; Protect valleyfeature/draw feature
[1]Eastern Small-footed Bat	*Myotis leibii*	SARA – Not Listed ESA – Endangered	Rocks, rock outcrops, buildings, under bridges, in caves,	Limited (potential suitable trees)	Yes ARU	Limited	None to little	Timing window for tableland tree removals; Protect valleyfeature/draw feature

[5] Source: MNRF, SARO List, SLR Experience

[6] Species at Risk Public Registry, SARO, NHIC (accessed November 2021)

[7] Previous Studies

Designation Status

Provincial Status - Species at Risk in Ontario list maintained by the Ontario Ministry of Natural Resources and Forestry, O.Reg. 230/08. Endangered Species Act Regulation OMNR S.O. 2007, Chapter 6. Schedules 1 thru 5.4. O. Reg. 242/08.

Regional or Local

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC). S3 [Vulnerable] Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

Common Name[5]	Scientific Name	Status[6]	Habitat Description	Habitat Present Within the Site	Surveys Conducted	Likelihood of Occurrence on Site	Potential to be Impacted	Mitigation/Compliance Requirements
			mines or hollow trees					
Avian								
[1]Barn Swallow	*Hirundo rustica*	SARA – Threatened ESA – Threatened	Structures, barns	No	BBS (not observed)	Unlikely	No	None
[1, 3] Chimney Swift	*Chaetura pelagica*	SARA – Threatened ESA – Threatened	Structures and Natural treed cavities	No	BBS (not observed)	Unlikely	No	None
[1,3] Red-headed Woodpecker	*Melanerpes erythrocephalus*	SARA – Endangered ESA – Special Concern	Forests	Suitable trees in association with the Valleyland/draw	BBS (not observed)	Limited	No	Protect valleyfeature/draw feature
[1] Wood Thrush	*Ammodramus savannarum*	SARA - Threatened ESA – Special Concern	Deciduous and mixed forests where there are large trees, moderate understory, shade, and abundant leaf litter for foraging	No	BBS (not observed)	Unlikely	No	None
[1,3]Eastern Wood-pewee	*Contopus virens*	SARA – Special Concern ESA – Special Concern	Deciduous forest and woodland, nearly any forested habitat, even smaller woodlots as long as it is fairly open	Suitable trees in association with the Valley land/draw	BBS (1 male observed, not observed during subsequent breeding bird surveys)	Occurs on site	Yes	Protect valleyfeature/draw feature
Evening Grosbeak	*Coccothraustes vespertinus*	SARA – Special Concern ESA – Special Concern	Winter in forests and feed in both deciduous and coniferous trees,	No	BBS (not observed)	Unlikely	No	None

Common Name[5]	Scientific Name	Status[6]	Habitat Description	Habitat Present Within the Site	Surveys Conducted	Likelihood of Occurrence on Site	Potential to be Impacted	Mitigation/Compliance Requirements
			often at higher elevations; backyard feeders					
Herpetofauna								
[2]Snapping Turtle	*Chelydra serpentina*	SARA – Special Concern ESA – Special Concern	Watercourses small wetlands and marsh features provides opportunities and movement corridors	Yes (valleyland provides a movement corridor; pond)	Incidental wildlife during all surveys and field work	Limited in the valleyland and pond	Yes – from pond removal only	Species is special concern and habitat is not protected; timing windows required to protect species
[1]Midland Painted Turtle	*Chrysemys picta marginata*	SARA – Special Concern ESA – Not Listed	Watercourses small wetlands and marsh features provides opportunities and movement corridors	Yes (valleyland provides a movement corridor; pond)	Incidental wildlife during all surveys and field work	Limited in the valleyland and pond	Yes – from pond removal only	Species is special concern and habitat is not protected; timing windows required to protect species
Flora								
[1]Butternut	*Juglans cinerea*	SARA – Endangered ESA – Endangered	Moist, well-drained soil and is often found along streams; well-drained gravel sites (rarely on dry rocky soil); does not do well in shade; often grows in sunny openings and near forest edges	Valleyland/draw feature (not observed)	Tree Inventory/ELC	Limited and not observed	No	None

Common Name[5]	Scientific Name	Status[6]	Habitat Description	Habitat Present Within the Site	Surveys Conducted	Likelihood of Occurrence on Site	Potential to be Impacted	Mitigation/Compliance Requirements
[1,3] Black Ash	*Fraxinus americana*	Not Designated under SARA or ESA but recently (2018) listed as Threatened by COSEWIC	Swampy woodlands	Valleyland/draw feature (not observed)	Tree Inventory/ELC	Limited and not observed	No	None
Woodland Flax	*Linum virginianum*	S2 Not Designated under SARA or ESA	Openings in forests, edges of forests, and dirt roads through forests on non-weedy roadsides on dry to dry-mesic thin soils	Tableland edge of the draw feature (not observed)	Tree Inventory/ELC	Limited and not observed	No	None

4.2.11 Significant Wildlife Habitat

The significance of an area as wildlife habitat is often difficult to appropriately determine at the site-specific level, as the assessment must incorporate information from a wide geographic area and consider other factors such as regional resource patterns and landscape effects. This is why, under the PPS, the planning authorities have the responsibility to identify and designate Significant Wildlife Habitat. Wildlife habitat significance includes:

- Seasonal concentration areas (e.g., conifer forests for deer wintering);
- Rare vegetation communities or specialized habitats for wildlife;
- Habitats of species of conservation interest, excluding the habitats of endangered and threatened species which are protected under the 2020 PPS and 2007 ESA); and
- Animal movement corridors.

Using criteria outlined in Ecoregion 7E Criterion Schedules and the guidance provided in the Natural Heritage Reference Manual (MNRF, 2010), no candidate SWH was identified for the tableland areas based on a review of secondary source material and/or confirmed through targeted field studies, while a limited number of Candidate or Confirmed SWH features have been identified in the adjacent wooded valleylands. Below is a summary of the findings. The full SWH assessment table can be found in Appendix D.

The following candidate SWH areas were identified:

- Woodland Area-Sensitive Bird Breeding Habitat

The following SWH were confirmed:

- Special Concern and Rare Wildlife Species (Eastern Wood-peewee)

4.2.12 Significant Woodlands

In accordance with Section 277 and 295 of the Region's Official Plan the incised draw feature includes a significant woodland. The EIS determined the woodland is significant based on Section 277.

> *Significant Woodland means a Woodland 0.5ha 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:*
>
> *(1) the Woodland contains forest patches over 99 years old,*
>
> *(2)* ***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 is located outside the Urban Area but below the Escarpment Brow, or 10 ha or larger if it is located outside the Urban Area but above the Escarpment Brow,*
>
> *(3) the Woodland has an interior core area of 4 ha or larger, measured 100m from the edge, or*
>
> *(4)* ***the Woodland is wholly or partially within 50 m of a major creek or certain headwater creek*** *or within 150m of the Escarpment Brow.*

4.2.13 Natural Corridors and Linkages

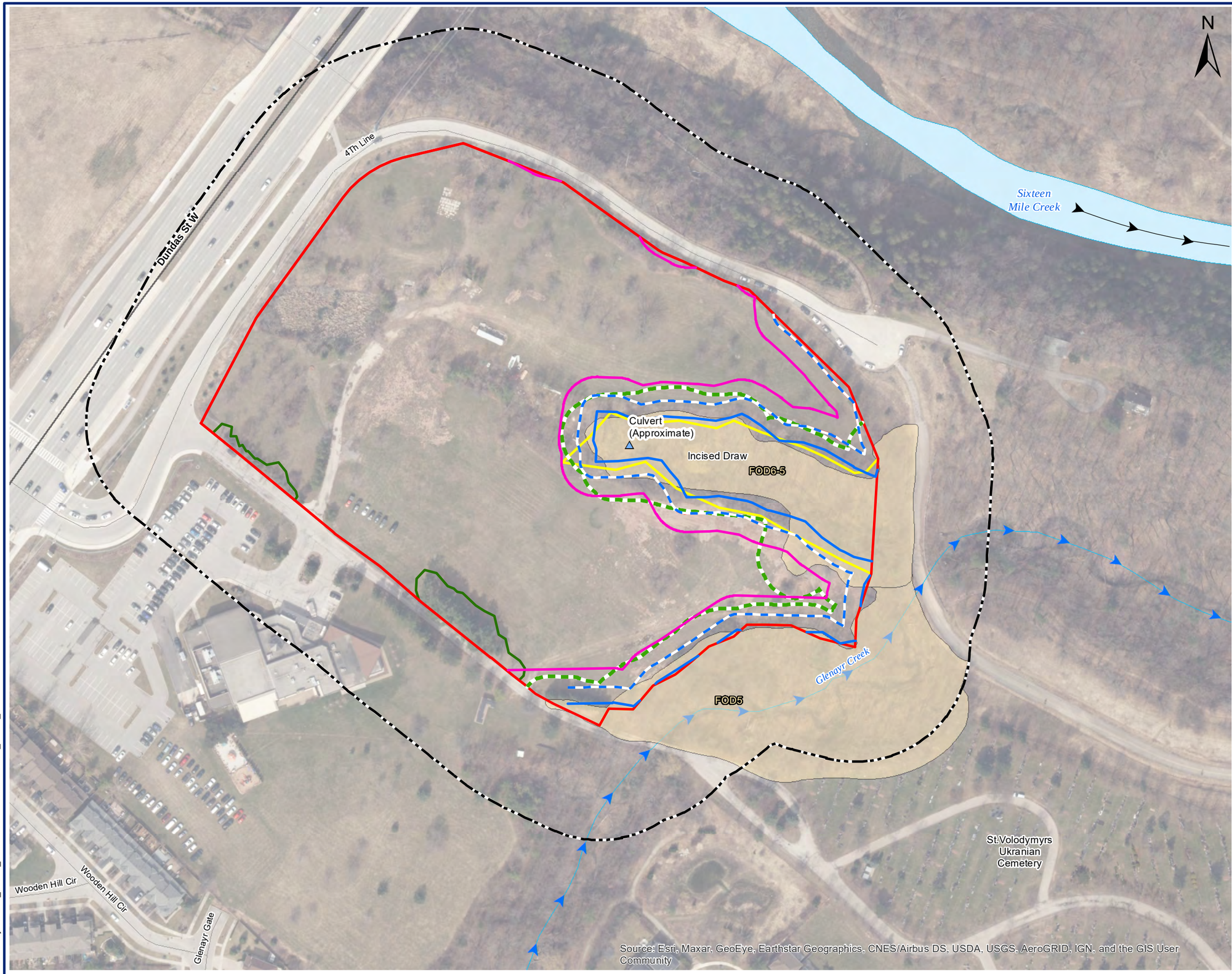
The Sixteen Mile Creek valley and Gelnayr Creek provide a Natural Corridor for wildlife movement between the natural features (woodlands) both on and off site. The connections occur along the east to west linear corridor at the south edge of the study area and north south corridor along the Sixteen Mile Creek valley providing a direct connection to habitats up and downstream beyond the Site boundaries. The treed incised draw feature provides limited connection between features off-site although likely provides a local function within the site for refuge and movement of urban tolerant wildlife. All three of these woodland valley features are included in the Regional Natural Heritage System (ROP 2018, Map 1).

4.2.14 Natural Hazards

Natural hazards are the result of naturally occurring physical and environmental processes that can pose a risk to safety, particularly if human activities interfere with these processes (OMNR, 2001). The valley slopes within and adjacent to the study area are the natural hazards requiring analysis and delineation and will inform the developable envelope of the Site. These valley slopes, including Sixteen Mile Creek, Glenayr Creek and the incised draw protruding into the Site were subject to geotechnical and slope stability analyses by BIG Consultants and a toe erosion threshold analysis by Geomorphix, where appropriate. The results of each of these complementary studies and in particular, the long-term stable top of slope (LTSTS), informed the delineation of the developable envelope of the Site illustrated (Figure 3). The LTSTS determined by BIG Consultants illustrated on Figures 2 and 3 represents the limit of valley erosion hazards (Natural Hazards) where the slope is stable in terms of long-term stability (BIG, 2021b).

The Town of Oakville's OP Policy 10.13.2 states that no new development or site alteration is permitted within hazard lands without the approval of the Conservation Authority. CH regulates all watercourses, valleylands, wetlands, Lake Ontario and Hamilton Harbour

shoreline and hazardous lands, as well as lands adjacent to these features including a distance of 15 m from the greater limit of the erosion or flooding hazards associated with Sixteen Mile Creek and its tributaries. As per the Town of Oakville's OP Policy 16.1.9 for Valleylands and CH policy, no new development is permitted within 15 m of the stable top of slope or flooding and erosion hazards associated with Major Valleys, which include Sixteen Mile Creek and its tributaries. The prescribed set-back for the stable top of slope and Minor Valleys is 7.5 m. The subject lands within 7.5m and 15 m of the established LTSTS for the Site are illustrated on Figure 3.



Legend

- Site Boundary
- Study Area
- SWH – Significant Wildlife Habitat
- Longterm Stable Top of Slope (LTSTS) (BIG Consulting November 26th, 2021)
- LTSTS 7.5 m Setback
- LTSTS 15 m Setback
- Woodland 10m Buffer
- Staked Physical Top of Bank (Conservation Halton March 23, 2018)
- Tree Protection Zone (Kuntz, 2021)
- Glenayr Creek (LIO, 2018)
- Culvert (Approximate) (SLR, 2018)

0 12.5 25 50 Meters

SCALE: 1:1,600
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 17N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.

Basedata: World Imagery (Halton Region, 2015,01,15)

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NATURAL FEATURE CONSTRAINTS

December 9, 2021	Revision 0	Figure No. 2
Project No. 209.40574.00000		

SLR Consulting (Canada) Ltd.

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5.0 DESCRIPTION OF THE SITE PLAN

It is intended that the Site will be severed as a separate development block from the St. Volodymyr Cultural Centre and cemetery lands within which it is currently associated. Currently there has been no severance application filed. The development will consist of an 8-storey seniors' residence with 315 suites, with an additional 24 seniors-friendly townhouse units, for a total of 339 units. Overall, this will provide 34 assisted living suites, 34 memory care suites, 116 independent supportive living suites, 131 independent living suites, and the 24 seniors-friendly townhouse units.

5.1 Site Servicing

The Functional Servicing Study completed by RVA (2021) as part of the ZBA application provides the following summary of the proposed servicing for the Site. Additional development and servicing details will be provided for site plan application.

"Water: A new municipal distribution main constructed along a portion of the Fourth Line frontage of the site and continuing westerly along the south side of Dundas Street West can provide the required domestic and fire service for the site. This new watermain will have terminating interconnections at the existing 1200 mm Ø Regional transmission located on the north side of Dundas Street West opposite of the site and the existing 200 mm Ø distribution watermain located on Wooden Hill Circle west of the site. The location of the proposed interconnection with the transmission main coincides with the proposed interconnection proposed to service the development lands on the north side of Dundas Street West.

Sanitary: A new 200 mm Ø municipal sanitary sewer constructed from the Site westerly within the Dundas Street West ROW and discharging into the existing 1200 mm Ø sanitary trunk sewer at a location approximately 150 m east of the Proudfoot Trail intersection, will provide sanitary servicing for the site. The resultant service connection to the site will be relatively shallow (1.2 m frost cover) and, as a result, sanitary drainage from within the Site will drain by gravity to a private pumping station with a force main that discharges to a control MH and service connection located near the Fourth Line property line.

Storm: The existing site generally drains to the south into a defined environmental feature which is also a drainage draw. Adjacent storm sewers on Dundas Street West and Fourth Line were not designed to accept drainage from the Site.

It is proposed to reuse or reconstruct an existing outlet pipe into the drainage draw. To mitigate the impacts of the development, a stormwater management (SWM) plan will be implemented to provide discharge rate control, erosion control, water balance and quality control for discharge from the developed site. Prior to detailed design, criteria and target parameters for these measures will be confirmed through consultation with Conservation Halton."

6.0 ENVIRONMENTAL CONSTRAINTS

6.1 Constraints and Identification of Buffers and / or Vegetation Protection Zones

Policy 16.1 of the Town's OP provides the permitted uses and protection direction for land development applications positioned within or adjacent to Natural Areas. Schedule B of the Town's OP identifies the Sixteen Mile Creek valley as an Area of Natural and Scientific

Interest (ANSI) and an Environmental Sensitive Area (**Figure 1**). This valley together with the tributary valley forming the east and southeast boundary of the Site and a portion of the internal incised draw feature are also identified as Valleylands and Floodplain on Schedule B and their treed portions are identified as Woodlands.

The site investigations and data analysis completed in support of this EIS together with the top of bank staking exercise in March 2018 performed with CH staff have further refined the position and extent of these Natural Areas and identified Significant Wildlife Habitat (SWH) and Natural Corridors within the adjacent larger valley systems.

Accordingly, the set-backs/buffers summarized below in **Table 5** have been adopted in the ZBA application:

Table 5. Minimum Setbacks/Buffers as Identified by CH Policy, ROP and Policy 16.1 of the Town's OP

Feature	Reference	Set-back/Buffer
ANSI	As mapped in OP	As determined through an EIS
Environmentally Sensitive Area	Regional OP	As determined through an EIS
Woodland	Dripline	10 m
Natural Hazards / Major Valleylands*	Established Long-term stable top-of-slope (LTSTS)	15 m
Natural Hazards / Minor Valleylands*	Established LTSTS	7.5 m
Fish Habitat	Sixteen Mile Creek and Glenayr Creek	30 m for coldwater creeks
Significant Wildlife Habitat	As Identified in OP or determined through an EIS	As determined through an EIS
Natural Corridors	As determined through an EIS	As determined through an EIS

*Both the Town and CH policies apply

6.1.1 ANSI and ESA Buffer

Owing to the natural separation distance between the Site and the Sixteen Mile Creek valley and the majority of the ANSI and Environmentally Sensitive Area, buffer determination was guided by the setbacks applied to other Natural Areas and features including LTSTS. The position of Fourth Line and the municipal trail head parking lot adjacent to the northeast and eastern boundary of the Site represent an existing disturbance and land uses that do not require protection using relatively large set-backs. The buffer to the ANSI and ESA boundary north and northeastern boundary of the Site includes the 15 m set-back being applied to this Major Valleyland together with the Tree Protection Zone established for trees within the Site (Figure 3).

6.1.2 Major and Minor Valleylands

As provided in Section 4.2.14 of this report and in accordance with Town of Oakville's OP Policy 16.1.9, development or site alteration shall not be permitted within the valley or within 15 metres of the stable top-of-bank of major valleys and tributaries, and 7.5 metres

of the stable top-of-bank of minor valleys and tributaries, except for compatible permitted recreational uses, essential public works and utilities subject to the requirements of this Plan. Accordingly, a 15 metre setback to the LTSTS of the Sixteen Mile Creek Valley and Glenayr Creek Valley has been adopted in the ZBA (Figure 3).

Although Major Valleylands include all tributaries to Sixteen Mile Creek, a 7.5 metre setback to the long-term stable top of slope of the incised draw has been used to inform the development limit for this application. This setback is a reflection of the feature's relative size to the Sixteeen Mile Creek valley and those of flowing tributaries such as Glenayr Creek and it being best characterized as a relatively steep sided mature woodland feature and the absence of permanent or intermittent discharge. As discussed above, the former piped connection between the remnant pond and this feature was investigated using a CCTV device in 2019 and found to be obstructed. Furthermore, the Slope Stability Study completed by BIG Consultants (2021b) established the LTSTL as the limit at which the slope is stable in terms of long-term stability. That study also concluded that a 7.5 m set-back to the LTSTS for the incised draw, while not required, is adequate to protect against erosion of the valley slopes.

An additional consideration for the adoption of a Minor Valleyland set-back of 7.5 m to this feature was the inclusion by the Town of all valleys and tributaries within the Town of Oakville as "Minor" with the exception of Bronte Creek and Sixteen Mile Creek. Many portions of the watercourses within the numerous subwatersheds listed in Policy 16.1.9 b (ii) are larger and provide more significant valleyland functions than the incised draw feature yet are assigned a 7.5 m set-back.

The adoption of a 7.5 metre setback to the LTSTS of the incised draw feature is supported by the compatibility of the proposed land use adjacent to this feature. As stated previously, the majority of the land within 15 metres of the incised draw currently consists of manicured lawn and fallow field that will undergo natural restoration using native trees, grasses and forbs and include passive recreation uses following site grading activities. Localized exceptions to this restoration program are required in some locations adjacent to the incised draw to facilitate the conceptual site plan (Figure 3). These localized exceptions include infrastructure (parking lot, and roadway hammerhead) to within 7.5 metres of this feature. This is required to facilitate the conceptual site plan due to the property's configuration, including the intrusion of the incised draw through the Site and is consistent with the setback requirement for Minor Valleylands.

Finally, large areas of additional land beyond the 15 m setback to the LTSTS land and adjacent to the valleylands are also proposed for similar restoration and passive recreational treatment. These areas are depicted as Tree Planting Areas on Figure 3. Combined, these lands and those to be restored within 15 metres of the LTSTS of the incised draw will provide compatible land use and functions to complement the Region's NHS.

6.1.3 Fish Habitat and Headwater Drainage Feature

No encroachment into the riparian habitat of Sixteen Mile Creek or Glenayr Creek will occur. As previously noted, the top of bank of the incised draw feature and Glenayr Creek were staked in March 2018 with CH staff and further delineation of the LTSTS was completed by BIG consultants in support of the subject application. The limits of these features, together with the woodland boundary and applicable buffers and set-

backs were used to establish the limit of development for the Site. In doing so, the protection of fish habitat is achieved and promoted in the subject application.

By extension, the application also implements the HDF management recommendation of "Protection" for the incised draw feature from Section 4.2.6.1 as both the feature and its discharge contribution to Glenayr Creek are preserved and enhanced in the concept plan.

6.1.4 Significant Wildlife Habitat

Confirmed and Candidate SWH were identified through the background review, in combination with targeted wildlife inventories that identified SWH within the adjacent Valleylands. Although the table lands were not identified as having SWH, the woodland canopy associated with Glenayr Creek, and the adjacent Sixteen Mile Creek valley lands provide candidate SWH for Woodland Area-Sensitive Bird Breeding Habitat and confirmed SWH for Special Concern and Rare Wildlife (Eastern Wood-peewee). Protection of these features through the application of vegetation and slope stability buffers and setbacks to both the Sixteen Mile Creek and Glenayr Creek valleylands should also protect and maintain the SWH identified within them.

6.1.5 Natural Corridors and RNHS

The Natural Corridor functions of the Regional Natural Heritage System (RNHS), including Sixteen Mile Creek valley and Glenayr Creek and the incised draw will be protected within the appropriately assigned set-backs and buffers applied to these features. The adoption of a 15 m set-back from the LTSTS along both the Sixteen Mile Creek valley and Glenayr Creek valley features will adequately protect the natural wildlife corridor functions of these features due to their steep valley walls and dense woodland vegetation creating a natural separation between tableland activities (such as potential trails) and other potential uses and the valley floor along which animals can move.

The proposed use of the Site as a transitional retirement facility is a compatible land use adjacent to the RNHS and its natural corridor functions as the site will be under single ownership ensuring appropriate positioning and use of passive outdoor amenities (patios, gazebo, private walking trails, etc.). Single ownership also reduces the risk of incursion and disturbance into the natural edge as is often associated with multi-unit residential developments adjacent to valleylands.

Issues to be discussed as part of the impact assessment phase include:

- Determination of appropriate buffers to the ANSI, ESA, SWH and Natural Corridor;
- Minor refinements and adjustments to established set-backs and buffers of other Natural Areas;
- Significant Valleylands;
- Removal of remnant pond;
- Removal of tableland trees;
- Proposed stormwater outfall; and
- Compatibility of proposed development with adjacent Natural Features.

6.1.6 Final Development Limit

The Development Limit Line illustrated on Figure 3 was derived from the outermost boundary of the natural heritage and physical constraints and their respective buffers and set-backs. Constraints included hazard lands, Significant Valleylands and LTSTS, staked top of bank, significant woodlands, SWH and the TPZ. These features are depicted on Figure 2. As discussed in Section 6.1.2, a 15 metre setback was applied to the LTSTS of the Sixteen Mile Creek Valley and Glenayr Creek Valley and a 7.5 m set-back to the LTSTS for the incised draw. However, as illustrated on **Figures 2** and **3**, the incorporation of the TPZ and a 10 m buffer to the woodland edge results in a larger set-back than 7.5 m to the LTSTS of the incised draw along its southern boundary where in some locations it approaches or exceeds 15 m.

7.0 IMPACT ASSESSMENT AND MITIGATION

The site plan was overlaid on mapping of existing conditions and policy constraints to illustrate the strong degree of alignment and conformity of with the Town's Natural Area protection policies (OP Section 16.1) and to identify minor refinements and adjustments to established set-backs and buffers (**Figure 3**). As provided above in **Section 6**, few issues require discussion in this impact assessment section due to the adoption and adherence to the set-backs/buffers in the Site Plan. Further details related to impact assessment will be addressed at the Site Plan approval stage once the zoning has been approved. At this time only impacts based on conceptual details can be addressed.

The following sections outline the direct, indirect and cumulative impacts based on the concept plan for zoning approval. Additional impacts will be discussed and mitigation provided at Site Plan Approval.

7.1 Removal of Remnant Pond

The existing pond positioned along the midwestern boundary of the Site is a remnant man-made pond from past agricultural practices on the landscape. Flow contributions toward the pond were previously reduced during upgrades to Dundas St. West and the pond's outflow toward the incised draw feature also became obstructed over the past unknown number of years, leaving the feature isolated on the landscape. The pond has a typical depth of approximately 1 m to 1.5 m. Evening amphibian surveys recorded low levels of activity, and Chorus Frogs were not observed / detected during the any of the survey events; as such, in our view, the pond is not providing suitable habitat to wildlife.

Through correspondence and information sharing between SLR ecologists and CH in December 2019 and January 2020, it was determined by CH that the pond would not be added to the CH Regulation Limit. The removal of the pond as part of the ZBA application is not considered an impact to the local Sixteen Mile Creek, since the pond is isolated and likely functioned ecologically as a wildlife sink, meaning outflow contributions and wildlife dispersal from the feature are limited and the quality of the habitat present is low.

7.2 Minor Refinements and Adjustments to Established Natural Area Set-backs and Buffers

Due to local topography and challenges created by the configuration and position of Natural Areas within the Site, minor adjustments to the set-backs and buffers are required and have been applied to provide the greatest level of protection in combination with the

feasibility of the proposed development plan (**Figure 3**). Although small pinch points have been identified where there is encroachment or grading required into a 15 m set-back to the LTSTS, there are no encroachments that would exceed the 7.5 m minor valleyland set-back as established in Section 6.1.2. All buildings will be located outside of the 15 m LTSTS set-back. There are areas such as near Glenayr Creek, the point of the draw and Fourth Line where development is greater than the 15 m set-back to the LTSTS that will provide additional area to the RNHS and provide the near equivalent of a 15 m setback to the incised draw (Figure 3).

Adding increased areas of buffer width adjacent to the woodland is supported ecologically, as this feature contains an aquatic community and functions as a Natural Corridor within the Sixteen Mile Creek watershed. These additional buffer areas will be enhanced with vegetation plantings, in the same manner as other Natural Area buffers, to increase the size of the natural heritage system and protect the existing woodland edge while offsetting those areas where the buffer has been reduced to the 7.5 m setback.

While the selection of vegetation species to be planted in the buffer will be determined during detailed design, species selection will be restricted to a suite of native woodland and edge tolerant species and, where possible, to those naturally occurring within the Sixteen Mile Creek watershed.

Existing conditions at the site, up to the limit of the woodland, is currently manicured lawn. The proposed conditions, included plantings along the edges, will reduce the limit of manicured lawn. The final proposed setback is determined as more than adequate since less area will be maintained following development. Plantings between the limit of the treed areas and the setback for the LTSTS will provide additionally stability to the slope.

7.3 Significant Valleylands

The Sixteen Mile Creek valley, Glenayr Creek and the incised draw qualify as valleylands and were found to be Significant Valleylands at a regional level under Section 276.4 of the ROP and by extension are also considered Significant Valleylands under Policy 2.1.5 of the PPS (2020). All Significant Valleylands and their LTSTS are retained and protected in the conceptual site plan.

7.4 Proposed Stormwater Outfall

For the protection of fish and fish habitat in the downstream receiving bodies of Sixteen Mile Creek and Glenayr Creek water quality control objectives of enhanced (80%) TSS removal and erosion control will be utilized at this Site. Details relating to stormwater quality and quantity controls to protect fish and fish habitat will be provided as part of the supporting documentation to the Site Plan application.

The Functional Servicing Report (FSR), prepared by RV Anderson and Associates, proposes to discharge treated stormwater (STM) at a controlled rate into the incised draw feature (**Figure 3**). The outfall will consist of a pipe supported by a headwall positioned at the upstream end of the feature near its origin on the landscape. It is envisioned that the outfall will include the construction of a rock lined plunge pool and additional rocky ramps along a portion of the draw length down gradient. Placement of the rock will be done in manner that limits disturbance of the existing vegetation lining the feature's walls. While the extent of rock reinforcement and size of rock required will be determined at detailed

design, it is anticipated that the rock material will become naturalized into the feature over time as herbaceous and woody vegetation naturally become re-established. If determined to be required based on the degree of potential disturbance, restoration planting could be included as part of and/or following construction.

Geo Morphix (2021) determined that the natural drainage area to the incised draw has been largely reduced from the construction and improvements over time related to Dundas Street West. Also, as previously noted, the pipe that formerly directed discharge from the pond to the incised draw feature is blocked in more than one location. The use of this incised draw feature to convey treated STM toward Glenayr Creek will reinstate intermittent flow into the feature following the spring freshet and storm events of greater than 5 mm. It was stated by Geo Morphix (2021) that returning a portion of flow to the feature would be beneficial to the downstream system since intermittent flow within this feature likely occurred when the upstream pond was larger and the connection (via surface or later via subsurface) was active.

While many aquatic functions are not anticipated to be created in this feature due to its steep gradient, benthic macroinvertebrates will likely become established in the interstitial voids created in the rock lined invert. The purposeful creation of step pools along the invert may prolong the discharge hydroperiod and promote the retention of standing water for use by wildlife.

During construction, effective sediment and erosion control measures will be used to prevent the entry of sediment into Glenayr Creek. Regular inspection of these measures to ensure they are functioning properly will be completed during construction and until re-vegetation has successfully been established. Additional environmental protection measures will be developed as part of Site Plan and future detailed design.

7.5 Species at Risk – Silver Shiner and Eastern Wood-pewee

The protection of Silver Shiner is achieved and promoted in the subject application. Stormwater management will provide both on-site quantity and quality controls. Water quality control objectives of enhanced (80%) TSS removal and erosion control will be utilized at this Site. It is envisioned that the stormwater discharge will be directed to the Central incised draw feature in the centre of the Site. Details relating to stormwater quality and quantity controls to protect Silver Shiner will be provided as part of the supporting documentation to the Site Plan application.

Although habitat of the Eastern Wood-pewee is not protected through the Species at Risk Act, significant wildlife habitat within the incised channel/valleyland has been protected through the proposed plan and ultimately protects the Eastern Wood-pewee.

7.6 Tableland Tree Removal

All tableland trees were tagged and documentation of their species, size and health reported by Kuntz (2021). These data have been used to calculate tree removal quantities and identify appropriate restoration plantings and valuation calculations in accordance with the Town's Tree Replacement Formula / Cash-in-lieu formula. All opportunities will be investigated to compensate on or adjacent to the Site in order to minimize the effect of the tree removals. Additional compensation in the form of cash in leu to the Town (if required) will be identified during detail design in accordance with an approved site plan application.

The encroachment and removal of individual trees will remove habitat (foraging and nesting/shelter) for resident and migratory birds and common urban mammal species, however, none of these features are known to provide specialized or unique habitat opportunities. Many of the trees to be removed are non-native plant species or native plant species commonly occurring within adjacent urban and rural landscapes of the Sixteen Mile Creek watershed. The effect of the removal of Candidate SWH (maternity roost sites for SAR bats) provided by the tableland trees will be negligible due to the abundance of suitable trees within the retained valley systems on and adjacent to the Site. The removal of Candidate SWH (maternity roost sites for SAR bats) and protection of the induvial bats will be addressed using appropriate timing removal schedules for the protection of SAR bat species and confirmed with the Ministry of Environment, Conservation and Parks (MECP) as part of a parallel approvals process under the provincial ESA (2007).

The three treed areas of interest as noted in the Town's development engineering urban forestry staff comments have been retained with the revised concept plan. These three areas are indicated on Figure 3.

7.7 Potential Effects of Lighting

While the core of the Sixteen Mile Creek valley occurs well beyond the likely influence of any lighting, the proposed project will potentially introduce additional night-time light sources to the tableland area and the edge of the Sixteen Mile Creek ESA and the Glenayr Creek. The direct effects of artificial lighting on wildlife have been widely studied and documented. Potentially affected wildlife includes bats, songbirds, and even invertebrates such as moths and fireflies. In general, artificial lights can alter an animal's circadian rhythm or create miss-cues that initiate activities such as foraging (feeding & substance), sheltering, mating and reproducing and communicating. For instance, artificial lights can attract and disorient animals such as moths and other flying night-time insects or potentially deter a nocturnal animal from using the area. For bats, potential effects can include changes to roost emergence times, degradation of existing and potential roost quality, and effects on foraging patterns.

Mitigating the potential effects of artificial night-time light on wildlife can be achieved through the selection of lighting formats, lighting design and layout and operational procedures.

The first objective would be to use only the minimum amount of light needed for the task. Selecting light sources known to be less intrusive or altering of wildlife behaviour can also reduce potential impacts from artificial lighting in natural settings. The use of low-pressure sodium, high-pressure sodium, metal halide and light emitting diodes (LEDs) has been shown to be preferred over traditional sources of lighting. For this reason, the use of these types of light sources (or similar) will be considered in the design of the buildings and its amenities.

Design elements that should be used include downcast lighting or direct lighting or installing directional accessories such as shields or baffles to direct light and reduce light spill-over and illumination into adjacent habitat components. Similarly, roadway lighting can be designed with a light distribution pattern that spreads the length of the roadway so that adjacent areas are not illuminated.

Operationally, areas not requiring full time illumination can be fitted with motion activated lights to reduce the duration of illumination and maintain darker areas of adjacent habitat.

The above recommendations are included as guidance toward reducing the potential effects of artificial night-time light on wildlife. The issue will be examined and addressed more thoroughly during subsequent design phases as part of photometric / light pollution study, however, at a minimum, all exterior light fixtures will be shielded to meet the IESNA full cut-off classification or an up-light rating of 0.

7.8 Bird Friendly Design Elements

The proposed addition of an 8-story building adjacent to greenways such as the Sixteen Mile Creek valley corridor can present potential for collision and harm of resident and migratory birds. To deter bird collisions and reduce potential harm to birds design elements and mitigation provided in the City of Toronto Bird Friendly Development Guideline and Toronto Green Standard (TGS) “Bird Collision Deterrence” and the “Light Pollution” performance measures and best practices will be incorporated into the building design as part of the SPA application and future design phases. This will include glass treatment at applicable elevation zones. The issue will be examined and addressed more thoroughly during subsequent design phases.

7.9 Compatibility of ZBA

While previously presented in **Section 6.0**, the compatibility of the proposed land use adjacent to the existing Natural Areas should be recognized. The proposed use of the site as a transitional retirement care facility means that use and maintenance of the Site’s boundaries along the natural features will be under the direct control of a single owner. Single ownership and the construction of single facility with passive outdoor amenities (patios, private walking trails, etc.) adjacent to the larger Sixteen Mile Creek valley corridor will reduce the risk of incursion and disturbance into the natural edge that is often associated with multi-unit residential developments adjacent to valleylands. The conceptual Site Plan also contemplates passive private recreational uses on both sides of the incised draw feature consisting of minor trails and resting/viewing areas for the senior residents of the property (**Figure 3**).

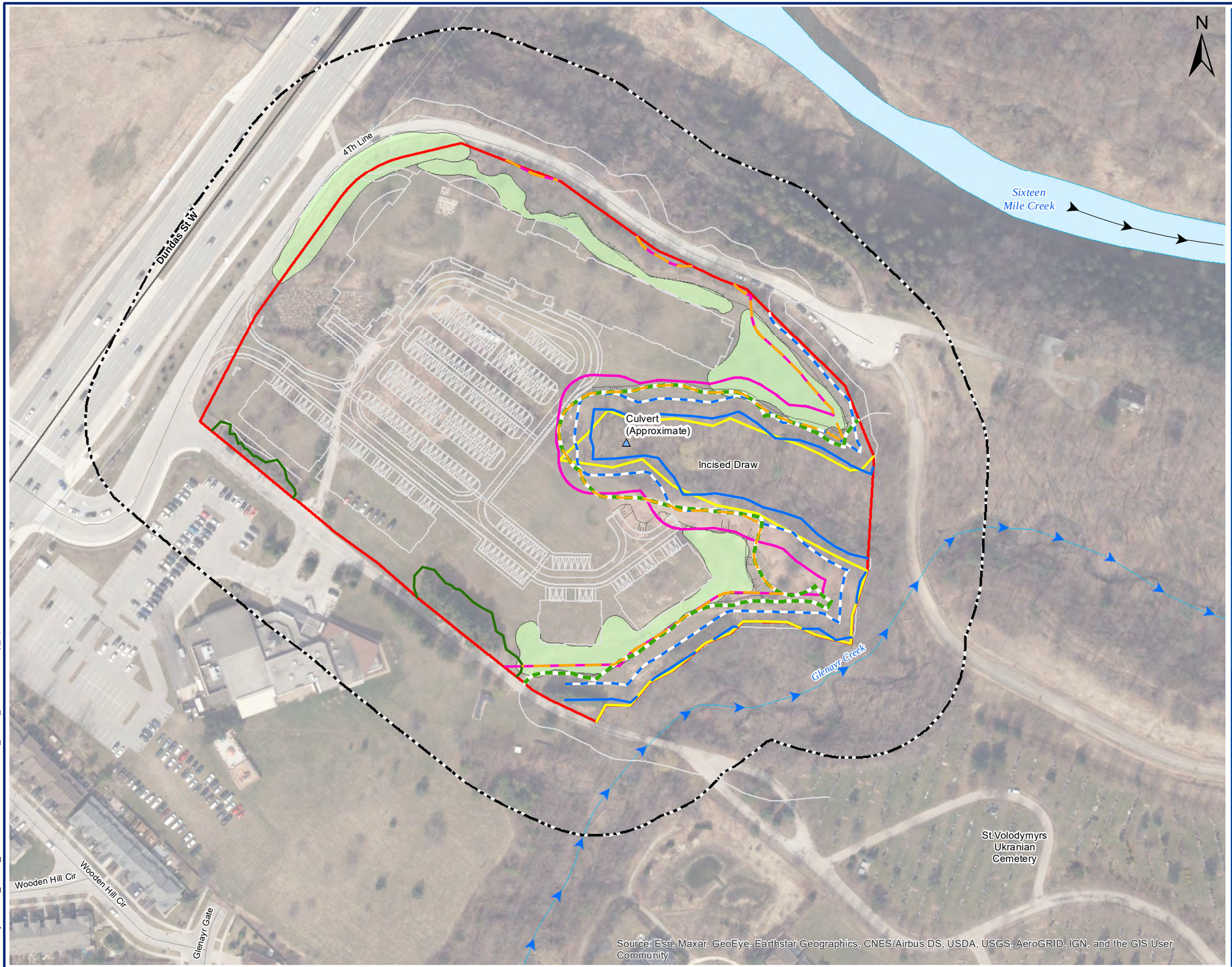
The potential effects to wildlife within the Sixteen Mile Creek valley from security and pathway night-time lighting can be minimized by using design elements including downcast lighting or direct lighting or installing directional accessories such as shields or baffles to direct light and reduce light spill-over and illumination into adjacent habitat components. Operationally, areas not requiring full time illumination could be fitted with motion activated lights to reduce the duration of illumination and maintain darker areas of adjacent habitat. In addition, the use of low-pressure sodium, high-pressure sodium, metal halide and light emitting diodes (LEDs) has been shown to be preferred over traditional sources of lighting.

7.10 Summary of Mitigation Proposed

The proposed plan for zoning provides the following mitigation measures to maintain the health, features and function of the NHS components. The measures will reduce and/or eliminate short and long-term impacts of the proposed concept development plan. Additional mitigation will be proposed where applicable at site plan application.

- Avoidance of the incised draw feature and significant wildlife habitat/woodland
- Buffers and setbacks of adequate size to preserve the function of the features and enhance the edge between the features and the development

- Dedication of the Natural Heritage Features to the Region and more restrictive zoning over the dedicated areas.
- Construction timing windows to avoid impact to sensitive fauna
- Stormwater Management and sediment control to reduce short- and long-term impacts to the features and associated habitat within the overall landscape including the use of Low Impact Development (LID) features
- Tree protection plans for areas of concern (areas along the western and northern property limits



Legend

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- Woodland 10m Buffer
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- LTSTS 7.5 m Setback
- LTSTS 15 m Setback
- Staked Physical Top of Bank (Conservation Halton March 23, 2018)
- Development Limit Line
- Site Plan (IBA, 2021)
- Glenayr Creek (LIO, 2018)
- Culvert (Approximate) (SLR, 2018)

0 12.5 25 50 Meters

SCALE: 1:1,600
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 17N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.

Basedata: World Imagery (Halton Region, 2015,01,15)

DELMANOR WEST OAK INC.

DELMANOR WEST OAK

DEVELOPMENT LIMIT AND SITE PLAN OVERLAY

December 9, 2021	Revision 0	Figure No. 3
Project No. 209.40574.00000		

SLR Consulting (Canada) Ltd.

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8.0 LEGISLATIVE AND POLICY CONFORMITY

This EIS was prepared in the context of the policy framework identified in **Section 3**. The purpose of this section is to identify the key pieces of applicable environmental legislation, regulations and/or policies to be respected throughout the planning, construction and operation of the proposed development plan and to demonstrate how the ZBA application and conceptual Site Plan achieve conformity and compliance (**Table 6**).

Table 5. Summary of Policy Conformity

Policy		Conformity	Rationale
The Growth Plan for the Greater Golden Horseshoe (GGH), 2019	Section 4.2.2 - New development or site alteration must demonstrate no negative impacts on key natural heritage features or key hydrologic features	Conforms	The application conforms to these policies; no development or site alteration is proposed within the NHS features and their boundaries have been refined based on field and empirical studies. Appropriate set-backs and buffers have been applied to all features of provincial significance and it has been demonstrated through an EIS that no negative impacts to these features or their ecological functions will occur.
Greenbelt Plan (2017)	The Site occurs beyond the boundaries of the provincial Greenbelt although the Greenbelt Plan designates Sixteen Mile Creek valley an Urban River Valley.	Conforms	The designation as an Urban River Valley recognizes the creek as a key component of the long-term health of the Greenbelt Plan's Natural System. Only publicly owned lands are subject to the policies of the Urban River Valley designation meaning the Greenbelt Plan's policies do not apply to subject application.
Provincial Policy Statement (2020)	Policy 2.1	Conforms	No development or site alteration is proposed within the features of provincial significance and their boundaries have been refined based on field and empirical studies. Appropriate set-backs and buffers have been applied to all features of provincial significance and it has been demonstrated through an EIS that no negative impacts to these features or their ecological functions will occur. Passive recreation areas will be cited adjacent to much of the features of provincial significance on and adjacent to the Site.
Endangered Species Act, 2007		In Compliance	No SAR identified on the Site

Policy		Conformity	Rationale
			To avoid harm to potentially occurring SAR bat species, tree removal should not occur between April to September when bats are in summer day or maternity roosts.
Migratory Birds Convention Act (MBCA, 1994)		In Compliance	Vegetation clearing will not occur within the breeding bird period provided under Environment Canada guidance for periods of highest nesting probability (i.e. cannot occur generally between April 1st and August 31st)
Fisheries Act	Prohibits harmful alteration, disruption or destruction of fish habitat	In Compliance	Fish and direct fish habitat adjacent to the Site will not be directly affected. Stormwater controls will achieve Enhanced level quality per MECP SWM manual and CH erosion control standards
Halton Region Official Plan Sections 115.3 and 118, (June 19, 2018 Office Consolidation)	Regional Natural Heritage System (NHS) include Key Features and requirement for an EIS	Conforms	No development or site alteration is proposed within the Key Features identified per Section 115.3 and their boundaries have been refined based on field and empirical studies. Appropriate set-backs and buffers have been applied to all Key Features and it has been demonstrated through an EIS that no negative impacts to these features or their ecological functions will occur. The EIS has been prepared to ensure that the proposed development has accounted for Section 118 (2), (3) and (3.1). The development plan accounts for the protection of the Regional Natural Heritage System from development and site alteration. Passive recreation areas will be sited adjacent to much of the Key Features on and adjacent to the Site.
*Town of Town of Oakville Official Plan Policy 16.1 and Schedule B (August 28, 2018 C*onsolidation).	Natural Area protection and Requirements for set-backs and buffers. Relevant natural features include: • Woodlands	Conforms	No development or site alteration is proposed within the Natural Areas and their boundaries have been refined based on field and empirical studies. Appropriate set-backs and buffers have been applied to all Natural Areas and it has been demonstrated through an EIS that no

Policy		Conformity	Rationale
	• Valleylands • Significant Wildlife Habitat • ESA • ANSI • Fish Habitat and, • Natural Corridors		negative impacts to these features or their ecological functions will occur. Passive recreation areas will be sited adjacent to much of the Natural Areas on and adjacent to the Site. Adjustment to one Major Valleyland setback width with a Minor Valleyland setback value although rationale provided and effective buffer due to other overlapping constraints approaches 15 m in many locations including adjacent to proposed surface parking lot.

9.0 RECOMMENDATIONS

The following are recommended based on the assessment as provided above to support the ZBA application. Additional recommendations will be included as applicable in a future application for site plan approval.

9.1 Land Severance

- An EIA or addendum to this EIA would need to be submitted in support of a future severance application to demonstrate that the proposed severance meets Section 118 (3) of the ROP and the systems approach outlined Section 118(2).

9.2 RNHS Land Dedication

- Any lands identified as being part of the RNHS are to be gratuitously dedicated to a public body such as the Town or CH (as determined), to ensure their long-term protection.

9.3 Edge Management and Tree Replacement

- Tree replacement should occur in accordance with the Arborist Report.
- Details of the re-vegetation in location of the proposed SWM outfall will be provided as part of the Site Plan application. In general, restoration should be carried out immediately following construction and include a native plant seed mix using a biomulch or other approved technique to provide a solid base for the seeds to establish and is resistant erosion and the addition of woody plant species.
- The native plant seed mix should include species that are attractive to native pollinators (e.g., Milkweed for Monarch habitat).

9.4 Avoidance of Harm to Wildlife

- Aside from tree replacement planting and other compensation provided in the Arborist Report, mitigation should include performing vegetation removal outside

of the period from March to September to avoid impacts to breeding birds, potential occupation of treed roosts (individual trees) by bats.

9.5 Protection and Recovery of Silver Shiner

- Stormwater management should provide both on-site quantity and quality controls. Water quality control objectives of enhanced (80%) TSS removal and erosion control should be utilized at this Site.

9.6 Best Management Practices

- All outdoor lighting (including any new street lighting and external lighting on buildings) should be directed towards the ground and/or away from the natural areas.
- The erosion and sediment control strategy for the wetland channel basin construction will be designed in conformance with the Town and CH guidelines.

10.0 CONCLUSIONS

The analysis of the natural heritage features and functions associated with Site and on adjacent lands confirm the proposed use of the subject lands as provided in the ZBA application and the conceptual Site Plan can proceed in conformity/compliance within the applicable regulatory and policy framework, including the policies of the PPS, the Town of Oakville Official Plan, the Region of Halton OP and Growth Strategy, CH policies and guidelines, Ontario Regulation 162/06 and the ESA (2007) so as to protect key natural heritage features and their functions. This will be achieved by respecting the recommended development limits, including the established set-back and buffers adjacent to the top of bank and valley woodland edge, improving stormwater quality run-off and providing naturalization within the buffers.

11.0 STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for **Delmanor West Oak Inc.**, hereafter referred to as the "Client". The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. It is intended for the sole and exclusive use of Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

This report has been prepared for specific application to this site and site conditions existing at the time work for the report was completed. Any conclusions or recommendations made in this report reflect SLR's professional opinion.

Information contained within this report may have been provided to SLR from third party sources. This information may not have been verified by a third party and/or updated since the date of issuance of the external report and cannot be warranted by SLR. SLR is entitled to rely on the accuracy and completeness of the information provided from third party sources and no obligation to update such information.

Nothing in this report is intended to constitute or provide a legal opinion. SLR makes no representation as to the requirements of compliance with environmental laws, rules, regulations or policies established by federal, provincial or local government bodies. Revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

The Client may submit this report to related environmental regulatory authorities or persons for review and comment purposes.

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APPENDIX A
Record of Consultation

Environmental Impact Study
Delmanor West Oak Inc.
SLR Project No.: 209.40574.00000

Delmanor Oakville – Consultant Kick-Off Meeting

October 23rd, 2019

Attendees: Michael Mestyan (Tridel), Sheldon Gould (Tridel), Jeremiah Stinson (Tridel), Kara Green (Tridel), Dale Leadbeater (SLR), Michael Roy (SLR), Andrew Turner (RVA), David Stafford (RVA), Oz Kemal (MHBC), Darko Strajin (BIG), Kenneth Chan (LEA), Paul Icke (IBA)

Copied: Dale Leadbeater (SLR), Michael Roy (SLR), Andrew Turner (RVA), David Stafford (RVA), Oz Kemal (MHBC), Darko Strajin (BIG), Kenneth Chan (LEA), Paul Icke (IBA) , Robert Levi (Tridel)

Item	Content	Action
1. General Site/ Planning Items		
1.1. Future Towns	- Discussion around whether or not showing future 'townhouses' will be viewed as solely residential (not retirement) by city. OK recommended showing the towns from the initial submission but stressing the use (retirement).	-We will move forward not considering these as conventional towns, but independent seniors living (no stove), that is integrally connected to the main building's amenities and services. Ageing in place & the idea of the village
Item	**Content**	**Action**
2. Traffic		
2.1. Site Access	- Asked KC to provide insight into probable site access. - KC noted visibility beyond the apex of fourth line will be difficult - Question raised by JS to purchase property at end of fourth line potentially having this as a private road (still connects to pedestrian path though)	-KC to mark up site (disregarding the current arch sketch) to determine all areas where we have go/ no go for site access.
2.2. Fourth Line	- Unknown if city will force urbanization of Fourth Line if we add loading access there - Fourth line has curbs until just before its apex at the north west corner.	-info
2.3. Garbage	- Town of Oakville has strict requirement on enclosed garbage areas	-info
Item	**Content**	**Action**
3. Ecological		
3.1. SLR study to date	- Preliminary ecological investigation conducted with no major concerns – however will need to discuss with conservation authority -	-info
3.2. Trees	- Some trees not included in initial summary that may be considered a feature	-info

	- Trees clustered in centre of northern section of site are most valuable - Some bats noted in trees – potentially a few endangered bat species, however if trees removed during appropriate season not anticipated to cause issue	
3.3. Pond/ Culvert	- Pond water is likely surface not ground water - There is an outlet but does not appear to be draining – no open channel - Risk of CA or town requesting the reinstating of channel – options are to either drain pond or relocate it closer to culvert so it does not impact areas of development - Overall – pond is an isolated feature with some water – if it goes or stays not definitive at this point. - If we require a 15m top of bank setback -we could propose that we will reduce to 10m and keep the pong (otherwise would take too much site area) – a negotiation piece - Culvert appears to be blocked. Below water level but no flows	-info/ further discussion with Cons. Auth. & DL -Culvert investigation by AT
3.4. Flood Lines	- DL noted flood lines are required – Can get these from conservation authority	-AT to purchase these from CA
3.5. Species	- As mentioned in trees, some endangered bat species on site. No immediate cause for concern if tree removal timing is coordinated to mitigate negative impacts - Some frogs noted in pond. Abundance are no cause for concern per PPS/SWH - No direct Redside Dace habitat; HDF is contributing habitat. Hydroperiod/discharge to be maintained in HDF - One special concern species of bird (peewee) observed in treed area north of site – may not be impacted – likely no consequences	-info
Item	**Content**	**Action**
4. Environmental		
4.1. Top of Bank	- 10m setback is standard but Oakville OP states 15m. Will need to discuss this with conservation authority – see note in section above regarding negation with pond - Will need to confirm Conservation Authority has accepted Top of Bank	-DL to follow up with Cons. Auth
4.2. Geotech	- Overall, DS has no major concerns with the site from a due diligence perspective. Phase 1 ESA &	-info

	TOB slope stability completed. Needs to do more investigation (below) to help inform SLR when having initial conversations with conservation authority	
4.3. Geotech	- This will need to be completed for entirety of site	-BIG (DStrajin)
4.4. HydroG	- Will need to be completed – DStrajin noted this will take 4-6 weeks, however data can be given to SLR before full report is done	-BIG (DStrajin)
Item	**Content**	**Action**
5. Civil/ Servicing		
5.1. Stormwater	- Storm water will be a challenge on site. Pond, infiltration, cistern still to be explored	-AT/DStafford to investigate further
5.2. Servicing on Dundas	- RVA will need to determine if service availability has changed with proposed developments in area	-RVA to investigate further
5.3. Connection at Glenayr south	- Subdivision South at Glenayr provides potential opportunity for a more feasible service connection. RVA will have to confirm if the capacity is sufficient to support development and Delmanor to investigate this further with St.Volodymyrs.	-RVA AT/DStafford to confirm service capacity -Tridel to connect with St.Volodymyrs
5.4. North Pedestrian Path	- AT noted pedestrian path row to fourth line at back of site potential to have forcemain	-info…TBD
Item	**Content**	**Action**
6. Next Steps/ Planning/ Critical Timing		
6.1. Sequencing of Conversations with Town	- OK noted there should be another check in with town before formal preconsult to inform them on the progress - Before this happens, a conversation will need to occur with the conservation authority to clear any outstanding site concerns - Targeting an initial application submission early Q1 2020	-DL to touch base with conservation authority once information coordinated with consultants -OK/ KG to discuss timing and setting up initial touch base meeting with town
6.2. ZBA/ SPA	- OK noted Oakville does not accept ZBA/ SPA submission together at first application	-info – this is okay, we will be submitting SPA after first ZBA submission anyways
6.3. RSC	- Record of Site condition likely not required since retirement	-OK/ KG to confirm at initial meeting with Town
6.4. Next Steps Required for end of Due Diligence Period	- DL to update information with other consultant feedback and connect with conservation authority - DStrajin to expedite hydrog to provide data to DL as soon as available - RVA to look into stormwater & culvert	-DL, DStrajin, & AT to submit proposals, begin work, and coordinate with one another – provide updates on timing

From: Kara Green
To: Dale Leadbeater; Michael Roy
Subject: FW: 1280 Dundas Street - Servicing Investigation
Date: November 08, 2019 11:03:02 AM
Attachments: image001.png
image002.png
image004.png
image003.png

Hello Dale,

Please see Emma's email below as an FYI regarding Conservation Halton contact for future communication.

Regards,

Kara Green **B.ArchSci., M.Arch., OAA**
Assistant Development Manager
Development Planning
4800 Dufferin Street, Toronto, ON M3H 5S9
O: 416.649.2704
C: 647.551.9441 **tridel.com**

From: Emma DeFields <edefields@hrca.on.ca>
Sent: November 8, 2019 10:58 AM
To: Kara Green <KGreen@Tridel.com>; David Stafford <DStafford@rvanderson.com>; PWPermits@halton.ca; paul.barrette@oakville.ca
Cc: Andrew S. Turner <aturner@rvanderson.com>; Mufaddal Shabbir <MShabbir@rvanderson.com>; Colleen Bain <cbain@hrca.on.ca>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Thank you Kara,

Understanding that this will go through ZBA and SPA, Colleen Bain, Environmental Planning Analyst, will review any forthcoming submission. I've copied Colleen to follow up.

Thanks
Emma

Emma DeFields, MES
Environmental Planner

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
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From: Kara Green <KGreen@Tridel.com>
Sent: November 8, 2019 10:09 AM
To: Emma DeFields <edefields@hrca.on.ca>; David Stafford <DStafford@rvanderson.com>; PWPermits@halton.ca; paul.barrette@oakville.ca
Cc: Andrew S. Turner <aturner@rvanderson.com>; Mufaddal Shabbir <MShabbir@rvanderson.com>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Good morning Emma,

My name is Kara Green and am with Tridel's Development Planning team and will be working on this file. We will be submitting an application for both ZBA and SPA.

Thank you in advance,

Kara Green **B.ArchSci., M.Arch., OAA**
Assistant Development Manager
Development Planning
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From: Emma DeFields <edefields@hrca.on.ca>
Sent: November 8, 2019 8:55 AM
To: David Stafford <DStafford@rvanderson.com>; PWPermits@halton.ca; paul.barrette@oakville.ca
Cc: Kara Green <KGreen@Tridel.com>; Andrew S. Turner <aturner@rvanderson.com>; Mufaddal Shabbir <MShabbir@rvanderson.com>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Thanks David. Can you please confirm what type of application this is expected to be associated with (i.e. Official Plan Amendment, Zoning Bylaw Amendment, Site Plan, etc.)? Based on the anticipated application, I can pass this email along to the appropriate staff here at Conservation Halton.

Thanks
Emma

Emma DeFields, MES
Environmental Planner

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From: David Stafford <DStafford@rvanderson.com>
Sent: November 7, 2019 6:13 PM
To: PWPermits@halton.ca; Emma DeFields <edefields@hrca.on.ca>; paul.barrette@oakville.ca
Cc: Kara Green <KGreen@Tridel.com>; Andrew S. Turner <aturner@rvanderson.com>; Mufaddal Shabbir <MShabbir@rvanderson.com>
Subject: 1280 Dundas Street - Servicing Investigation

Hello Emma and Paul and to whom it may concern at the Region of Halton,

R.V. Anderson Associates Limited (RVA) has been retained by Delmanor Oakville Limited (Delmanor) to complete a civil servicing investigation as part of their due diligence stage associated with the offer to purchase a portion of the St. Volodymyr lands located to the north and east of the cultural centre building site at 1280 Dundas Street. Please see attached figure showing the site location.

As part of this due diligence exercise, Delmanor requires an investigation of the site servicing requirements related to the proposed development. It is Delmanor's intent to develop a seniors living centre which may consist of mid to high rise buildings.

At this point in time, RVA has accumulated multiple drawings of existing infrastructure of the surrounding right of ways. Additionally, we are currently scheduling a sub-surface engineering (SUE) investigation to further review existing infrastructure which may service the proposed development.

On behalf of Delmanor, we would like to request a meeting at one of your offices to collectively review possible servicing options which may support the proposed development.

We kindly request that you provide us with the appropriate contacts who we should be in touch with to discuss servicing options for this development. Following receipt of this information, we will follow up with potential servicing options that we have prepared in advance of the meeting so everyone has time to review ahead of time.

Regards,

David Stafford, P.Eng., LEED AP BD+C
Associate

R.V. Anderson Associates Limited
2001 Sheppard Avenue East, Suite 300
Toronto, ON M2J 4Z8

T 416 497 8600 x 1368 | **C** 416 268 8382

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From:	MacKenzie, Ronald
To:	"David Stafford"; Philip Kelly
Cc:	Mufaddal Shabbir; Andrew S. Turner; Paul Barrette; "Kara Green"; Dale Leadbeater; Michael Roy; Colleen Bain; Natywary, Laurielle; Najak, Zahir; Huang, Alex
Subject:	RE: 1280 Dundas Street - Servicing Investigation
Date:	November 22, 2019 11:35:45 AM
Attachments:	image001.png image003.png image004.png

David,

In response to your question in the email below our answer is as follows:

Although our current bylaw doesn't specifically note that services cannot cross property lines the Region discourages servicing in such a manner due to the risks, liability issues and problems that it causes the Region as well as the property owners in the long term for such situations. It should also be noted that the Region is currently amending our sewer bylaw and it is probably a good chance that this issue will be addressed in the new bylaw to not allow such connections.

Thanks,

Ron

Ronald MacKenzie
Development Project Manager
Planning Services
Legislative & Planning Services
Halton Region
905-825-6000, ext. 7628 | 1-866-442-5866

From: David Stafford <DStafford@rvanderson.com>
Sent: Friday, November 22, 2019 9:53 AM
To: Philip Kelly <philip.kelly@oakville.ca>; MacKenzie, Ronald <Ronald.MacKenzie@halton.ca>
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; 'Kara Green'

<KGreen@Tridel.com>; Dale Leadbeater <dleadbeater@slrconsulting.com>; Michael Roy <mroy@slrconsulting.com>; Colleen Bain <cbain@hrca.on.ca>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Hi Philip,

Thank you for your comments.

With respect to the Region's servicing policy, we would like to request some more clarification on servicing through a private property (Option 1).

Ron – can you please provide comments on the following:

With respect the identified servicing Option 1 which proposes a direct service connection from the site to the municipal services that passes through an adjacent property on easement (see attached plan), the Town has indicated that this option wouldn't be supported by the Region due to a bylaw that prohibits a private property being serviced through another property. We have reviewed the Region of Halton By-Law 184-5 13. (2), which states:

No Person shall connect more than one private Property to a Building Sewer.

This By-Law appears to echo the requirements of Ontario Building Code (OBC) 7.1.5.4 (1) with respect to Separate Services, which states:

Except as provided in Sentences (2) and (3), piping in any building shall be connected to the public services separately from piping of any other building.

We note our proposal for Servicing Option 1 is for a completely independent building sewer located on easement through the St. Volodymyr private property (subject to being able to obtain this easement of course). This building sewer would have no interconnection with building drains from any other property and would be protected by the easement. To the best of our knowledge, this proposal would not contravene the requirements of the Ontario Building Code with respect to Separate Services or the requirements of the Region of Halton By-Law 184-5 13 (2).

Can you provide comment or confirmation with respect to this. Option 1 is potentially a preferred option subject to obtaining an easement for the connection and as such, we want to ensure that it is not ruled out based on a bylaw without carful examination of the bylaw.

Thank you,

David Stafford, P.Eng., LEED AP BD+C
Associate

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From: Philip Kelly <philip.kelly@oakville.ca>
Sent: November 21, 2019 3:40 PM
To: David Stafford <DStafford@rvanderson.com>; Colleen Bain <cbain@hrca.on.ca>
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; Ronald.MacKenzie@halton.ca; 'Kara Green' <KGreen@Tridel.com>; Dale Leadbeater <dleadbeater@slrconsulting.com>; Michael Roy <mroy@slrconsulting.com>
Subject: RE: 1280 Dundas Street - Servicing Investigation

David:

At this high level stage I think that Option 2 is the best servicing Option.

Option 1 likely does not work as the Region has either a procedure or a policy that does not allow a private property to be serviced thru another private property. Option 1 seems to take this approach.

Option 3 is proposing private services in the Town's Natural Heritage System (NHS). Not recommended.

Philip

From: David Stafford [mailto:DStafford@rvanderson.com]
Sent: Wednesday, November 20, 2019 12:11 PM
To: Colleen Bain <cbain@hrca.on.ca>
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; Ronald.MacKenzie@halton.ca; Philip Kelly <philip.kelly@oakville.ca>; 'Kara Green' <KGreen@Tridel.com>; Dale Leadbeater <dleadbeater@slrconsulting.com>; Michael Roy <mroy@slrconsulting.com>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Hello Colleen,

Thank you for your response. Please find attached the survey which indicates the staked out top of bank.

We have also attached a revised sketch. We note the following:

- The proposed property/severance line is schematic and not official in any way. This is shown schematically to illustrate that Servicing Option 1 would be through the adjacent property
- The existing pond feature has been labelled showing a culvert alignment south towards the regulated area. We note the CCTV investigation revealed this pipe was plugged with debris
- The existing storm sewers are shown on 4th line
- Proposed storm discharge location to the CH regulated area
    - We note the existing site drainage discharges to this location
- We are not showing a proposed discharge location to the 4th line sewers for two reasons:
    - Based on site topography it would be challenging to drain the entire site into this sewer
    - The existing site drainage currently discharges to the regulated area, so we assume CH would want to maintain this drainage pattern

Can CH please comment on the feasibility of a proposed storm sewer outfall and any concerns issues with the proposed water and sanitary servicing routes for Options 1 through 3.

Any additional comments with respect to a potential development are also welcomed.

Thanks,

David Stafford, P.Eng., LEED AP BD+C
Associate

R.V. Anderson Associates Limited
2001 Sheppard Avenue East, Suite 300
Toronto, ON M2J 4Z8

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From: Colleen Bain <cbain@hrca.on.ca>
Sent: November 15, 2019 3:42 PM
To: David Stafford <DStafford@rvanderson.com>
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; Ronald.MacKenzie@halton.ca; Philip Kelly <philip.kelly@oakville.ca>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Hi David,

Thank you for your email and the conceptual servicing drawing for 1280 Dundas Street. Conservation Halton's (CH's) policies direct new development (including servicing on private land and creation of a new lot) to be outside of the regulated area. In order to determine the extent of the regulated area, studies, stakings and surveys are required to define the regulated natural

features and/or hazards present on the site. CH regulates a distance of 15m from the limit of the flooding and erosion hazards associated with the creek system; 30m from wetlands less than 2 hectares in size; and 120m from wetlands greater than 2 hectares in size or provincially significant wetlands.

CH staff attended the site on March 23, 2018 and staked top of bank. Since that date we have not received a formal survey with the staking delineated for us to approve. Additionally, the pond feature at the front of the property needs to be evaluated to determine if it is a regulated feature; a geotechnical slope stability study is required to determine long term stable top of bank; and we have yet to confirm what would be necessary in terms of floodplain modelling, meander belt assessment, etc.

Upon our preliminary review of the drawing against our existing mapping, we are concerned that the proposed severance appears to create a new regulated lot, which CH policies do not support. Additionally, some of the proposed servicing looks like it may be within the regulated area, which may also not be supported. Finally, on the provided conceptual servicing drawing the "Existing Storm" and "Proposed Storm" are unclear, as they are represented too similarly. Further to Philip's email below, CH will comment on the stormwater management for this site and any new outlets to the regulated area would need to be supported by CH Policy and require a CH Permit.

To provide additional feedback on the proposed works on the site, CH requires:

1. A survey delineating the staking from March 23, 2018; and
2. An updated drawing that clearly differentiates between existing and proposed storm.

In addition to the above, it appears that the property contains lands within the Regional Natural Heritage System, which may need to be evaluated and protected through any future application. Given the natural features and hazards on site, staff strongly recommend a preconsultation with CH, Town and Regional staff to understand a full scope of requirements and possible development constraints on site.

Should you have any further questions, please feel free to contact me to discuss.

Best regards,

Colleen Bain, MES (Planning)
Environmental Planning Analyst

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2257 | Fax 905.336.6684 | cbain@hrca.on.ca
conservationhalton.ca

From: David Stafford <DStafford@rvanderson.com>
Sent: November 15, 2019 3:33 PM

To: Philip Kelly <philip.kelly@oakville.ca>; Colleen Bain <cbain@hrca.on.ca>
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; Ronald.MacKenzie@halton.ca
Subject: RE: 1280 Dundas Street - Servicing Investigation

Thank you Philip,

Can you tentatively hold these dates.

We will not know for sure Ron's schedule until he is back from vacation.

Colleen – can you kindly confirm your availability.

Thankyou,

David Stafford, P.Eng., LEED AP BD+C
Associate

R.V. Anderson Associates Limited
2001 Sheppard Avenue East, Suite 300
Toronto, ON M2J 4Z8

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From: Philip Kelly <philip.kelly@oakville.ca>
Sent: November 14, 2019 3:48 PM
To: David Stafford <DStafford@rvanderson.com>; cbain@hrca.on.ca
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; Ronald.MacKenzie@halton.ca
Subject: RE: 1280 Dundas Street - Servicing Investigation

David – Wed and Friday are open

Region has jurisdiction for Sani and water in Oakville.

Town has jurisdiction over storm. Assume you will need to undertake on-site SWM for at least quantity and quality control. Erosion control likely also required.

Regards

Philip Kelly

Philip Kelly, M.Sc, P.Eng
Manager- Development and Environmental Engineering
Development Engineering
Town of Oakville | 905-845-6601, ext.3298 | f: 905-338-4414 | www.oakville.ca

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From: David Stafford [mailto:DStafford@rvanderson.com]
Sent: Thursday, November 14, 2019 10:36 AM
To: Philip Kelly <philip.kelly@oakville.ca>; cbain@hrca.on.ca
Cc: Mufaddal Shabbir <MShabbir@rvanderson.com>; Andrew S. Turner <aturner@rvanderson.com>; Paul Barrette <paul.barrette@oakville.ca>; Ronald.MacKenzie@halton.ca
Subject: RE: 1280 Dundas Street - Servicing Investigation

Hi Colleen and Philip,

I hope you are doing well.

Further to the emails below, Tridel/Delmanor (the Developer) is currently in the due diligence period of a land acquisition deal at the subject property 1280 Dundas Street West. If the land acquisition is completed, it is our understanding that there would be a severance of the one legal property into two legal properties.

As you may be aware, there is not much in the way of municipal sewer and water fronting the site on Dundas and Fourth Line to service the site. There are twin sanitary forcemains and a 1200mm diameter CPP watermain on Dundas, i.e. no sewer and local distribution watermains. Therefore, we would like to discuss some preliminary servicing options for this site with you.

We have prepared a rough sketch attached to this email illustrating some preliminary sanitary and watermain servicing options for the site at 1280 Dundas Street. This sketch was forwarded to Ron Mackenzie at Halton Region for his review. Ron advised us that he will have some time mid-next week and later to have a look at this.

Ultimately we would like to set up a meeting sometime next Wednesday-Friday to discuss servicing options with you. Due to the limited options available for the site we feel it would be beneficial to have the Region, the Town and Conservation around a table to discuss what our options are.

Can you kindly provide your availability next Wednesday-Friday and hopefully we can arrange a meeting.

Regards,

David Stafford, P.Eng., LEED AP BD+C
Associate

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From: Paul Barrette <paul.barrette@oakville.ca>
Sent: November 11, 2019 11:52 AM
To: David Stafford <DStafford@rvanderson.com>
Cc: Kara Green <KGreen@Tridel.com>; Andrew S. Turner <aturner@rvanderson.com>; Mufaddal Shabbir <MShabbir@rvanderson.com>; Philip Kelly <philip.kelly@oakville.ca>; MacKenzie, Ronald (Ronald.MacKenzie@halton.ca) <Ronald.MacKenzie@halton.ca>; 'Colleen Bain' <cbain@hrca.on.ca>
Subject: RE: 1280 Dundas Street - Servicing Investigation

Hi David,

I spoke with your colleague today and understand that a preliminary servicing plan is expected to be provided mid-week to inform the servicing discussion. At this stage, it would be best to meet directly with Development Engineering, at the Town, Halton Region and Conservation Halton. Should the due diligence advance further and a concept / site plan be prepared, the town could host a pre-consultation meeting which would facilitate a broader range of feedback.

In the meantime, I've copied Philip Kelly (Manager of Development Engineering at the Town), and Ron Makenzie (Development Project Manager at Halton Region) who would be the appropriate contacts to get in touch with to discuss servicing options for this development. I believe you already have Colleen Bain's contact information from Conservation Halton who is also copied on this email.

Paul

Paul Barrette, MCIP, RPP
Senior Planner
Planning Services
Town of Oakville | 905-845-6601, ext.3041 | www.oakville.ca

From: David Stafford [mailto:DStafford@rvanderson.com]
Sent: Thursday, November 07, 2019 6:13 PM
To: PWPermits@halton.ca; edefields@hrca.on.ca; Paul Barrette
Cc: Kara Green; Andrew S. Turner; Mufaddal Shabbir
Subject: 1280 Dundas Street - Servicing Investigation

Hello Emma and Paul and to whom it may concern at the Region of Halton,

R.V. Anderson Associates Limited (RVA) has been retained by Delmanor Oakville Limited (Delmanor) to complete a civil servicing investigation as part of their due diligence stage associated with the offer to purchase a portion of the St. Volodymyr lands located to the north and east of the cultural centre building site at 1280 Dundas Street. Please see attached figure showing the site location.

As part of this due diligence exercise, Delmanor requires an investigation of the site servicing requirements related to the proposed development. It is Delmanor's intent to develop a seniors living centre which may consist of mid to high rise buildings.

At this point in time, RVA has accumulated multiple drawings of existing infrastructure of the surrounding right of ways. Additionally, we are currently scheduling a sub-surface engineering (SUE) investigation to further review existing infrastructure which may service the proposed development.

On behalf of Delmanor, we would like to request a meeting at one of your offices to collectively review possible servicing options which may support the proposed development.

We kindly request that you provide us with the appropriate contacts who we should be in touch with to discuss servicing options for this development. Following receipt of this information, we will follow up with potential servicing options that we have prepared in advance of the meeting so everyone has time to review ahead of time.

Regards,

David Stafford, P.Eng., LEED AP BD+C
Associate

R.V. Anderson Associates Limited
2001 Sheppard Avenue East, Suite 300
Toronto, ON M2J 4Z8

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From: Colleen Bain
To: Dale Leadbeater
Cc: Kara Green; Michael Roy; Jess Taylor
Subject: RE: 1280 Dundas Street W., Oakville - Delmanor
Date: January 08, 2020 9:54:10 AM
Attachments: image011.png
image012.png
image013.png
image014.png
image015.png
image017.png

Hi Dale,

Hope you had a great holiday season!

I just wanted to provide an update based on internal discussions regarding the pond on the site. It has been determined that the pond would not be regulated by CH. As such, the valley feature is the limit of the CH regulated portion of the property, the extent of which is still to be determined by the required geotechnical slope stability study.

Please let me know if you'd still like to meet.

Best regards,

Colleen Bain, MES (Planning)
Environmental Planning Analyst

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2257 | Fax 905.336.6684 | cbain@hrca.on.ca
conservationhalton.ca

From: Dale Leadbeater <dleadbeater@slrconsulting.com>
Sent: December 20, 2019 3:26 PM
To: Colleen Bain <cbain@hrca.on.ca>
Subject: RE: 1280 Dundas Street W., Oakville - Delmanor

Hi! Thanks for this…just checking with the team for timing. I know that Jan 7 doesn't work.

Happy Holidays!

Dale

Dale Leadbeater, B.Sc., B.Ed., P.Biol., R.P.Bio.
Principal Ecologist
905-415-7248
416-996-6976
dleadbeater@slrconsulting.com
SLR Consulting (Canada) Ltd.
300 Town Centre Blvd, Suite 200, Markham, ON L3R 5Z6

From: Colleen Bain <cbain@hrca.on.ca>
Sent: December 20, 2019 2:36 PM
To:
Cc:
Subject: RE: 1280 Dundas Street W., Oakville - Delmanor

Hi Dale,

Are you available to meet at the CH Administrative Building (2596 Britannia Road West, Burlington) from 2:00-3:00pm on Tuesday January 7th or Monday January 13th?

Let me know if either of these work for you, and if not please provide some alternative dates and times.

Happy holidays,

Colleen Bain, MES (Planning)
Environmental Planning Analyst

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2257 | Fax 905.336.6684 | cbain@hrca.on.ca
conservationhalton.ca

Season's Greetings with all the best for the New Year. The office will be closed Tuesday, December 24 at 1:00 pm and will re-open on Thursday, January 2 at 8:30 am. Emails, voicemail messages and faxes will not be retrieved during this time. Please also note that I will be away from the office for the holidays starting Friday December 20.

From: Dale Leadbeater <dleadbeater@slrconsulting.com>
Sent: December 10, 2019 1:56 PM
To: Colleen Bain <cbain@hrca.on.ca>
Cc: Kara Green <KGreen@tridel.com>; Michael Roy <mroy@slrconsulting.com>; Jess Taylor <jtaylor@hrca.on.ca>
Subject: Re: 1280 Dundas Street W., Oakville - Delmanor

Excellent! Thanks so much. I had a wetland biologist and fisheries biologist out last Friday so I have a little more information.

I appreciate you getting back to me and look forward to the dates.

Cheers

Sent from my iPhone

Dale Leadbeater, B.Sc., B.Ed., P.Biol., R.P.Bio.
Principal Ecologist

905-415-7248
416-996-6976
dleadbeater@slrconsulting.com

SLR Consulting (Canada) Ltd.
300 Town Centre Blvd, Suite 200, Markham, ON L3R 5Z6

On Dec 10, 2019, at 1:03 PM, Colleen Bain <cbain@hrca.on.ca> wrote:

Good afternoon Dale,

Sorry we keep missing each other on the phone, thank you for your patience.

We are having internal discussions about the wetland, and would also like to meet with you to discuss. I will provide potential meeting dates within the next week or so.

Best regards,

Colleen Bain, MES (Planning)
Environmental Planning Analyst

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2257 | Fax 905.336.6684 | cbain@hrca.on.ca
conservationhalton.ca

From: Dale Leadbeater <dleadbeater@slrconsulting.com>
Sent: December 5, 2019 3:26 PM
To: Colleen Bain <cbain@hrca.on.ca>
Cc: 'Kara Green' <KGreen@Tridel.com>; Michael Roy <mroy@slrconsulting.com>
Subject: 1280 Dundas Street W., Oakville - Delmanor

Greetings Colleen!

I'm following up on our conversation regarding the features on the above property, most notably the pond and the HDF in the middle of the site. I believe that you were going to discuss with Emma regarding the information you have (site photos among the data). I would like to meet at either of our offices or on the site to discuss the function and extent of regulated area. As you are aware, this is of great consequence to the potential future use of the property.

Please let me know when we could get together.

Kind regards
Dale

Dale Leadbeater, B.Sc., B.Ed., P.Biol., R.P.Bio.
Principal Ecologist

905-415-7248
416-996-6976
dleadbeater@slrconsulting.com

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APPENDIX B
Field Sheets

Environmental Impact Study
Delmanor West Oak Inc.
SLR Project No.: 209.40574.00000

Amphibian Call Survey

Project Name/No: Tridel

Date: May 3, 2018 **Observers:** KLF/LSG

Overnight Temp (21:00 to 5:00): High: 17 Low: 14 Overnight Precip? ☐YES ☑NO

Station : 1 of 1 **Time of Survey:** Start 22:00 End 22:50

UTM: E 600952 N 4812348 ±2m

Direction: W **Distance** 25 m

Air Temp (°C): Start: 16 End: 16 **RH (%):** 80 **Sky Code[1]:** 1 **Wind[2] :** 0

Landscape Context:	**Water Feature:** MMMS
☐ Upland Forest ☐ Treed Swamp ☒ Suburban / Urban ☐ Marsh / Thicket Swamp ☐ Agricultural Field / Meadow ☒ manicured	☒ Marsh ☐ Swamp ☐ Vernal Pool ☐ Nat. Pond ☐ Natural swale / depression ☐ Excavated Ditch/Pond ☐ Impoundment
Other: Road (Dundas), church	Other:

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]			L1			L1				
Count			6			3				

Comments: rainfall during day and some rain fall on days prior to survey
noise from road = level 2 but calling can be distinguished

Station : _____ of _____ **Time of Survey:** Start _____ End _____

UTM: E _____ N _____

Direction: _____ **Distance:** _____ m

Air Temp (°C): Start: ____ End: ____ **RH (%):** _____ **Sky Code[1]:** _____ **Wind[2] :** _____

Landscape Context:	**Water Feature:**
☐ Upland Forest ☐ Treed Swamp ☐ Suburban / Urban ☐ Marsh / Thicket Swamp ☐ Agricultural Field / Meadow	☐ Marsh ☐ Swamp ☐ Vernal Pool ☐ Nat. Pond ☐ Natural swale / depression ☐ Excavated Ditch/Pond ☐ Impoundment
Other:	Other:

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]										
Count										

Comments: _____

[1] NAAMP/ Beaufort Sky Code
0 = clear (no cloud cover)
1 = partly cloudy (scattered or broken) or variable
2 = cloudy or overcast
3 = sandstorm, duststorm or blowing snow
4 = fog, smoke, thick dust, or haze
5 = drizzle or light rain
6 = rain 7 = snow or snow/rain mix 8 = showers
9 = thunderstorms

[2] Beaufort Wind Scale
0 = calm, smoke rises vertically (0-2km/hr)
1 = Light air movement, smoke drifts (3-5)
2 = Slight breeze, wind felt on face; leaves rustle (6-11)
3= Gentle breeze, leaves & twigs in constant motion (12-19)
4= Moderate breeze, small branches moving, dust & loose paper (20-30);
5= Fresh breeze, small trees begin to sway (31-39)
6= Strong breeze, large branches in motion (40-50)

[3] Call Level Codes
Level 1 – individual calls can be counted, no overlap
Level 2 – some calls can be counted, some overlap
Level 3 – calls continuous and overlapping, individuals not distinguishable

This sheet was developed following guidelines of the Marsh Monitoring Program (MMP) developed by Bird Studies Canada, in partnership with Environment Canada and adapted from Ecoplans Limited

Amphibian Call Survey

Project Name/No: _____

Date: _____ **Observers:** _____

Overnight Temp (21:00 to 5:00): High: ____ Low: ____ Overnight Precip? ☐YES ☐NO

Station : _____ of _____ **Time of Survey:** Start _____ End _____

UTM: E _____ N _____

Direction: _____ **Distance** _____ m

Air Temp (°C): Start: ____ End: ____ **RH (%):** _____ **Sky Code[1]:** _____ **Wind[2] :** _____

Landscape Context:	**Water Feature:**
☐ Upland Forest ☐ Treed Swamp ☐ Suburban / Urban ☐ Marsh / Thicket Swamp ☐Agricultural Field / Meadow	☐Marsh ☐Swamp☐ Vernal Pool ☐ Nat. Pond ☐Natural swale / depression ☐Excavated Ditch/Pond ☐Impoundment
Other: _____	Other: _____

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]										
Count										

Comments: _____

_____

_____

Station : _____ of _____ **Time of Survey:** Start _____ End _____

UTM: E _____ N _____

Direction: _____ **Distance:** _____ m

Air Temp (°C): Start: ____ End: ____ **RH (%):** _____ **Sky Code[1]:** _____ **Wind[2] :** _____

Landscape Context:	**Water Feature:**
☐ Upland Forest ☐ Treed Swamp ☐ Suburban / Urban ☐ Marsh / Thicket Swamp ☐Agricultural Field / Meadow	☐Marsh ☐Swamp☐ Vernal Pool ☐ Nat. Pond ☐Natural swale / depression ☐Excavated Ditch/Pond ☐Impoundment
Other: _____	Other: _____

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]										
Count										

Comments: _____

_____

_____

[1]NAAMP/ Beaufort Sky Code
0 = clear (no cloud cover)
1 = partly cloudy (scattered or broken) or variable
2 = cloudy or overcast
3 = sandstorm, duststorm or blowing snow
4 = fog, smoke, thick dust, or haze
5 = drizzle or light rain
6 = rain 7 = snow or snow/rain mix 8 = showers
9 = thunderstorms

[2] Beaufort Wind Scale
0 = calm, smoke rises vertically (0-2km/hr)
1 = Light air movement, smoke drifts (3-5)
2 = Slight breeze, wind felt on face; leaves rustle (6-11)
3= Gentle breeze, leaves & twigs in constant motion (12-19)
4= Moderate breeze, small branches moving, dust & loose paper (20-30);
5= Fresh breeze, small trees begin to sway (31-39)
6= Strong breeze, large branches in motion (40-50)

[3] Call Level Codes
Level 1 – individual calls can be counted, no overlap
Level 2 – some calls can be counted, some overlap
Level 3 – calls continuous and overlapping, individuals not distinguishable

This sheet was developed following guidelines of the Marsh Monitoring Program (MMP) developed by Bird Studies Canada, in partnership with Environment Canada and adapted from Ecoplans Limited

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

1280 Dundas Street West, Oakville

Notes: Amphibian Survey 1

Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion

Wetland
- Provincially Significant Wetland Evaluated
- Non - Provincially Significant Wetland Evaluated
- Unevaluated Wetland

Area of Natural Heritage & Scientific Interest (ANSI)
- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI

Greenbelt Plan
- Boundary
- River Valley Connections

Land Use Designations
- Protected Countryside
- Towns and Villages
- Hamlets
- Urban River Valley
- Specialty Crop Area

Niagara Escarpment Plan (NEP)
- Boundary
- Parks and Open Space System

Land Use Designations
- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Mineral Resource Extraction Area
- Escarpment Recreation Area
- Urban Area
- Minor Urban Centre

Oak Ridges Moraine Conservation Plan (ORM)
- Boundary

Land Use Designations
- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement
- Palgrave Estates Residential Community
- Settlement Area

0.2 0 0.1 0.2 Kilometers

Scale: 1 : 4,513

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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Amphibian Call Survey

Project Name/No: Oakville 209.40574.0

Date: May 31 / 18 **Observers:** Lorry Wickett

Overnight Temp (21:00 to 5:00): High: ____ Low: ____ Overnight Precip? ☐YES ☐NO

Station : 1 of 3 **Time of Survey:** Start 2154 End 2159

UTM: E 600952 N 4812348 ±2m

Direction: W **Distance** 25 m

Air Temp (°C): Start: 30 End: 30 **RH (%):** 88 **Sky Code[1]:** PC(1) **Wind[2] :** SW-5-10

Landscape Context:	**Water Feature:** mam/mas
☐ Upland Forest ☐ Treed Swamp ☒ Suburban / Urban ☐ Marsh / Thicket Swamp ☐ Agricultural Field / Meadow ☒ manicured	☒ Marsh ☐ Swamp ☐ Vernal Pool ☐ Nat. Pond ☐ Natural swale / depression ☐ Excavated Ditch/Pond ☐ Impoundment
Other: Road (Dundas), church	Other:

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]					2		2			
Count					4 or 5		4 or 5			

Comments: Good calling - rain in first 1/2 of day but no rain during survey.

Station : 2 of 3 **Time of Survey:** Start 2140 End 2145

UTM: E ____ N ____

Direction: ____ **Distance:** ____ m

Air Temp (°C): Start: 30° End: 30° **RH (%):** ____ **Sky Code[1]:** ____ **Wind[2] :** SW-5-10km/h Partcloudy

Landscape Context:	**Water Feature:**
☐ Upland Forest ☐ Treed Swamp ☐ Suburban / Urban ☐ Marsh / Thicket Swamp ☐ Agricultural Field / Meadow	☐ Marsh ☐ Swamp ☐ Vernal Pool ☐ Nat. Pond ☐ Natural swale / depression ☐ Excavated Ditch/Pond ☐ Impoundment
Other:	Other:

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]			NO CALLING.							
Count										

Comments:

[1] **NAAMP/ Beaufort Sky Code**
0 = clear (no cloud cover)
1 = partly cloudy (scattered or broken) or variable
2 = cloudy or overcast
3 = sandstorm, duststorm or blowing snow
4 = fog, smoke, thick dust, or haze
5 = drizzle or light rain
6 = rain 7 = snow or snow/rain mix 8 = showers
9 = thunderstorms

[2] Beaufort Wind Scale
0 = calm, smoke rises vertically (0-2km/hr)
1 = Light air movement, smoke drifts (3-5)
2 = Slight breeze, wind felt on face; leaves rustle (6-11)
3= Gentle breeze, leaves & twigs in constant motion (12-19)
4= Moderate breeze, small branches moving, dust & loose paper (20-30);
5= Fresh breeze, small trees begin to sway (31-39)
6= Strong breeze, large branches in motion (40-50)

[3] Call Level Codes
Level 1 – individual calls can be counted, no overlap
Level 2 – some calls can be counted, some overlap
Level 3 – calls continuous and overlapping, individuals not distinguishable

Amphibian Call Survey

Project Name/No: Oakville 209 40574

Date: May 31 / 18 **Observers:** Larry Wickett

Overnight Temp (21:00 to 5:00): High: ____ Low: ____ Overnight Precip? ☐YES ☐NO

Station : 3 of 3 **Time of Survey:** Start 2132 End 2137

UTM: E ____ N ____

Direction: ____ **Distance** ____m

Air Temp (°C): Start: ____ End: ____ **RH (%):** ____ **Sky Code[1]:** ____ **Wind[2] :** ____

Landscape Context:	**Water Feature:**
☐ Upland Forest ☐ Treed Swamp ☐ Suburban / Urban ☐ Marsh / Thicket Swamp ☐Agricultural Field / Meadow	☐Marsh ☐Swamp☐ Vernal Pool ☐ Nat. Pond ☐Natural swale / depression ☐Excavated Ditch/Pond ☐Impoundment
Other: ____	Other: ____

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]					1					
Count					2					

Comments: on west side of Driveway

very humid - rain early AM - dry night

Station : 3 of 3 **Time of Survey:** Start 2201 End 2204

UTM: E ____ N ____

Direction: ____ **Distance:** ____ m

Air Temp (°C): Start: 30 End: 30 **RH (%):** ____ **Sky Code[1]:** PC **Wind[2] :** SW - 5-10

Landscape Context:	**Water Feature:**
☐ Upland Forest ☐ Treed Swamp ☐ Suburban / Urban ☐ Marsh / Thicket Swamp ☐Agricultural Field / Meadow	☐Marsh ☐Swamp☐ Vernal Pool ☐ Nat. Pond ☐Natural swale / depression ☐Excavated Ditch/Pond ☐Impoundment
Other: ____	Other: ____

	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other	Other
Level[3]			NO CALLING							
Count										

Comments: ____

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Level 1 – individual calls can be counted, no overlap
Level 2 – some calls can be counted, some overlap
Level 3 – calls continuous and overlapping, individuals not distinguishable

This sheet was developed following guidelines of the Marsh Monitoring Program (MMP) developed by Bird Studies Canada, in partnership with Environment Canada and adapted from Ecoplans Limited

June 26, 2018 sky: O temp: 11°C start 05:15
LG [redacted] wind: O 16°C end. 07:00

Breeding Bird Survey Form

Project No.: 209.40574 **Project Name:** Tridel - 1280 Dundas Street W

Date: June 26, 2018 **Time Start:** 0515 **Observers:** LG

Location or Site ID: — **Time Stop:** 07:00. **Beaufort Sky Code:** 0

Ppt: 0 **Temp:** start: 11°C end: 18°C **Beaufort Wind Scale:** 0

Location:

Include Highest Breeding Evidence for species in "Total Column"

Species	Tally	Total
Alder Flycatcher		
Am. Crow	1 CF	1
Am. Goldfinch		
Am. Kestrel		
Am. Redstart		
Am. Robin	𝍸 CF	9
B.-c. Chickadee	III S	3
Baltimore Oriole		
Black & White W.		
Black-b. Cuckoo		
Blue Jay	II S	2
Br. Thrasher		
Br.-h. Cowbird		
C. Grackle	𝍸 S	6
C. Waxwing		
C. Yellowthroat		
Canada Goose		
Chestnut-side W.		
Chipping Sparrow		
Downy Woodp.		
E. Kingbird	1 H	1
E. Phoebe	IIII CF	4
E. Starling	𝍸 B	5
Field Sparrow		

Species	Tally	Total
Gr. Crest Flycatcher	1 S	1
Gray Catbird		
Hairy Woodp.		
House Sparrow		
House Wren	II S	2
Indigo Bunting		
Killdeer		
Least Flycatcher		
Mallard		
Mourning Dove		
Mourning Warbler		
N. Cardinal	II S	2
N. Flicker		
N. Waterthrush		
Nashville Warbler		
Ovenbird		
Red-br. Nuthatch		
Red-eye Vireo		
Red-t. Hawk		
Red-w. Blackbird	𝍸 CF	10
Rose-br. Grosbeak		
Ruby-thr. Hum.		
Ruffed Grouse		
Savannah Sparrow		

Species	Tally	Total
Scarlet Tanager		
Song Sparrow	IIII S	4
Spotted Sand.		
Swamp Sparrow		
Tree Swallow		
Veery		
Vesper Sparrow		
Warbling Vireo		
White-br. Nuthatch		
White-thr. Sp.		
Willow Flycatcher		
Winter Wren		
Yellow Warbler		
Red-tailed Hawk	II P	2
House Finch	1 S	1
*Wood Thrush		
*E. Wood Pewee	1 S	1
*Bobolink		
*E. Meadowlark		
*Barn Swallow		

Notes

*eastern cottontail, gray squirrel, red squirrel

* *Complete SAR field form for all species of conservation concern.*

SLR

Proj. No. Date:

Species	Tally	Total	Species	Tally	Total	Species	Tally	Total

Notes:

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6= Strong breeze, large branches in motion (40-50)

SLR

Species of Conservation Concern Observation Form
WILDLIFE

Project Name and No.
Reference UNIT / Associated ELC POLYGON No: FOD
(i.e. side road name/ lot and concession number)

Date and Time (24 hr) of Observation: June 26, 2018 08:00

Identify Species Encountered (If known) or describe physical characteristics (*i.e. colour, markings, etc.*):

Eastern Wood-pewee

Name of Observer and contact number: Lyndsay Greene

Photo Taken: yes ☐ No ☒

SPECIES INFORMATION

Species Description (*number of individuals, approx size, male, female*): 1 singing male

Status (circle all that apply):
- (Alive)
- Dead
- Injured

Behavior (circle all that apply):
- Basking
- Feeding
- Nesting
- (Other) - singing

Additional Comments:

Follow Up Required- : yes ☐ No ☒ *I.e. hibernacula/ gestation / nesting probability*

SITE CONDITIONS

Weather: Beaufort Wind 0 Sky Code 0 Temperature °C: 11-18°C

Additional Comments:

Geographic Location:
UTM Coordinates : Zone 17 T Easting 601060 Northing: 4812144
Additional location markers (if available) :

Habitat Conditions of Sighting Location (circle all that apply):

Roadway / Gravel shoulder	Rock Outcrop	Lake
Utility Corridor	Open Meadow/Field	Marsh
Trail	(Forest/woodland)	Swamp treed
(Residential)	Shoreline/ Bank	Swamp shrub
		(River/ Stream) - valley system with creek

Additional Notes/Comments:

2NAAMP/ Beaufort Sky Codes
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6= Strong breeze, large branches in motion (40-50)

Location 1280 Dundas Date 26 Mar 2018

Project / Client 209.40574

need floodline meander belt } Emma

Emma, Sarah, Alan } CVC

staking along rail excludes some tableland - Dave thinks stable ToB will overcome not an issue

Sam ? J.D. Barnes

Mike

discussed c̄ MM

Bohdan, George } church

AMRO
BCCH
RWBB

Δ in drainage c̄ Dundas widening directed east to valley - cut off from pond

pond drier w/

fill ?

[illegible] Nov 2021 Delmanor 10:00 am

K. Logan 3° 1/8 2

[illegible] muskrat MBR

den x 3 DAL

[illegible] outfall

[illegible] outfall into valley.

Valley feature - N. ROBPSEU; ACEPLAT

below gap - slopes SAL x RUBE CARCARO

ACENEGU Or

RHACATH. Ow

invert - RHACATH RUBSAMI? Bd

ALLPETI Aw

GEUM

DIPFUL

garbage RUBIDEA

IMPCAPE

Downstream - more native

SOLFLEX Mh AC=RUBR

SYMLANC Bd

Or

Id

APPENDIX C
Tree Inventory

Environmental Impact Study
Delmanor West Oak Inc.
SLR Project No.: 209.40574.00000

Tree Inventory and Preservation Plan &
Shade Impact Analysis Report
1280 Dundas Street West
Oakville, Ontario

prepared for

Delmanor West Oak Inc.
4800 Dufferin Street
Toronto, Ontario
M3H 5S9

prepared by

KUNTZ
FORESTRY
CONSULTING Inc.

146 Lakeshore Road West
PO Box 1267 Lakeshore W PO
Oakville ON L6K 0B3
t: 289.837.1871
e: consult@kuntzforestry.ca

31 July 2020
Revision 1: 24 August 2020

KUNTZ FORESTRY CONSULTING INC Project P2451

Table of Contents

1.0 Introduction

Kuntz Forestry Consulting Inc. was retained by Delmanor West Oak Inc. to complete a Tree Inventory and Preservation Plan & Shade Impact Analysis Report in support of a proposed development application for the eastern portion of the property located at 1280 Dundas Street West in Oakville. The property is located south of Dundas Street West and west of Fourth Line within a residential area. The property is adjacent to the Sixteen Mile Creek natural heritage feature.

The work plan for the tree preservation study included the following:

- Prepare an inventory of tree resources over 10cm DBH occurring on and within six metres of the proposed development, and trees of all sizes on the road right-of-way;
- Evaluate potential tree saving opportunities based on proposed development plans; and
- Document the findings in a Tree Inventory and Preservation Plan Report.

The work plan for the shade impact analysis included the following:

- Obtain Ecological Land Classification (ELC) data for vegetation resources on the subject property east of the proposed buildings and on the adjacent natural heritage vegetation community on the east side of Old Fourth Line;
- Review shade studies prepared by ICKE Brochu Architects Inc.;
- Evaluate potential impacts of shade on vegetation communities assessed; and
- Document the findings in a Shade Impact Analysis Report.

The results of the evaluation are provided below.

2.0 Methodology

Tree Inventory and Preservation Plan

Field assessments for the tree inventory were conducted on 27 July 2020 and 29 July 2020. Trees measuring over 10cm DBH on and within six metres of the subject property and trees of all sizes on the road right-of-way were identified in the tree inventory. Trees were located using the topographic survey provided, aerial imagery, and estimates made in the field. Trees were tagged by surveyors with the numbers 137 – 139, 142 – 174, 176 – 183, 185 – 203, 205 – 299, 301, and 305 – 395. Trees that were not surveyed were labeled with the numbers 1 – P34.

All individual tree resources included in the inventory were visually assessed for condition utilizing the following parameters:

Tree # - number assigned to tree that corresponds to Figure 1.
Species - common and botanical names provided in the inventory table.
DBH - diameter (centimetres) at breast height, measured at 1.4 metres above the ground.
Condition - condition of tree considering trunk integrity, crown structure, and crown vigour. Condition ratings include poor (P), fair (F) and good (G).
Drip Line – Crown radius; and
Comments - additional relevant detail.

Where trees were situated in groups, they were inventoried in tree polygons. Trees within a tree polygon were inventoried using a 100% tally analysis by species, size class, and quality. On private property, trees with a DBH of 10cm or greater were included in the stand tally analysis. Within the City right-of-way, trees of all sizes were included in the stand tally analysis. Trees were assessed for condition utilizing the following parameters.

Species: Common and botanical names provided in the inventory table;
Size Class (DBH): 1 – 24cm / 10 – 24cm, 26 – 36cm, 38 – 48 cm, 50cm and above
Quality Class: Acceptable Growing Stock (AGS), Unacceptable Growing Stock (UGS)

Trees classified as AGS are trees with no major defects in the bole and exhibit a relatively good crown structure and vigour. Trees classified as UGS are trees with a major defect in the bole or exhibiting a relatively poor crown structure or vigour. Refer to Table 1 and Table 2 for the detailed tree inventory.

Shade Impact Analysis

Field assessments were conducted on 29 July 2020. The areas to be assessed were informed by the Sun/Shadow Study prepared by Icke Brochu Architects Inc. on 27 May 2020. Vegetation communities on the subject property east of the proposed buildings and on the adjacent top-of-bank natural heritage vegetation community on the east side of Old Fourth Line were visually assessed to determine vegetation types and plant associations. Trees along the slope on the east side of Old Fourth Line were not assessed, as the Sun/Shadow Study indicated that these trees would not be impacted. Information obtained during the field assessments was used to assess how potential shade impacts from the proposed development may affect existing vegetation communities.

Tree Valuation

A tree valuation was calculated for the trees proposed for removal within the road right-of-way based on the information obtained by the tree inventory and stand tally analysis conducted in the field. The value was calculated using the Reproduction Cost Method – Trunk Formula Technique as described in the Guide for Plant Appraisal, 10th Edition (CTLA, 2019). The value was calculated using the Trunk Formula Technique. This method is described in the Guide for Plant Appraisal, 10th Edition (CTLA 2018). The Ontario Supplement (2003) provides regionally relevant data pertaining to basic costs for trees.

Trunk Formula Technique

This method is used for trees that are larger than what is commonly available for transplant from a nursery. The Unit Tree Cost of the replacement tree is derived from a survey of nurseries or supplied by the Regional Plant Appraisal Council and published within the Ontario Supplement (2003). For Ontario, the unit tree cost has been set at \$6.51/cm^2 within the Supplement and this value has been used for the calculation. For trees that were small enough in size to be replaced with nursery stock, the price of the nursery stock was obtained through wholesale price quotes from multiple nurseries throughout southern Ontario.

The Basic Tree Cost is calculated by multiplying the unit tree cost by the cross-sectional area of the subject tree. For multi-stemmed trees, the appraised trunk area considers the cross-sectional area of all stems. The Appraised Value is calculated by multiplying the Basic

Reproduction Cost by the three depreciation factors (Condition Rating, Functional Limitation Rating, and External Limitation Rating, as described in the Guide).
The appraised value of trees is therefore calculated using the following equation:

Basic Tree Cost = Appraised Tree Trunk Area X Unit Tree Cost

Appraised Value = Basic Tree Cost X Condition Rating X Functional Limitation Rating X External Limitation Rating

Functional Limitation Ratings and External Limitation Ratings are calculated according to the methods outlined in the guide. Condition ratings were calculated based on the assessed condition of the trees on the site and in accordance with the guide. For trees in polygons, the average DBH was used to calculate the appraisal value. For trees with appraisal values less than $744.00 (Town of Oakville's minimum value per tree), their values were set to $744.00.

3.0 Tree Inventory and Preservation Plan

Existing Site Conditions

The subject area is currently occupied by vacant meadow lands with scattered landscape trees and an asphalt driveway. A wooded area exists along the east and south boundaries of the subject area. The western portion of the property (which is not proposed for development) is occupied by the St. Vlodymyr Cultural Centre. Tree resources exist in the form of landscape trees and natural regeneration. Refer to Figure 1 for the existing site conditions.

Individual Tree Resources

The tree inventory documented 193 trees and 13 tree polygons and within six metres of the proposed development and within the road right-of-way. Tree resources are comprised of Silver Maple (*Acer saccharinum*), Eastern White Cedar (*Thuja occidentalis*), Manitoba Maple (*Acer negundo*), White Pine (*Pinus strobus*), White Ash (*Fraxinus americana*), Apple species (*Malus* sp.), Norway Maple (*Acer platanoides*), White Elm (*Ulmus americana*), White Spruce (*Picea glauca*), Black Walnut (*Juglans nigra*), Basswood (*Tilia americana*), Willow species (*Salix* sp.), Black Locust (*Robinia pseudoacacia*), Eastern Redcedar (*Juniperus virginiana*), Horsechestnut (*Aesculus hippocastanum*), Yew species (*Taxus* sp.), Sugar Maple (*Acer saccharum*), English Oak (*Quercus robur*), Japanese Walnut (*Juglans ailantifolia*), Red Oak (*Quercus rubra*), Blue Spruce (*Picea pungens*), Hazelnut species (*Corylus* sp.), Bur Oak (*Quercus macrocarpa*), Norway Spruce (*Picea abies*), Scots Pine (*Pinus sylvestris*), Cherry species (*Prunus* sp.), Pear species (*Pyrus* sp.), Black Cherry (*Prunus serotina*), Austrian Pine (*Pinus nigra*), Amur Maple (*Acer ginnala*), and Silk Lilac (*Syringa reticulata*). Refer to Table 1 and Table 2 for the full tree inventory and Figure 1 for the location of trees reported in the tree inventory.

Trees 290 and 293 were identified as a Japanese Walnuts (*Juglans ailantifolia*), which can often be confused with Butternut. Pure, naturally-occurring Butternut are protected by the Endangered Species Act (ESA). A visual assessment of Trees 290 and 293 was conducted by KFCI and the trees were identified as Japanese Walnuts, therefore Butternut Health Assessments are not required.

Proposed Works

The proposed development includes the demolition of the existing asphalt road and the construction of a seniors living complex with multiple buildings, a parking lot, multiple vehicle laneways, amenity areas, and landscaping upgrades. Two vehicle entranceways are proposed on the north side of the development. Refer to Figure 1 for the existing conditions and proposed site plan.

Development Impacts/Tree Removals

The following sections provide a discussion and analysis of impacts, tree removal requirements, and tree preservation relative to the proposed development and existing conditions.

The removal of Trees 1, 2, 6 – 8, 10, 12 – 31, P33, 137 – 139, 142 – 174, 176 – 183, 185 – 203, 205 – 226, 233 – 236, 244, 253, 257, 258, 263, 278 – 299, 301, 305 – 351, 353, and 368 – 395 is required to accommodate the proposed site plan. Trees 1, 2, 168, 176, 179, 197 – 199, 201, 206 – 208, and 293 conflict with the proposed vehicle laneways. Trees 29 and P33 have trunks that conflict with the proposed entranceways off Fourth Line. Trees P24, and 174 are located close to the proposed laneways such that their roots and / or trunks will be impacted by construction. Trees 6 – 8, P13, P17, 18, 137 – 139, 142 – 161, 169 – 172, 180, 193 – 196, 209 – 222, 236, 289 – 292, 294 – 299, 301, 305, 311, 312, 343, 347 – 350, and 378 – 394 conflict with the proposed buildings. Trees 12, 223, 234, 235, 284 – 288, 306, 368 – 377, and 395 are located close to the proposed buildings such that their roots and / or crowns would be impacted by construction. Trees 14 – 16, 162 – 164, 166, 280, 282, 313 – 342, and 344 – 346 conflict with the proposed parking lot. Trees 10, 165, 167, 177, 178, 189 – 192, 200, 203, 278, 279, 281, and 283 conflict with the proposed landscaping upgrades. Trees 19, 20, 181 – 188, 202, 205, 307 – 310, and 351 conflict with the proposed amenity areas. Trees 25 – 28, 30, and 31 have tree protection zones that conflict with the proposed development feature walls along Fourth Line. Tree 22 is advised for removal due to its proximity to Tree 353.

Trees 21, 23, 150, 166 – 180, 189, 190, 194, 196, 210, 216/219, 224 – 226, 233, 244, 253, 257, 258, 263, 283, 290, 293, 299, 311, and 353 are in poor or hazardous condition and their removal is advised regardless of the site plan.

Trees 1, 2, 7, 8, 10, 12 – 14, 16 – 18, 20 – 23, 137 – 139, 142 – 174, 176 – 183, 185 – 203, 205 – 226, 233 – 236, 244, 253, 257, 258, 263, 278 – 299, 301, 305 – 351, 353 and 368 – 395 are greater than 15cm DBH, therefore a permit will be required prior to their removal. Trees 25 – 31 and P33 are located within the road right-of-way and a permit is required prior to the removal of these trees.

Tree Preservation

Preservation of Trees 3 – P5, P9, P11, 32, P34, 227 – 232, 237 – 243, 245 – 252, 254 – 256, 259 – 262, 264 – 277, 352, 354 – 367 and trees within the woodland south of the proposed development will be possible with the use of appropriate tree protection measures as indicated on Figure 1. Tree protection measures must be implemented prior to the proposed work to ensure tree resources designated for retention are not impacted by the proposed development. Refer to Figure 1 for the location of required tree preservation

fencing, general Tree Protection Plan Notes, tree preservation fence details. Special mitigation measures are prescribed for P5, P9, P11 and the trees in the environmental feature on the south side of the property, as described below.

P5, P9, and P11

It is recommended that trees in poor and / or hazardous conditions within tree polygons P5, P9, and P11 are removed prior to development. Prior to the proposed work, tree protection fencing should be placed at the dripline edge of these polygons, as shown in Figure 1.

South Environmental Feature

Prior to construction, tree protection fencing should be placed either at the dripline edge of the retained trees within the existing environmental feature or along the property boundary, depending on what option provides the most tree protection. For the trees adjacent to the proposed vehicle laneway, tree protection fencing should be placed 2.5 metres south of the laneway to provide adequate space for construction. Construction of the vehicle laneway must not encroach within the driplines of any retained trees within the adjacent protected environmental feature. Refer to Figure 1 for the location of the tree protection fencing.

Tree Valuation

Refer to Table 3 for the results of the tree valuation. The total value of all Town-owned trees proposed for removal is $17,856.00.

4.0 Shade Impact Analysis

Vegetation Resources

The vegetation features in the subject area subject to the shade analysis were assessed using Ecological Land Classification (ELC). Field investigations conducted on 29 July 2020 used visual observations to determine the ELC community. Communities are described below according to the Ecological Land Classification system for southern Ontario (Lee *et al. 1998, draft 2008).*

Dry-Fresh Sugar Maple Deciduous Forest Ecosite

The vegetation communities on the subject property east of the proposed buildings and on the adjacent natural heritage vegetation community on the east side of Old Fourth Line (top of bank) were both identified as a Dry-Fresh Sugar Maple Deciduous Forest Ecosite (FOD5). Trees were predominantly young to mid-age and had a canopy cover of greater than 60%. The ecosite community was found to be disturbed by anthropogenic activity, as evidenced by the presence of meadow and roadside species. Dominant tree species included Sugar Maple (*Acer saccharum*), Eastern White Cedar (*Thuja occidentalis*), Basswood (*Tilia americana*), and Black Locust (*Robinia pseudoacacia*) with occurrences of White Ash (*Fraxinus americana*), Willow species (*Salix* sp.), Trembling Aspen (*Populus tremuloides*), Black Walnut (*Juglans nigra*), White Oak (*Quercus alba*), Bur Oak (*Quercus macrocarpa*), White Pine (*Pinus strobus*), and Manitoba Maple (*Acer negundo*). Dominant shrub species included Staghorn Sumac (*Rhus typhina*) and Common Buckthorn (*Rhamnus cathartica*), with occurrences of Serviceberry (*Amelanchier* sp.), Common Lilac (*Syringa vulgaris*), Rose

(*Rosa* sp.), and Hawthorn (*Crataegus* sp.). Herbaceous species included Grasses, Raspberry (*Rubus* sp.), Riverbank Grape (*Vitis riparia*), Canada Thistle (*Cirsium arvense*), Goldenrod (*Solidago* sp.), Virginia Creeper (*Parthenocissus quinquefolia*), Garlic Mustard (*Alliaria petiolate*), and Common Burdock (*Arctium minus*).

Shade Impacts

The impacts of shade from the proposed development will be minimal on the tree communities, as the dominant native species such as Sugar Maple, Eastern White Cedar, and Basswood are shade tolerant. Trees species with a moderate occurrence on site such as White Ash, White Oak, Bur Oak, and White Pine are partially shade tolerant and will be minimally affected by the shade created by the proposed development. Tree species such as Willow species, Black Walnut, and Trembling Aspen are shade intolerant and may be displaced from the community and replaced with more shade tolerant species over time. These species, however, were found in low-moderate occurrences and the overall community will be minimally affected. Refer to the table below for details of the shade impact analysis for the tree species observed.

Shade Impact Analysis of Tree Species

Tree Species	Shade Tolerance	Impacts
High Occurrence		
Sugar Maple (*Acer saccharum*)	Shade Tolerant	Negligible
Eastern White Cedar (*Thuja occidentalis*)	Shade Tolerant	Negligible
Basswood (*Tilia americana*)	Shade Tolerant	Negligible
Black Locust (*Robinia pseudoacacia*)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time. This species is invasive and therefore not desirable in the vegetation community.
Moderate Occurrence		
White Ash (*Fraxinus americana*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Willow species (*Salix* sp.)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time.
White Oak (*Quercus alba*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Bur Oak (*Quercus macrocarpa*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
White Pine (*Pinus strobus*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Manitoba Maple (*Acer negundo*)	Shade Tolerant	Negligible
Low Occurrence		
Black Walnut (*Juglans nigra*)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time.
Norway Spruce (*Picea abies*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Trembling Aspen (*Populus tremuloides*)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time.

The impacts of shade from the proposed development may impact the shrub community, as Staghorn Sumac, which dominates the shrub layer, is shade intolerant. Shade from the proposed development may cause the displacement of this species over time as it is replaced with more shade tolerant species such as Common Buckthorn. Common Lilac may be impacted as it is also shade intolerant; however, it is invasive and therefore not desirable in the vegetation community. Other shrub species observed are partially shade tolerant and will be minimally affected by the shade created by the proposed development. Refer to the table below for details of the shade impact analysis for the shrub species observed.

Shade Impact Analysis of Shrub Species

Shrub Species	Shade Tolerance	Impacts
High Occurrence		
Staghorn Sumac (*Rhus typhina*)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time.
Common Buckthorn (*Rhamnus cathartica*)	Shade Tolerant	Negligible
Moderate Occurrence		
Serviceberry (*Amelanchier* sp.)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Common Lilac (*Syringa vulgaris*)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time. This species is invasive and therefore not desirable in the vegetation community.
Low Occurrence		
Rose (*Rosa* sp.)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Hawthorn (*Crataegus* sp.)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.

The shade created by the proposed development may impact the herbaceous species found in the subject area. Shade intolerant species such as Grasses, Canada Thistle, and Goldenrod, which were found in high occurrences, may be displaced over time and replaced by prolific shade tolerant herbaceous species such as Virginia Creeper, Garlic Mustard, Common Burdock, and Riverbank Grape. Refer to the table below for details of the shade impact analysis for the herbaceous species observed.

Shade Impact Analysis of Herbaceous Species

Herbaceous Species	Shade Tolerance	Impacts
High Occurrence		
Riverbank Grape (*Vitis riparia*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Canada Thistle (*Cirsium arvense*)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time. This species is invasive and therefore not desirable in the vegetation community.

Goldenrod (*Solidago* sp.)	Shade Intolerant	Shade from proposed development may cause the displacement of species over time.
Moderate Occurrence		
Virginia Creeper (*Parthenocissus quinquefolia*)	Shade Tolerant	Negligible
Garlic Mustard (*Alliaria petiolate*)	Shade Tolerant	Negligible
Common Burdock (*Arctium minus*)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.
Low Occurrence		
Raspberry (*Rubus* sp.)	Intermediate Shade Tolerant	Proposed development will only create partial shade on species. Impacts will be minimal to none.

Overall, there will be minimal impacts on the tree, shrub, and herbaceous communities located on the subject property east of the proposed buildings and on the adjacent natural heritage vegetation community on the east side of Old Fourth Line (top of bank). It is unlikely that the shade created by the proposed development will create erosion on the slope, as only the top of bank will be partially shaded and the sloped areas will not experience an increase in shade.

5.0 Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Delmanor West Oak Inc. to complete a Tree Inventory and Preservation Plan & Shade Impact Analysis in support of a development application for the property located at 1280 Dundas Street West in Oakville. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 193 trees and 13 tree polygons on and within six metres of the subject property and within the right-of-way. The removal of 137 trees and nine tree polygons will be required to accommodate the proposed site plan. All other trees can be saved provided appropriate tree protection measures are installed prior to development.

The findings of the shade analysis indicate that there will be minimal impacts on the tree, shrub, and herbaceous communities located on the subject property east of the proposed buildings and on the adjacent natural heritage vegetation community on the east side of Old Fourth Line (top of bank).

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for the location of the required tree protection fencing, general Tree Protection Plan Notes, and tree preservation detail.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.

- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.
- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

Respectfully Submitted,
Kuntz Forestry Consulting Inc.

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LEGEND

Tree Inventory

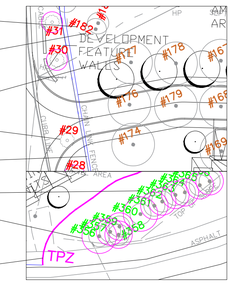
Refer to Table 1 and Table 2 of the report dated 24 August 2020. Trees greater than 10cm on or within six metres of the subject property and trees of all sizes within the City right-of-way were included in the inventory.

Tree Removals

The removal of 137 trees and nine tree polygons is required to accommodate the proposed development. Removals are indicated with RED or ORANGE labels.

Tree Preservation

Preservation of 56 trees and four tree polygons will be possible with appropriate tree protection measures. Trees identified for preservation are indicated with GREEN labels. Tree protection measures must be implemented prior to the construction phase (earth works). Minimum tree preservation zones and required tree preservation fencing is indicated in MAGENTA.



TREE PROTECTION PLAN NOTES

- It is the applicants' responsibility to discuss potential impacts to trees located near or wholly on adjacent properties or on shared boundary lines with their neighbours. Should such trees be injured to the point of instability or death the applicant may be held responsible through civil action. The applicant would also be required to replace such trees to the satisfaction of Urban Forestry.
- Tree protection barriers shall be installed to standards as detailed in this document and to the satisfaction of Urban Forestry.
- Tree protection barriers must be installed using plywood clad hoarding (minimum 19mm or ¾" thick) or an equivalent approved by Urban Forestry.
- Where required, signs as specified in Section 4, Tree Protection Signage must be attached to all sides of the barrier.
- Prior to the commencement of any site activity such as site alteration, demolition or construction, the tree protection measures specified on this plan must be installed to the satisfaction of Urban Forestry.
- Once all tree/site protection measures have been installed, Urban Forestry staff must be contacted to arrange for an inspection of the site and approval of the tree/site protection requirements. Photographs that clearly show the installed tree/site protection shall be provided for Urban Forestry review.
- Where changes to the location of the approved TPZ or sediment control or where temporary access to the TPZ is proposed, Urban Forestry must be contacted to obtain approval prior to alteration.
- Tree protection barriers must remain in place and in good condition during demolition, construction and/or site disturbance, including landscaping, and must not be altered, moved or removed until authorized by Urban Forestry.
- No construction activities including grade changes, surface treatments or excavation of any kind are permitted within the area identified on the Tree Protection Plan or Site Plan as a tree protection zone (TPZ). No root cutting is permitted. No storage of materials or fill is permitted within the TPZ. No movement or storage of vehicles or equipment is permitted within the TPZ. The area(s) identified as a TPZ must be protected and remain undisturbed at all times.
- All additional tree protection or preservation requirements, above and beyond the installation of tree protection barriers, must be undertaken or implemented as detailed in the Urban Forestry approved arborist report and/or the approved tree protection plan and to the satisfaction of Urban Forestry.
- If the minimum tree protection zone (TPZ) must be reduced to facilitate construction access, the tree protection barriers must be maintained at a lesser distance and the exposed portion of TPZ must be protected using a horizontal root protection method approved by Urban Forestry.
- Any roots or branches indicated on this plan which require pruning, as approved by Urban Forestry, must be pruned by an arborist. All pruning of tree roots and branches must be in accordance with good arboricultural practice. Roots that have received approval from Urban Forestry to be pruned must first be exposed using pneumatic (air) excavation, by hand digging or by a using low pressure hydraulic (water) excavation. The water pressure for hydraulic excavation must be low enough that root bark is not damaged or removed. This will allow a proper pruning cut and minimize tearing of the roots. The arborist retained to carry out crown or root pruning must contact Urban Forestry no less than three working days prior to conducting any specified work.
- The applicant/owner shall protect all by-law regulated trees in the area of consideration that have not been approved for removal throughout development works to the satisfaction of Urban Forestry.
- Convictions of offences respecting the regulations in the Street Tree By-law and Private Tree By-law are subject to fines. A person convicted of an offence under these by-laws is liable to a minimum fine of $500 and a maximum fine of $100,000 per tree, and /or a Special Fine of $100,000. The landowner may be ordered by the City to stop the contravening activity or ordered to undertake work to correct the contravention.
- Prior to site disturbance the owner must confirm that no migratory birds are making use of the site for nesting. The owner must ensure that the works are in conformance with the Migratory Bird Convention Act and that no migratory bird nests will be impacted by the proposed work no less than 48 hours prior to conducting any specified work.

No.	Issue/Revisions	Date	By
1	Report Submission	31 July '20	KD
2	Report Resubmission	24 Aug. '20	KD

Base Data: J.D. Barnes Ltd. (survey), ICKE Brochu Architects Inc. (site plan)

KUNTZ FORESTRY CONSULTING Inc.
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Client: Delmanor West Oak Inc.
4800 Dufferin Street
Toronto, ON

Property: 1280 Dundas Street West
Oakville, ON

Existing Conditions, Proposed Site Plan, Tree Inventory & Preservation Plan

Project	P2451	Figure	1
Date	24 August 2020		
Scale	1:500		

Tree Protection Zone
No grade change, storage of materials or equipment is permitted within this area.
This tree protection barrier must not be removed without the written authorization of the Town of Oakville.
Report any contraventions to
Contact Name _____ Tel No. _____
Unauthorized removal of the tree protection barrier or other contraventions may result in prosecution.

SCHEDULE 1
TREE PROTECTION BARRIER
OAKVILLE

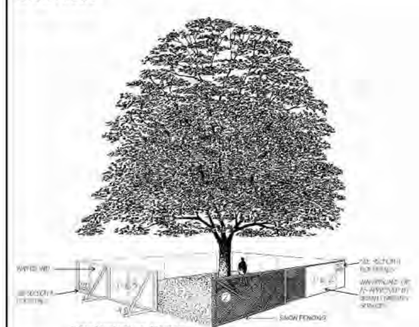

Table 1. Tree Inventory

Location: 1280 Dundas Street West, Oakville

Date: 27 July 2020 and 29 July 2020 Surveyors: KD

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	mTPZ	A. mTPZ	Oakville Tree No.	Comments	Ownership	Action
1	Black Locust	*Robinia pseudoacacia*	16	F	F	F-G	10	3	-	-	-	Asymmetrical crown (M), bow (L), stem wound (M) at 0.5 metres, stem wound (H) at base, deadwood (M), epicormic branching (L)	Private	Remove
2	Black Locust	*Robinia pseudoacacia*	10, 8	G	F	F		3	-	-	-	Co-dominant stems at 0.25 metres, bow (L), asymmetrical crown (H), suppressed	Private	Remove
3	Black Locust	*Robinia pseudoacacia*	12	G	G	G		3	2.4	-	-		City	Retain
4	Black Locust	*Robinia pseudoacacia*	5 - 11 (Ave: 9)	G	F	F-G		2.5	2.4	-	-	Multi-stem at base	City	Retain
P5	Refer to Table 2												Shared	Retain
6	Manitoba Maple	*Acer negundo*	12	P-F	P-F	P-F		5	-	-	-	Bow (H), asymmetrical crown H), epicormic branching (H)	Private	Remove
7	Yew species	*Taxus* sp.	12, 8	F-G	P-F	F		1.5	-	-	-	Co-dominant stems at base, asymmetrical crown (H), suppressed	Private	Remove
8	Eastern White Cedar	*Thuja occidentalis*	23	P-F	P-F	G		4	-	-	-	Stem wound (H) from base to 1.5 metres, lean (M)	Private	Remove
P9	Refer to Table 2												Private	Retain
10	Black Locust	*Robinia pseudoacacia*	37	F-G	F-G	F-G	5	5	3	-	-	Asymmetrical crown (M), deadwood (L)	Private	Remove
P11	Refer to Table 2												Shared	Retain
12	Apple species	*Malus sp.*	~50, ~40	P-F	P-F	P-F	15	4	-	-	-	Pruning wounds (H), epicormic branching (H), one stem previously failed	Private	Remove
P13	Refer to Table 2												Private	Remove
14	Eastern White Cedar	*Thuja occidentalis*	16	P	P	P-F		3	-	-	-	Stem wound (H) from base to 3 metres, fused to Tree 286, lean (M)	Private	Remove
15	Eastern White Cedar	*Thuja occidentalis*	~14	P-F	F-G	F		1.5	-	-	-	Pruning wounds (L)	Private	Remove
16	Eastern White Cedar	*Thuja occidentalis*	18, 15	P	P	P-F		4	-	-	-	Stem wounds (H), co-dominant stems at base, bow (H), top-down dieback on large stem	Private	Remove
P17	Refer to Table 2												Private	Remove
18	Manitoba Maple	*Acer negundo*	~12, ~12	F	F	F	15	2.5	-	-	-	Co-dominant stems at base	Private	Remove
19	Eastern White Cedar	*Thuja occidentalis*	5 - 12 (Ave: 10)	F-G	F	F-G		2	-	-	-	Multi-stem at base, included bark (M)	Private	Remove
20	Manitoba Maple	*Acer negundo*	~30	P-F	P-F	P-F		6	-	-	-	Lean (M), epicormic branching (H)	Private	Remove
21	White Ash	*Fraxinus americana*	10 - 25 (Ave: 15)	P-F	P-F	P-F	20	3	-	-	-	Coppice growth (H), multi-stem at base, deadwood (M), EAB present	Neighbouring	Remove (Condition)
22	Apple species	*Malus sp.*	~25	F	P-F	F		4	-	-	-	Bow (M), asymmetrical crown (H), epicormic branching (H)	Neighbouring	Remove
23	Sugar Maple	*Acer saccharum*	~30	P	F	F-G		5	-	-	-	Canker (H) at 1.5 metres, asymmetrical crown (H)	Neighbouring	Remove (Condition)
P24	Refer to Table 2												Private	Remove
25	Blue Spruce	*Picea pungens*	~10	G	G	G		1	2.4	-	-	Vine competition (M)	City	Remove
26	Manitoba Maple	*Acer negundo*	~7, ~4	F-G	F-G	G		1	1.8	-	-	Co-dominant stems at 0.25, included fence	City	Remove
27	Blue Spruce	*Picea pungens*	~10	G	G	G		1.5	2.4	-	-	Vine competition (L)	City	Remove
28	Blue Spruce	*Picea pungens*	~7	G	F-G	F-G		1	1.8	-	-	Asymmetrical crown (H), deadwood (H)	City	Remove
29	Red Oak	*Quercus rubra*	~6	F-G	F	F		1	-	-	-		City	Remove
30	Manitoba Maple		1 - 5	G	F	G		1	1.8	-	-	Multi-stem at base	City	Remove
31	Hazelnut species	*Corylus sp.*	4	F	F	P-F	50	0.5	1.8	-	-	Asymmetrical crown (H), deadwood (L)	City	Remove
32	Black Locust	*Robinia pseudoacacia*	~7, ~5	G	F	F-G		2	1.8	-	-	Co-dominant stems at 1 metre	City	Retain
P33	Refer to Table 2												City	Remove
P34	Refer to Table 2												City	Retain

137	Silver Maple	*Acer saccharinum*	48	P-F	F	P-F	15	3.5	-	-	-	Stem wound (H) at 1 metre, co-dominant stems at 3 metres, included bark (M), deadwood (L), epicormic branching (H), broken branches (M)	Private	Remove
138	Eastern White Cedar	*Thuja occidentalis*	~25	G	F-G	G		1.5	-	-	-	Co-dominant stems at 3 metres	Private	Remove
139	Silver Maple	*Acer saccharinum*	30	F	F	P	15	3.5	-	-	-	Top-down dieback, epicormic branching (M)	Private	Remove
142	Silver Maple	*Acer saccharinum*	36	F-G	F-G	P-F	15	3	-	-	-	Epicormic branching (M), top-down dieback	Private	Remove
143	Eastern White Cedar	*Thuja occidentalis*	~15	G	F-G	F-G		1.5	-	-	-	Suppressed, asymmetrical crown (L)	Private	Remove
144	Eastern White Cedar	*Thuja occidentalis*	~18	G	F-G	F0G		1.5	-	-	-	Suppressed, asymmetrical crown (L)	Private	Remove
145	Silver Maple	*Acer saccharinum*	~35	F-G	F	P-F	15	4.5	-	-	-	Co-dominant stems in crown, top-down dieback, epicormic branching (M)	Private	Remove
146	Silver Maple	*Acer saccharinum*	~35	F-G	F	P-F	15	4.5	-	-	-	Co-dominant stems at 3 metres, top-down dieback, broken branches (M), epicormic branching (M)	Private	Remove
147	Eastern White Cedar	*Thuja occidentalis*	~20, ~18	F-G	F	G		1.5	-	-	-	Co-dominant stems at base	Private	Remove
148	Eastern White Cedar	*Thuja occidentalis*	18	F	P-F	F		1.5	-	-	-	Lost leader	Private	Remove
149	Silver Maple	*Acer saccharinum*	45	F-G	F	F	10	6	-	-	-	Co-dominant stems at 5 metres, epicormic branching (M)	Private	Remove
150	Silver Maple	*Acer saccharinum*	~35	F	F	P	50	5	-	-	-	Top-down dieback, pruning wounds (M), epicormic branching (H)	Private	Remove (Condition)
151	Eastern White Cedar	*Thuja occidentalis*	21	F	F-G	P-F	10	2	-	-	-		Private	Remove
152	Eastern White Cedar	*Thuja occidentalis*	19.5	F	G	F		1.5	-	-	-		Private	Remove
153	Eastern White Cedar	*Thuja occidentalis*	23	G	F-G	G		1.5	-	-	-	Asymmetrical crown (M)	Private	Remove
154	Refer to Table 2												Private	Remove
155	Refer to Table 2													
156	Refer to Table 2													
157	Refer to Table 2													
158	Refer to Table 2													
159	Refer to Table 2													
160	Refer to Table 2													
161	Refer to Table 2													
162	Refer to Table 2												Private	Remove
163	Refer to Table 2													
164	Refer to Table 2													
165	Refer to Table 2													
166	Manitoba Maple	*Acer negundo*	~60	P-F	P-F	P		4				Epicormic branching (H), coppice growth (H), broken branches (H)	Private	Remove (Condition)
167	Apple species	*Malus sp.*	51	P	P-F	P-F		5	-	-	-	Epicormic branching (H), pruning wounds (H), trunk is hollow	Private	Remove (Condition)
168	Apple species	*Malus sp.*	39	P	P-F	P	15	5	-	-	-	Pruning wounds (H), cavities (H), epicormic branching (H), deadwood (L)	Private	Remove (Condition)
169	Apple species	*Malus sp.*	49	P-F	P-F	P	20	5	-	-	-	Pruning wounds (H), cavities (M), epicormic branching (H)	Private	Remove (Condition)
170	Apple species	*Malus sp.*	~50	P	P-F	P	20	6	-	-	-	Cavity (H) at 0.5 metres, deadwood (M), bow (M), epicormic branching (H)	Private	Remove (Condition)
171	Apple species	*Malus sp.*	39	P	P	P	20	4.5	-	-	-	Cavity (H) at base, deadwood (H), epicormic branching (H), pruning wound (H)	Private	Remove (Condition)
172	Apple species	*Malus sp.*	~35	P-F	P-F	P	50	4	-	-	-	Deadwood (H), epicormic branching (H)	Private	Remove (Condition)
173	Apple species	*Malus sp.*	39	P	P	P	20	5	-	-	-	Cavity (H) at 0.75 metres, epicormic branching (H), co-dominant stems at 2 metres, deadwood (H)	Private	Remove (Condition)
174	Apple species	*Malus sp.*	~40	P-F	P	P	10	4	-	-	-	Sweep (H), epicormic branching (H), cavity (M) at 0.5 metres	Private	Remove (Condition)
176	Apple species	*Malus sp.*	~40	P-F	P-F	P	25	4	-	-	-	Pruning wounds (H), epicormic branching (H), deadwood (H)	Private	Remove (Condition)

177	Apple species	*Malus sp.*	39, 34	P	P-F	P	20	4	-	-	-	Deadwood (H), pruning wounds (H), co-dominant stems at 0.5 metres, epicormic branching (H)	Private	Remove (Condition)
178	Apple species	*Malus sp.*	46, 32	P	P-F	P	20	4	-	-	-	Deadwood (H), epicormic branching (H), codominant stems at 1 metre	Private	Remove (Condition)
179	Apple species	*Malus sp.*	46	P	P-F	P		5	-	-	-	Cavity (M) at 1 metre, deadwood (H), epicormic branching (H)	Private	Remove (Condition)
180	Apple species	*Malus sp.*	34	P	P	P	40	4	-	-	-	Stem wound (H) at base, deadwood (H), epicormic branching (H)	Private	Remove (Condition)
181	Manitoba Maple	*Acer negundo*	~40, ~20, ~15	F	P-F	P-F	10	6	-	-	-	Multi-stem at base, deadwood (L), epicormic branching (H)	Private	Remove
182	Manitoba Maple	*Acer negundo*	10 - 20 (Ave: 15)	P-F	P-F	P-F		5	-	-	-	Multi-stem at base, sweep (H), epicormic branching (H)	Private	Remove
183	Manitoba Maple	*Acer negundo*	10 - 30 (Ave: 20)	P	P	P		4	-	-	-	Multi-stem at base, epicormic branching (H), stem wound (H) at 2 metres, deadwood (M)	Private	Remove
185	White Pine	*Pinus strobus*	~20	G	G	F-G		2	-	-	-		Private	Remove
186	Manitoba Maple	*Acer negundo*	~25	F	P-F	F		4	-	-	-	Sweep (H), co-dominant stems at 2 metres, epicormic branching (M)	Private	Remove
187	White Spruce	*Picea glauca*	~25	G	F-G	F-G	5	2.5	-	-	-		Private	Remove
188	Black Walnut	*Juglans nigra*	18	G	G	G		3	-	-	-	Asymmetrical crown (L)	Private	Remove
189	Cherry species	*Prunus sp.*	24	P	F-G	P		2.5	-	-	-	Epicormic branching (H), stem decay (H), co-dominant stems at 1.5 metres	Private	Remove (Condition)
190	Basswood	*Tilia americana*	20	P	F-G	F		2.5	-	-	-	Stem wound (H) from base to crown, epicormic branching (M)	Private	Remove (Condition)
191/192	Silver Maple	*Acer saccharinum*	29, 25, 17	F	F	P-F	5	5	-	-	-	Co-dominant stems at base and 0.75 metres, pruning wounds (M), epicormic branching (H), stem wound (H) on branch	Private	Remove
193	White Spruce	*Picea glauca*	22	G	G	G		3	-	-	-		Private	Remove
194	White Spruce	*Picea glauca*	~20	F	G	P	80	2.5	-	-	-	Almost dead	Private	Remove (Condition)
195	Silver Maple	*Acer saccharinum*	25 - 35 (Ave: 30)	F	F	F	10	8	-	-	-	Multi-stem at 1 metre, included bark (H), epicormic branching (M)	Private	Remove
196	Willow species	*Salix sp.*	57, 36	P	P	F		8	-	-	-	Co-dominant stems at 0.25 metres, broken branches (H), cavity (M) at base, epicormic branching (M)	Private	Remove (Condition)
197	Eastern White Cedar	*Thuja occidentalis*	20	F-G	F-G	G		2	-	-	-	Pruning wounds (L), sweep (L), asymmetrical crown (M)	Private	Remove
198	Eastern White Cedar	*Thuja occidentalis*	19	F-G	F	F		2	-	-	-	Included bark (M), co-dominant stems at 2 metres, sweep (M)	Private	Remove
199	Eastern White Cedar	*Thuja occidentalis*	17	F-G	F	F-G		2	-	-	-	Asymmetrical crown (H), sweep (L)	Private	Remove
200	Manitoba Maple	*Acer negundo*	~40, ~25	P-F	P-F	P	10	5	-	-	-	Coppice growth (H), epicormic branching (H), deadwood (L), asymmetrical crown (M), small stem dead, co-dominant stems at base	Private	Remove
201	Manitoba Maple	*Acer negundo*	23	F	F	P-F		6	-	-	-	Sweep (H), epicormic branching (H), broken branches (H), stem wound (H) in crown	Private	Remove
202	Manitoba Maple	*Acer negundo*	10 - 30 (Ave: 25)	P-F	P-F	P		4.5	-	-	-	Deadwood (H), eroding on slope, multi-stem at base, coppice growth (L), epicormic branching (H), lost leader on large stem	Private	Remove
203	Willow species	*Salix sp.*	~80	P-F	P-F	F		8	-	-	-	Asymmetrical crown (H), stem wound (H) in crown, epicormic branching (M)	Private	Remove
205	Willow species	*Salix sp.*	43, 35	P-F	F	P-F		7	-	-	-	Small stem dead, co-dominant stems at 0.75 metres, epicormic branching (H), stem wound (H) at 5 metres	Private	Remove
206	Black Locust	*Robinia pseudoacacia*	26, 16	F-G	F	F-G	10	3	-	-	-	Exposed roots (M), co-dominant stems at base and 1.75 metres, deadwood (M), broken branches (M), epicormic branching (L)	Private	Remove

207	Black Locust	*Robinia pseudoacacia*	20, 17, 14	F	F	F-G	5	3.5	-	-	-	Multi-stem at base, stem wound (H) at base on small stem, stem wound (H) at base on medium stem, deadwood (L), broken branches (L)	Private	Remove
208	Silver Maple	*Acer saccharinum*	30 - 45 (Ave: 40)	G	F	F	10	7	-	-	-	Multi-stem at 1 metre, deadwood (L), epicormic branching (M)	Private	Remove
209	Pear species	*Pyrus sp.*	~50	G	G	P-F	10	3	-	-	-	Epicormic branching (H), deadwood (L)	Private	Remove
210	Willow species	*Salix sp.*	5 - 120	P	P	P	10	10	-	-	-	Epicormic branching (H), large stem failing, pruning wounds (H), lean (M) --> hazard	Private	Remove (Condition)
211	Willow species	*Salix sp.*	~75, ~60	F	F	P-F		7	-	-	-	Epicormic branching (H), co-dominant stems at 0.5 metres	Private	Remove
212 / 213	Manitoba Maple	*Acer negundo*	~20, ~16	F	F	F		4	-	-	-	Co-dominant stems at base, epicormic branching (M), deadwood (L), bow (L)	Private	Remove
214	Manitoba Maple	*Acer negundo*	~20, ~12	F	P-F	F		4	-	-	-	Lean (M), co-dominant stems at 1 metre, epicormic branching (M), asymmetrical crown (H)	Private	Remove
216/219	Basswood	*Tilia americana*	~35, 26	P-F	P	P-F	15	5	-	-	-	Sweep (L) on large stem, sweep (H) on small stem, deadwood (M), epicormic branching (M)	Private	Remove (Condition)
215/217	Basswood	*Tilia americana*	33, 18	P-F	P-F	P-F	10	5	-	-	-	Bow (H), epicormic branching (H), asymmetrical crown (H), bark peeling, sweep (M), broken branches (M)	Private	Remove
218	Basswood	*Tilia americana*	26, 22, 10, 8	F	F	F		5	-	-	-	Multi-stem at base, included bark (M), included metal stake, epicormic branching (M)	Private	Remove
220	Manitoba Maple	*Acer negundo*	~35, ~15, ~10	P-F	P-F	P-F		6	-	-	-	Multi-stem at base, epicormic branching (H), coppice growth (M)	Private	Remove
221	Eastern White Cedar	*Thuja occidentalis*	29	P-F	F-G	G		2	-	-	-	Seam (H) from base to 1.5 metres, sweep (L), pruning wounds (M)	Private	Remove
222	Manitoba Maple	*Acer negundo*	10 - 25 (Ave: 15)	F	P-F	P		5	-	-	-	Epicormic branching (H), multi-stem at base	Private	Remove
223	Eastern Redcedar	*Juniperus virginiana*	30	F	F-G	G		2.5				Asymmetrical crown (L), stem wound (M) from base to 1.5 metres	Private	Remove
224	Horsechestnut	*Aesculus hippocastanum*	~55	P	F	P	20	5				Trunk is hollow, deadwood (H) -->hazard	Private	Remove (Condition)
225	-	-	-	-	-	-	-	-	-	-	-	Dead -->hazard	Private	Remove (Condition)
226	Black Locust	*Robinia pseudoacacia*	56	P-F	F	P	25	5		-	-	Deadwood (H), top-down dieback, vine competition (L), wildlife cavities (M)	Private	Remove (Condition)
227	Manitoba Maple	*Acer negundo*	~25, ~15	F	F	P-F	15	4	3	-	-	Deadwood (L), co-dominant stems at 0.75 metres, epicormic branching (H)	Shared	Retain
228	Manitoba Maple	*Acer negundo*	16	F	F	P-F		2	2.4	-	-	Coppice growth (H), epicormic branching (H), co-dominant stems at 1.75 metres	City	Retain
229	Refer to Table 2												Private	Retain
230	Refer to Table 2													
231	Refer to Table 2													
232	Refer to Table 2													
233	Yew species	*Taxus* sp.	29	F-G	F	P	30	3	2.4	-	-	Pruning wounds (M), stem wound (M) at 1.25 metres, deadwood (M)	Private	Remove (Condition)
234	Black Locust	*Robinia pseudoacacia*	~40, ~40	P-F	F	P-F	10	5	3.6	-	-	Brackets present, one stem dead, multi-stem at 1 metre, epicormic branching (M)	Private	Remove
235	Black Locust	*Robinia pseudoacacia*	~40	P-F	F-G	F	10	4	3	-	-	Brackets present, epicormic branching (M), vine competition (M), deadwood (L)	Private	Remove
236	Cherry species	*Prunus sp.*	33	G	F-G	F	5	3	-	-	-	Pruning wounds (M), epicormic branching (H), asymmetrical crown (L)	Private	Remove
237	Black Locust	*Robinia pseudoacacia*	34	G	G	F-G		4	3	-	-	Deadwood (L)	Private	Retain

238	Horsechestnut	*Aesculus hippocastanum*	50	F-G	F	F	10	7	3	-	-	Asymmetrical crown (M), deadwood (L), epicormic branching (M), seam (M) from base to 2 metres, co-dominant stems at 1.5 metres	Private	Retain
239/240	Black Locust	*Robinia pseudoacacia*	36, 30	F-G	F	F-G		6	3	-	-	Co-dominant stems at base, broken branches (M), bow (L) on small stem, deadwood (L)	Private	Retain
241	Black Locust	*Robinia pseudoacacia*	~25	F	F	F		4	2.4	-	-	Co-dominant stems at 1.5 metres, included bark (H), vine competition (M)	Private	Retain
242	Sugar Maple	*Acer saccharum*	~30	F-G	F	F		3	2.4	-	-	Asymmetrical crown (H), pruning wounds (H)	City	Retain
243	Eastern White Cedar	*Thuja occidentalis*	10 - 30 (Ave: 15)	F-G	F	G		2.5	3	-	-		Private	Retain
244	Eastern White Cedar	*Thuja occidentalis*	~15	P-F	P	P-F		3	2.4	-	-	Lean (H), vine competition (H)	Private	Remove (Condition)
245	Black Locust	*Robinia pseudoacacia*	25	F	F	F		4	2.4	-	-	Co-dominant stems at 1.5 metres, included bark (H), vine competition (M)	Private	Retain
246	White Pine	*Pinus strobus*	~18	F-G	F-G	F		2.5	2.4	-	-	Vine competition (H), crook (M) in crown	Private	Retain
247	Eastern White Cedar	*Thuja occidentalis*	~15	G	G	G		1.5	2.4	-	-		Private	Retain
248	Black Locust	*Robinia pseudoacacia*	~25	F-G	F-G	F		2.5	2.4	-	-	Vine competition (H)	Private	Retain
249	Black Walnut	*Juglans nigra*	~20	F-G	F	F-G		3.5	2.4	-	-	Vine competition (H), asymmetrical crown (H)	Private	Retain
250	Black Locust	*Robinia pseudoacacia*	18, 6	F	F	F		4	2.4	-	-	Small stem dead, asymmetrical crown (H), vine competition (H)	Private	Retain
251	Black Walnut	*Juglans nigra*	27	G	F-G	G		3.5	2.4	-	-	Asymmetrical crown (M), vine competition (L)	Private	Retain
252	Black Locust	*Robinia pseudoacacia*	~40	F-G	F	F	10	6	3	-	-	Included bark (M), vine competition (H), deadwood (M)	Private	Retain
253	-	-	-	-	-	-	-	-	-	-	-	Dead	Private	Remove (Condition)
254	Sugar Maple	*Acer saccharum*	49	F	F	F-G	10	7	3	-	-	Girdling roots (M), broken branches (M), cavities (L), asymmetrical crown (L)	City	Retain
255	English Oak	*Quercus robur*	26	G	G	F-G	5	4	2.4	-	-	Asymmetrical crown (L)	Private	Retain
256	Willow species	*Salix sp.*	~25	F	P-F	P-F		5	2.4	-	-	Epicormic branching (H), bow (M)	Shared	Retain
257	Willow species	*Salix sp.*	~50, ~30	P	P-F	P-F		6	-	-	-	Cavity (H) at base, stem wound (H) on small stem from base to 3 metres, epicormic branching (H), co-dominant stems at base	City	Remove (Condition)
258	Willow species	*Salix sp.*	~50, ~40	P-F	F	P		7	-	-	-	Sweep (M), epicormic branching (H), co-dominant stems at 0.5 metres	City	Remove (Condition)
259	White Pine	*Pinus strobus*	24	G	G	G		3	2.4	-	-		City	Retain
260	Black Locust	*Robinia pseudoacacia*	27	F-G	F	P-F	10	4	2.4	-	-		City	Retain
261	Black Locust	*Robinia pseudoacacia*	19, 16	F	F	F	10	3	2.4	-	-	Cavity (L) at union, co-dominant stems at 0.5 metres	City	Retain
262	Black Locust	*Robinia pseudoacacia*	~18	G	F-G	F-G		3	2.4	-	-	Asymmetrical crown (L)	City	Retain
263	Black Locust	*Robinia pseudoacacia*	26	P-F	P-F	F-G		4	2.4	-	-	Included bark (L), crack (M) at union, stem wound (H) at 3 metres from previous branch failure	City	Remove (Condition)
264	Black Locust	*Robinia pseudoacacia*	25	F-G	F	F-G		3.5	2.4	-	-	Included bark (M), broken branches (L)	City	Retain
265	Black Locust	*Robinia pseudoacacia*	~30	F-G	F	F-G		4	2.4	-	-	Co-dominant stems at 1.5 metres, broken branches (L)	City	Retain
266	White Pine	*Pinus strobus*	~25	G	G	G		3	2.4	-	-		City	Retain
267	Black Locust	*Robinia pseudoacacia*	23	F	F	F-G		4	2.4	-	-	Included bark (M), crack (M) at union, deadwood (L), broken branches (L)	City	Retain
268	Black Locust	*Robinia pseudoacacia*	29, 13, 12	F-G	F-G	F-G		5	3	-	-	Included bark (M), co-dominant stems at 1 and 1.25 metres	City	Retain
269	White Pine	*Pinus strobus*	~35	G	G	G		4	3	-	-		City	Retain
270	Black Locust	*Robinia pseudoacacia*	5 - 15 (Ave:12)	G	F-G	F-G		3.5	2.4	-	-	Multi-stem at 1.25 metres, asymmetrical crown (M)	City	Retain
271	Black Locust	*Robinia pseudoacacia*	26	F	F	F	10	4.5	2.4	-	-	Broken branches (M), deadwood (M)	City	Retain
272	White Pine	*Pinus strobus*	~35	G	G	G		3.5	3	-	-		City	Retain

273	Black Locust	*Robinia pseudoacacia*	~30	G	G	F-G		4	2.4	-	-		City	Retain
274	Norway Spruce	*Picea abies*	~30	G	G	G		3	2.4	-	-		City	Retain
275	White Oak	*Quercus alba*	15	G	G	G		2.5	2.4	-	-		City	Retain
276	Black Locust	*Robinia pseudoacacia*	~25	F-G	F-G	F-G		4	2.4	-	-	Asymmetrical crown (L)	City	Retain
277	Black Locust	*Robinia pseudoacacia*	21	F	F	F-G		3.5	2.4	-	-	Multi-stem at 1.25 metres, asymmetrical crown (M)	City	Retain
278	Norway Maple	*Acer platanoides*	23	G	G	G		4.5	-	-	-		Private	Remove
279	Norway Spruce	*Picea abies*	~18	G	F-G	G		2.5	-	-	-	Asymmetrical crown (M)	Private	Remove
280	Norway Spruce	*Picea abies*	~15	G	F-G	G		2.5	-	-	-	Asymmetrical crown (M)	Private	Remove
281	Norway Maple	*Acer platanoides*	19, 8	F-G	F	F-G		5	-	-	-	Co-dominant stems at base, dead stem of Tree 283 leaning on trunk	Private	Remove
282	Manitoba Maple	*Acer negundo*	31	F	F	P-F		3.5	-	-	-	Epicormic branching (H), lean (L), co-dominant stems at 1.5 metres	Private	Remove
283	Willow species	*Salix sp.*	~90	P	P	P	30	7	-	-	-	Deadwood (H), one stem dead, one stem previously failed, co-dominant stems at 1.5 metres, epicormic branching (H), cavity (H) at base from previous stem failure, top-down dieback -->hazard	Private	Remove (Condition)
284	Eastern White Cedar	*Thuja occidentalis*	19.5	P-F	P-F	F		2.5	-	-	-	Sweep (M), seam (H) from base to 1.5 metres, asymmetrical crown (H)	Private	Remove
285	Eastern White Cedar	*Thuja occidentalis*	~28	P-F	P-F	P-F		2	-	-	-	Seam (H) from base to 5 metres, lost leader, lean (M)	Private	Remove
286	Manitoba Maple	*Acer negundo*	26, ~14, ~12, ~8	P-F	P-F	F		4	-	-	-	Multi-stem at base, fused stems, stem wound (H) at base, bow (M), fused at base with Tree 14	Private	Remove
287	Eastern White Cedar	*Thuja occidentalis*	~25	F	F	F		2	-	-	-	Stem wound (M) from 0.5 metres to 1.5 metres, sweep (L), asymmetrical crown (H)	Private	Remove
288	Black Locust	*Robinia pseudoacacia*	34	G	F-G	F-G		4	-	-	-	Pruning wounds (L), epicormic branching (M), deadwood (L)	Private	Remove
289	Black Locust	*Robinia pseudoacacia*	36	F-G	F-G	F-G		4	-	-	-	Included bark (M), deadwood (L)	Private	Remove
290	Japanese Walnut	*Juglans ailantifolia*	37	P-F	F	P	10	5				Epicormic branching (H), sweep (M), deadwood (L), stem wound (H) at base from previous stem failure	Private	Remove (Condition)
291	Apple species	*Malus sp.*	44	F	P-F	F		3.5	-	-	-	Pruning wounds (M), crook (H), epicormic branching (M)	Private	Remove
292	Black Locust	*Robinia pseudoacacia*	23	G	F-G	G		4	-	-	-	Broken branches (L), asymmetrical crown (L)	Private	Remove
293	Japanese Walnut	*Juglans ailantifolia*	31	P-F	P-F	P	10	3				Epicormic branching (H), coppice growth (H), deadwood (L), lean (L), cavity (H) at 5 metres	Private	Remove (Condition)
294	Black Walnut	*Juglans nigra*	56	G	G	F-G		8	-	-	-	Epicormic branching (M), pruning wounds (L), asymmetrical crown (L)	Private	Remove
295	Black Walnut	*Juglans nigra*	46	G	F-G	F-G		8	-	-	-	Asymmetrical crown (L), co-dominant stems at 2 metres, epicormic branching (L), pruning wounds (L), broken branches (L)	Private	Remove
296	Black Walnut	*Juglans nigra*	40	G	F	F		8	-	-	-	Co-dominant stems at 3 metres, pruning wounds (M), asymmetrical crown (M), deadwood (L), epicormic branching (M)	Private	Remove
297	Bur Oak	*Quercus macrocarpa*	77	G	G	P-F	5	8	-	-	-	Epicormic branching (H), deadwood (L)	Private	Remove
298	Black Locust	*Robinia pseudoacacia*	27	G	F-G	G		2.5	-	-	-	Pruning wounds (L), broken branches (L)	Private	Remove
299	White Ash	*Fraxinus americana*	~40	P	G	P	90	4	-	-	-	EAB present	Private	Remove (Condition)
301	-	-	-	-	-	-	-	-	-	-	-	Dead	Private	Remove (Condition)
305	Black Locust	*Robinia pseudoacacia*	17	F	F	F-G		2.5	-	-	-	Sweep (M), pruning wounds (L), stem wound (M) at base	Private	Remove
306	Black Locust	*Robinia pseudoacacia*	27	G	F-G	G		3	-	-	-	Co-dominant stems at 1.5 metres	Private	Remove
307	Black Locust	*Robinia pseudoacacia*	43	F-G	F	G		4	-	-	-	Pruning wounds (M), co-dominant stems at 1.5 metres, included bark (L)	Private	Remove

308	Black Locust	*Robinia pseudoacacia*	23	G	F-G	G		3.5	-	-	-	Pruning wounds (L), co-dominant stems at 2 metres	Private	Remove
309	Black Locust	*Robinia pseudoacacia*	24	G	F	G		3	-	-	-	Co-dominant stems at 1.5 metres, stem wound (H) in crown, pruning wounds (L), broken branches (L)	Private	Remove
310	Black Locust	*Robinia pseudoacacia*	24	F-G	F	G		3.5	-	-	-	Pruning wounds (M), multi-stem at 1.75 metres, asymmetrical crown (L)	Private	Remove
311	Apple species	*Malus sp.*	~50	P	F	P-F	30	3.5	-	-	-	Epicormic branching (H), deadwood (H), cavity (H) at 0.5 metres	Private	Remove (Condition)
312	Black Locust	*Robinia pseudoacacia*	29	F-G	F-G	F-G		3.5	-	-	-	Included bark (M), deadwood (L)	Private	Remove
313	Refer to Table 2												Private	Remove
314	Refer to Table 2													
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341	Refer to Table 2													
342	Norway Maple	*Acer platanoides*	37	G	F-G	G		4.5	-	-	-		Private	Remove
343	Sugar Maple	*Acer saccharum*	29	F-G	F-G	G		4.5	-	-	-	Co-dominant at 3 metres	Private	Remove
344	Refer to Table 2												Private	Remove
345	Refer to Table 2													
346	Refer to Table 2													
347	Refer to Table 2												Private	Remove
348	Refer to Table 2													
349	Refer to Table 2													
350	Refer to Table 2													
351	Black Walnut	*Juglans nigra*	19.5	G	F	G		3.5	-	-	-	Co-dominant stems at 1.75 metres	Private	Remove
352	Red Oak	*Quercus rubra*	52	F-G	F	F-G		7	3.6	-	-	Sweep (L), asymmetrical crown (M)	Neighbouring	Retain
353	Black Cherry	*Prunus serotina*	~50, ~30	P	P	P			-	-	-	Dead --> hazard	Neighbouring	Remove (Condition)
354	Black Walnut	*Juglans nigra*	25	P-F	F-G	F	10	4	2.4	-	-	Stem wound (H) at base, filled piled at base, deadwood (L)	Neighbouring	Retain
355	Black Walnut	*Juglans nigra*	26	F	F	F		4.5	2.4	-	-	Co-dominant stems at 1.75 metres, asymmetrical crown (M), fill piled at base, epicormic branching (M), chlorosis (L), stem wound (L) at base	Neighbouring	Retain

356	White Spruce	*Picea glauca*	36	G	F-G	F-G		3	3	-	-	Pruning wounds (M), asymmetrical crown (M)	Neighbouring	Retain
357	White Spruce	*Picea glauca*	26	G	F-G	G		3.5	2.4	-	-	Asymmetrical crown (M)	Neighbouring	Retain
358	White Spruce	*Picea glauca*	24	G	F-G	G		3.5	2.4	-	-	Asymmetrical crown (M), pruning wounds (L)	Neighbouring	Retain
359	White Spruce	*Picea glauca*	29	G	G	G		3.5	2.4	-	-	Asymmetrical crown (L)	Neighbouring	Retain
360	White Spruce	*Picea glauca*	~35	G	G	G		3.5	3	-	-	Asymmetrical crown (L)	Neighbouring	Retain
361	White Spruce	*Picea glauca*	~30	G	G	G		3.5	2.4	-	-		Neighbouring	Retain
362	White Spruce	*Picea glauca*	~30	G	F-G	F-G		3.5	2.4	-	-	Asymmetrical crown (M)	Neighbouring	Retain
363	White Spruce	*Picea glauca*	~25	G	F-G	G		3.5	2.4	-	-	Asymmetrical crown (M)	Neighbouring	Retain
364	White Spruce	*Picea glauca*	~28	G	F-G	G		3.5	2.4	-	-	Asymmetrical crown (M)	Neighbouring	Retain
365	White Spruce	*Picea glauca*	~25	G	F-G	G		3.5	2.4	-	-	Asymmetrical crown (M)	Neighbouring	Retain
366	White Spruce	*Picea glauca*	~22	G	G	G		2.5	2.4	-	-		Neighbouring	Retain
367	Pear species	*Pyrus sp.*	37	F	F-G	F		4	3	-	-	Cavity (L) at base, cavity (L) at 1 metre, deadwood (L), asymmetrical crown (L), epicormic branching (M)	Neighbouring	Retain
368	Refer to Table 2												Private	Remove
369	Refer to Table 2													
370	Refer to Table 2													
371	Refer to Table 2													
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395	White Spruce	*Picea glauca*	24	F	P-F	F-G		4	-	-	-	Topped at 3 metres, crook (H) from topping cut	Private	Remove

Codes		
DBH	Diameter at Breast Height	*(cm)*
TI	Trunk Integrity	*(G, F, P)*
CS	Crown Structure	*(G, F, P)*
CV	Crown Vigor	*(G, F, P)*
CDB	Crown Die Back	*(%)*
DL	Dripline	*(m)*
mTPZ	minimum Tree Protection Zone	*TPZ (m) based on Town of Oakville's Tree Protection During Construction (Prcedure EN-TRE-001-001) from base of tree*
A. mTPZ	Actual minimum Tree Protection Zone	*Actual TPZ (m) achievable during construction from base of tree*
~ = estimate; (L) = light; (M) = moderate; (H) = heavy		

Table 2. Stand Tally Analysis of Tree Polygons

Trees 154 - 161

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
White Spruce (*Picea glauca*)	4	1	2	0	0	0	0	0	6	1
Scots Pine (*Pinus sylvestris*)	1	0	0	0	0	0	0	0	1	0
Total Number of Trees	5	1	2	0	0	0	0	0	7	1

Trees 162 - 165

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Manitoba Maple (*Acer negundo*)	1	2	0	0	0	0	0	0	1	2
White Spruce (*Picea glauca*)	1	3	1	0	0	0	0	0	2	3
Black Walnut (*Juglans nigra*)	0	1	0	0	0	0	0	0	0	1
Bur Oak (*Quercus macrocarpa*)	0	0	1	0	0	0	0	0	1	0
Total Number of Trees	2	6	2	0	0	0	0	0	4	6

Trees 229 - 232

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Black Locust (*Robinia pseudoacacia*)	6	0	0	0	0	0	0	0	6	0
Total Number of Trees	6	0	0	0	0	0	0	0	6	0

Trees 313 - 340 and 344 - 346

Tree Size Class >	Polewood (5 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
White Ash (*Fraxinus americana*)	0	0	0	0	0	1	0	1	0	2
Black Walnut (*Juglans nigra*)	0	0	1	0	0	0	0	0	1	0
Manitoba Maple (*Acer negundo*)	5	5	0	2	0	2	0	0	5	9
Black Locust (*Robinia pseudoacacia*)	10	0	4	0	0	0	0	0	14	0
White Pine (*Pinus strobus*)	10	1	2	0	0	0	0	0	12	1
Cherry species (*Prunus* sp.)	1	1	1	0	1	1	0	0	3	2
Apple species (*Malus* sp.)	0	0	0	2	0	1	0	0	0	3
Willow species (*Salix* sp.)	0	0	0	0	0	0	1	2	1	2
Pear species (*Pyrus* sp.)	0	0	1	0	0	0	0	0	1	0
Total Number of Trees	26	7	9	4	1	5	1	3	37	19

Trees 347 - 350

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Manitoba Maple (*Acer negundo*)	2	3	0	1	0	0	0	0	2	4
Total Number of Trees	2	3	0	1	0	0	0	0	2	4

Trees 368 - 394

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
White Pine (*Pinus strobus*)	3	0	9	0	7	1	0	0	19	1
Austrian Pine (*Pinus nigra*)	1	0	3	0	0	0	0	0	4	0
Sugar Maple (*Acer saccharum*)	1	0	2	0	0	0	0	0	3	0
Total Number of Trees	5	0	14	0	7	1	0	0	26	1

P5

Tree Size Class >	Polewood (1 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Black Locust (*Robinia pseudoacacia*)	7	2	0	0	0	0	0	0	7	2
Manitoba Maple (*Acer negundo*)	1	0	0	0	0	0	0	0	1	0
White Ash (*Fraxinus americana*)	0	2	0	0	0	0	0	0	0	2
Black Walnut (*Juglans nigra*)	0	1	0	0	0	0	0	0	0	1
Total Number of Trees	8	5	0	0	0	0	0	0	8	5

P9

Tree Size Class >	Polewood (1 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Black Locust (*Robinia pseudoacacia*)	1	2	0	0	0	0	0	0	1	2
Eastern White Cedar (*Thuja occidentalis*)	4	0	0	0	0	0	0	0	4	0
Total Number of Trees	5	2	0	0	0	0	0	0	5	2

P11

Tree Size Class >	Polewood (1 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Eastern White Cedar (*Thuja occidentalis*)	45	1	0	0	0	0	0	0	45	1
Manitoba Maple (*Acer negundo*)	1	0	0	0	0	0	0	0	1	0
White Ash (*Fraxinus americana*)	4	12	0	0	0	0	0	0	4	12
White Pine (*Pinus strobus*)	3	0	0	0	0	0	0	0	3	0
Black Locust (*Robinia pseudoacacia*)	8	0	0	0	0	0	0	0	8	0
Sugar Maple (*Acer saccharum*)	1	0	0	0	0	0	0	0	1	0
Black Walnut (*Juglans nigra*)	2	0	0	0	0	0	0	0	2	0
White Oak (*Quercus alba*)	0	1	0	0	0	0	0	0	0	1
Cherry species (*Prunus* sp.)	3	0	0	0	0	0	0	0	3	0
White Elm (*Ulmus americana*)	0	2	0	0	0	0	0	0	0	2
Apple species (*Malus* sp.)	1	0	0	0	0	0	0	0	1	0
Willow species (*Salix* sp.)	0	0	0	0	0	1	0	0	0	1
Total Number of Trees	68	16	0	0	0	1	0	0	68	17

P13

Tree Size Class >	Polewood (1 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Eastern White Cedar (*Thuja occidentalis*)	10	2	0	0	0	0	0	0	10	2
Total Number of Trees	10	2	0	0	0	0	0	0	10	2

P17

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Eastern White Cedar (*Thuja occidentalis*)	1	0	0	0	0	0	0	0	1	0
White Spruce (*Picea glauca*)	1	0	0	0	0	0	0	0	1	0
Black Walnut (*Juglans nigra*)	1	0	0	0	0	0	0	0	1	0
Total Number of Trees	3	0	0	0	0	0	0	0	3	0

P24

Tree Size Class >	Polewood (10 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Amur Maple (*Acer ginnala*)	5	3	0	0	0	0	0	0	5	3
Total Number of Trees	5	3	0	0	0	0	0	0	5	3

P33

Tree Size Class >	Polewood (1 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Black Locust (*Robinia pseudoacacia*)	16	0	0	0	0	0	0	0	16	0
Blue Spruce (*Picea pungens*)	1	0	0	0	0	0	0	0	1	0
Total Number of Trees	17	0	0	0	0	0	0	0	17	0

P34

Tree Size Class >	Polewood (1 - 24 cm DBH)		Small (26 - 36 cm DBH)		Medium (38 - 48 cm)		Large (50 cm +)		Total All Sizes	
Species	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*	*AGS*	*UGS*
Black Locust (*Robinia pseudoacacia*)	9	0	0	0	0	0	0	0	9	0
Silk Lilac (*Syringa reticulata*)	3	0	0	0	0	0	0	0	3	0
Blue Spruce (*Picea pungens*)	3	0	0	0	0	0	0	0	3	0
Manitoba Maple (*Acer negundo*)	3	2	0	0	0	0	0	0	3	2
Black Walnut (*Juglans nigra*)	5	0	0	0	0	0	0	0	5	0
Bur Oak (*Quercus macrocarpa*)	1	0	0	0	0	0	0	0	1	0
White Elm (*Ulmus americana*)	0	1	0	0	0	0	0	0	0	1
White Ash (*Fraxinus americana*)	0	1	0	0	0	0	0	0	0	1
Total Number of Trees	24	4	0	0	0	0	0	0	24	4

Table 3. Tree Valuation of Town-Owned Trees

1280 Dundas Street West, Oakville				*Appraised Trunk Area (cm^2)*	*Unit Tree Cost (RPAC)*	*Basic Tree Cost ($)*	Depreciation			*Appraised Tree Value*	*Minimum Value Per Tree ($)*	Quantity of Trees	*Final Appraised Tree Value*
Tree	**Common Name**	**DBH**	**OC**				*Condition Rating (%)*	*Functional Limitation Rating (%)*	*External Limitation Rating (%)*				
25	Blue Spruce	10	G	79	6.51	511.30	0.9	0.8	1	$ 368.13	$ 744.00	1	$ 744.00
26	Manitoba Maple	8	F-G	50	6.51	327.23	0.75	0.8	1	$ 196.34	$ 744.00	1	$ 744.00
27	Blue Spruce	10	G	79	6.51	511.30	0.9	0.8	1	$ 368.13	$ 744.00	1	$ 744.00
28	Blue Spruce	7	F-G	38	6.51	250.53	0.75	0.8	1	$ 150.32	$ 744.00	1	$ 744.00
29	Red Oak	6	F	28	6.51	184.07	0.5	0.8	1	$ 73.63	$ 744.00	1	$ 744.00
30	Manitoba Maple	7	F	38	6.51	250.53	0.5	0.8	1	$ 100.21	$ 744.00	1	$ 744.00
31	Hazelnut species	4	P-F	13	6.51	81.81	0.25	0.8	1	$ 16.36	$ 744.00	1	$ 744.00
P33	Black Locust	7	G	38	6.51	250.53	0.9	0.8	1	$ 180.39	$ 744.00	16	$ 11,904.00
	Blue Spruce	7	G	38	6.51	250.53	0.9	0.8	1	$ 180.39	$ 744.00	1	$ 744.00
													$ 17,856.00

APPENDIX D
Significant Wildlife Habitat Assessment

Environmental Impact Study
Delmanor West Oak Inc.
SLR Project No.: 209.40574.0000

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
Seasonal Concentration Areas of Animals					
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale**: Habitat important to migrating waterfowl	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from meltwater or run-off within these Ecosites. Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lake St. Clair, Grand Bend and Point Pelee areas may be important to Tundra Swans.	•Fields with sheet water during Spring (mid-March to May) •Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl •Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available <u>Information Sources</u> •Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. •Reports and other information available from Conservation Authorities •Sites documented through waterfowl planning processes (eg. EHJV implementation plan) •Field Naturalist Clubs •Ducks Unlimited Canada •Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •Any mixed species aggregations of 100 or more individuals required •The flooded field ecosite habitat plus a 100-300m radius, dependent on local site conditions and adjacent land use is the significant wildlife habitat •Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates) •SWH MIST Index #7 provides development effects and mitigation measures	Habitat criteria not met. No large fields capable of supporting sheet flow or agricultural areas which provide for stopover areas.
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale**: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the ecodistrict.	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan Canada Goose Cackling Goose Snow Goose Northern Shoveler Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	•Ponds, marshes, lakes, bays, coastal inlets and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify •These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). <u>Information Sources</u> •Environment Canada •Naturalist clubs often are aware of staging/stopover areas. •OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. •Sites documented through waterfowl planning processes (e.g., EHJV implementation plan) •Ducks Unlimited projects •Element occurrence specification by Nature Serve: http://www.natureserve.org •Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of: •Aggregations of 100 or more of listed species for 7 days, results in >700 waterfowl use days •Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH •The combined area of the ELC ecosites and a 100m radius area is the SWH •Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. •Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). •SWH MIST Index #7 provides development effects and mitigation measures	Habitat criteria not met. No large ponds or reservoirs capable of supporting shelter areas as stopovers.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
	Redhead				
Shorebird Migratory Stopover Area **Rationale**: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	•Shorelines of lakes, rivers and wetlands, including beach area, 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 midJune and early July to October •Sewage treatment ponds and storm water ponds do not qualify as SWH. <u>Information Sources</u> •Western hemisphere shorebird reserve network •Canadian Wildlife Service (CWS) Ontario Shorebird Survey •Bird Studies Canada •Ontario Nature •Local birders and naturalist clubs •Natural Heritage Information Centre (NHIC) Shorebird Migratory Concentration Area	Studies confirming: •Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) •Whimbrel stop briefly (100 Whimbrel used for 3 years or more is significant. •The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area •Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #8 provides development effects and mitigation measures	Habitat criteria not met. No lakes shorelines or coastal areas
Raptor Wintering Area **Rationale**: Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM, CUT, CUS, CUW. Bald Eagle: Forest Community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	•The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors •Raptor wintering (hawk/owl) sites need to be >20 ha with a combination of forest and upland •Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands •Field area of the habitat is to be wind swept with limited snow depth or accumulation. •Eagle sites have open water and large trees and snags available for roosting <u>Information Sources</u> •OMNRF Ecologist or Biologist •Naturalist clubs •Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area •Data from Bird Studies Canada •Results of Christmas Bird Counts •Reports and other information available from Conservation Authorities	Studies confirming: •Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) •Whimbrel stop briefly (100 Whimbrel used for 3 years or more is significant. •The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area •Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #8 provides development effects and mitigation measures. Studies confirm the sue of these habitats by: •One or more Short-eared Owls or; one of more Bald Eagles or; at least 10 individuals and two of the listed hawk/owl species	Habitat criteria not met. While Redtail Hawk was observed, woodland and fields do not extend > than 20 ha. It is recognized that the woodland and Valleyland are likely to provided refuge for Hawks and Owls in the winter this habitat is not uncommon in the Halton Region and does not meet criteria threshold.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
				•To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. •The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area •Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #10 and #11 provides development effects and mitigation measures.	
Bat Hibernacula **Rationale**: Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR3 CCA1 CCA2 (Note: buildings are not considered SWH)	•Hibernacula may be found in caves, mine shafts, underground foundations and Karsts •Active mine sites should not be considered as SWH •The locations of Bat Hibernacula are relatively poorly known. Information Sources •OMNRF for possible locations and contact for local experts •Natural Heritage Information Centre (NHIC) Bat Hibernaculum •Ministry of Northern Development and Mines for location of mine shafts. •Clubs that explore caves (eg. Sierra Club) •University Biology Departments with bat experts.	•All sites with confirmed hibernating bats are SWH •The area includes 200 m radius around the entrance of the hibernaculum for most development types and 1000 m for wind farms •Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #1 provides development effects and mitigation measures.	Habitat criteria not met. No known Karst, escarpment areas or rock features (caves).
Bat Maternity Colonies **Rationale**: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD, FOM, SWD, SWM	•Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). •Maternity roosts are not found in caves and mines in Ontario •Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees •Female bats prefer wildlife trees (snags) in early stages if 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 <u>Information Sources</u> •OMNRF for possible locations and contact for local experts •University Biology Departments with bat experts.	•Maternity colonies with confirmed use by: o>10 Big Brown Bats o>5 adult female Silver-haired Bats •The area of habitat includes the entire woodland or a forest stand ELC Ecosite or an Eco-element containing the maternity colonies •Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #12 provides the development effects and mitigation measures.	**Candidate** Woodlands within the valleyland will be protected and any tree removals required will be completed during the appropriate timing windows.
Turtle Wintering Areas **Rationale**: Generally sites are the only known sites in the area. Sites with the	Special Concern: Midland Painted Turtle Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles: SW, MA, OA and SA; FEO and BOO. Northern Map Turtle: Open water areas such as deeper rivers or streams	•For most turtles, wintering areas are in the same general areas as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. •Overwintering sites are permanent water bodies, large wetlands and bots or fens with adequate dissolved oxygen. •Manmade ponds such as sewage lagoons or storm water ponds should not be considered SWH.	•Presence of five overwintering Midland Painted Turtles is significant. •One or more Northern Map Turtle or Snapping Turtle overwintering within a wetland is significant. •The mapped ELC ecosite area with the overwintering turtles is the SWH. If the hibernation	Habitat criteria not met. The onsite pond is small with limited depth and organics, reduced oxygenated waters and likely freezes to the bottom in severe winters. No

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
highest number of individuals are most significant		and lakes with current can also be used as overwintering habitat.	<u>Information Sources</u> •EIA/EIS studies carried out by conservation authorities. •Field naturalists clubs. •OMNRF ecologist or biologist •NHIC	site is within a stream or river, the deep-water pool where the turtles are overwintering is the SWH. •Overwintering areas may be identified by searching for congregations (basking areas) of turtles on warm, sunny days during the fall (September to October) or spring (March to May). Congregation of turtles is more common where wintering areas are limited and therefore significant. •SWH MIST Index #28 provides development effects and mitigation measures for turtle wintering habitat	turtles were observed in the pond or anywhere on site during numerous site visits conducted in early mornings, mid-day and evenings in the spring and summer of 2018 or during supplemental site visits in fall 2021.
Reptile Hibernaculum **Rationale**: Generally sites are the only known sites in the area. Sites with the highest number of individuals are	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator	•For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. •Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line •Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. <u>Information Sources</u> •In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). •Reports and other information available from Conservation Authorities. •Field Naturalist Clubs •University herpetologists •Natural Heritage Information Centre (NHIC)	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 (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) •NOTE: If there are Special Concern Species present, then site is SWH •NOTE: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. •The feature in which the hibernacula is located plus a 30 m radius area is the SWH •SWH MIS Index #13 provides development effects and mitigation measures for snake hibernacula	Habitat is not present. No features assessed on site occur with potential to penetrate deep below the frost line. Hibernation sites may occur on adjacent lands associated with the valleyland system and or structures located off site.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale**: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1	•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. <u>Information Sources</u> •Reports and other information available from Conservation Authorities •Ontario Breeding Bird Atlas	Studies confirming: •Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. •A colony identified as SWH will include a 50m radius habitat area from the peripheral nests •Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •SWH MIST Index #4 provides development effects and mitigation measures.	Habitat criteria not met. No exposed banks observed on site or immediately adjacent.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
populations. All swallow population are declining in Ontario.		CLT1	•Bird Studies Canada NatureCounts http://www.birdscanada.org/birdmon •Field Naturalist Clubs		
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale**: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	•Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. •Most nests in trees are 11 to 15 m from ground, near the top of the tree. <u>Information Sources</u> •Ontario Breeding Bird Atlas colonial nest records. •Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). •Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony •Aerial photographs can help identify large heronries. •Reports and other information available from Conservation Authorities. •MNRF District Offices •Field Naturalist Clubs	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	Habitat criteria not met. No stick nests observed or evidence of nest structures by herons in proximity to the Site.
Colonially -Nesting Bird Breeding Habitat (Ground) **Rationale**: Colonies are important to local bird population, typically sites are only known colony in area and are used annually	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6 MAS1 – 3 CUM CUT CUS	•Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. •Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources •Ontario Breeding Bird Atlas, rare/colonial species records. •Canadian Wildlife Service •Reports and other information available from Conservation Authorities. •Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area •MNRF District Offices •Field Naturalist Clubs	Studies confirming: •Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern •Presence of 5 or more pairs for Brewer's Blackbird •Any active nesting colony of one or more Little Gull, and Great Blackbacked Gull is significant •The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island	Habitat criteria not met. No exposed rocks or island peninsulas.
Migratory Butterfly Stopover Areas **Rationale**: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that	Painted Lady Red Admiral Special Concern: Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: FIELD: CUM, CUT, CUS FOREST: FOC, FOD, FOM, CUP	•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 Erie or Lake Ontario •The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south •The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat	Studies confirm: •The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days the site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur •Observational studies are to be completed and	Habitat criteria not met. Habitat criteria not met. Site not within 5 km of Lake Ontario or meet size criteria. Subject property is manicured.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
migrate south for the winter.		Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	•Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes <u>Information Sources</u> •MNRF District Offices •Natural Heritage Information Centre (NHIC) •Agriculture Canada in Ottawa may have list of butterfly experts •Field Naturalist Clubs •Toronto Entomologists Association	need to be done frequently during the migration period to estimate MUD. •MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. •SWH MIST Index #16 provides development effects and mitigation measures.	
Landbird Migratory Stopover Areas **Rationale**: Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1 All migrant raptor species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	•Woodlots >5 ha in size and within 5 km of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5 ha can be considered for this habitat •If multiple woodlands are located along the shoreline those woodlands <2 km from Lake Erie and Lake Ontario are more significant •Sites have a variety of habitats: forest, grassland and wetland complexes •The largest sites are more significant •Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and within 5 km of Lake Erie and Lake Ontario are Candidate SWH <u>Information Sources</u> •Bird Studies Canada •Ontario Nature •Local birders and field naturalist clubs •Ontario Important Bird Areas (IBA) Program	Studies confirm: •Use of the habitat by >200 birds/day and with >35 species and with at least 10 bird species recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant •Studies should be completed during spring (Mar.-May) and fall (Aug.- Oct.) migration using standardized assessment techniques. Evaluation to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #9 provides development effects and mitigation measures	Habitat criteria not met. Valleylands and woodland are not part of the typical migration path within 5 km of the Great Lakes.
Deer Winter Congregation Areas **Rationale**: Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce	White-tailed Deer	All forested Ecosites with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD Conifer plantations much smaller than 50 ha may also be used.	•Woodlots >100 ha in size or if large woodlots are rare in a planning area, woodlots >50 ha •Deer movement during winter in the southern areas of 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 1,500 ha are known to be used annually by densities of deer that range from 0.1-0.5 deer/ha •Woodlots with high densities of deer due to artificial feeding are not significant. <u>Information Sources</u> •MNRF District Offices •LIO/NRVIS	Studies confirm: •Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF •Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF •Studies should be complete4d during winter (Jan./Feb.) when >20 cm of snow is on the ground using aerial survey techniques, ground road surveys, or a pellet count deer survey •SWH MIST Index #2 provides development effects and mitigation measures	Not mapped by MNRF.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
or avoid the impacts of winter conditions					
Rare Vegetation Communities					
Cliffs and Talus Slopes **Rationale**: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS CLT	A Cliff is vertical to near vertical bedrock >3 m 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 <u>Information Sources</u> •The Niagara Escarpment Commission has detailed information on location of these habitats •OMNRF Districts •Natural Heritage Information Centre (NHIC) has location information available on their website •Field Naturalist Clubs •Conservation Authorities	•Confirm any ELC Vegetation Type for Cliffs or Talus Slopes •SWH MIST Index #21 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.
Sand Barren **Rationale**: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always <60%	Sand barrens typically are exposed sand, generally sparsely vegetated and caused by a lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	•A sand barren area >0.5 ha in size <u>Information Sources</u> •The Niagara Escarpment Commission has detailed information on location of these habitats •OMNRF Districts •Natural Heritage Information Centre (NHIC) has location information available on their website •Field Naturalist Clubs •Conservation Authorities	•Confirm any ELC Vegetation Type for Sand Barrens •Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic spp.) •SWH MIST Index #20 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.
Alvar **Rationale**: Alvars are extremely rare habitats in Ecoregion 7E.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Indicator Species**: *Carex crawei* *Panicum philadelphicum* *Eleocharis compressa* *Scutellaria parvula* *Trichostema brachiatum*	An Alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover	•An Alvar site >0.5 ha in size •Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie <u>Information Sources</u> •Alvars of Ontario (Federation of Ontario Naturalists, 2000) •Conserving Great Lakes Alvars (Ontario Nature) •OMNRF Districts •Natural Heritage Information Centre (NHIC) has location information available on their website •Field Naturalist Clubs •Conservation Authorities	•Field studies identify that four of the five Alvar Indicator Species at a Candidate Alvar Site is significant •Site must not be dominated by exotic of introduced species (<50% vegetative cover are exotic spp.) •The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses •SWH MIST Index #17 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
	These indicator species are very specific to Alvars within Ecoregion 7E				
Old Growth Forest **Rationale**: Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth Forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multilayered canopy and an abundance of snags and downed woody debris.	Woodland area is >0.5 ha <u>Information Sources</u> •OMNRF Forest Resource Inventory mapping •OMNRF Districts •Field Naturalist Clubs •Conservation Authorities •Sustainable Forestry License (SFL) companies will possibly know locations through field operations •Municipal forestry departments	Field studies will determine: •If dominant tree species of the forest are >140 years old, then the area containing these trees 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 •Determine ELC vegetation types for the forest area containing the old growth characteristics •SWH MIST Index #23 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.
Savannah **Rationale**: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25-60% 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).	•No minimum size to site •Site must be restored or a natural site. Remnant sites such as railway right-ofways are not considered SWH <u>Information Sources</u> •Natural Heritage Information Centre (NHIC) has location information available on their website •Field Naturalist Clubs •Conservation Authorities	Field studies confirm: •One or more of the Savannah indicator species listed in Appendix N should be present. Note: savannah plant spp. List from Ecoregion 7E should be used. •Area of the ELC Ecosite is the SWH •Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic spp.) •SWH MIST Index #18 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.
Tallgrass Prairie **Rationale**: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A tallgrass prairie has ground cover dominated by prairie grasses. An open tallgrass prairie habitat has <25% tree cover. 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	•No minimum size to site •Site must be restored or a natural site. Remnant sites such as railway right-of ways are not considered SWH <u>Information Sources</u> •Natural Heritage Information Centre (NHIC) has location information available on their website •Field Naturalist Clubs •Conservation Authorities	Field studies confirm: •One or more of the Prairie indicator species listed in Appendix N should be present. Note: savannah plant spp. List from Ecoregion 7E should be used. •Area of the ELC Ecosite is the SWH •Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic spp.) •SWH MIST Index #19 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
		Toronto area (north of Lake Ontario).			
Other Rare Vegetation Communities **Rationale**: Plant communities that often contain rare species which depend on the habitat for survival.		Provincially rare (S1, S2, S3) vegetation communities are listed in Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). Any ELC Ecosite Code that has a possible ELC Vegetation Type that is provincially rare is candidate SWH. Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	•ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). •MNRF/NHIC will have up to date listing for rare vegetation communities. <u>Information Sources</u> •Natural Heritage Information Centre (NHIC) has location information available on their website •Field Naturalist Clubs •Conservation Authorities	•Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). •Area of the ELC Vegetation Type polygon is the SWH. •SWH MIST Index #37 provides development effects and mitigation measures	Habitat criteria not met– none observed during numerous site visits conducted.
Specialized Habitat for Wildlife					
Waterfowl Nesting Area **Rationale**: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 NOTE Includes adjacency to Provincially Significant Wetlands	•A waterfowl nesting area extends 120 m from a wetland (>0.5 ha) or a wetland (>0.5 ha) and any small wetlands (0.5 ha) within 120 m or a cluster of 3 or more small (40 cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> •Ducks Unlimited staff may know the locations of particularly productive nesting sites •MNRF Wetland Evaluations for indication of significant waterfowl nesting habitat •Reports and other information available from Conservation Authorities	Studies confirmed: •Presence of 3 or more nesting pairs for listed species excluding Mallards, or; •Presence of 10 or more nesting pairs for listed species including Mallards. •Any active nesting site of an American Black Duck is considered significant. •Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" •A field study confirming waterfowl nesting habitat will determine boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest •SWH MIST Index #25 provides development effects and mitigation measures.	Habitat criteria not met. Pond is too small and dominated by cattails (choked with no open water). None observed during numerous site visits conducted.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **Rationale**: Nest sites are fairly uncommon in Eco - region 7E and are used annually by the se species. Many suitable nesting locations may be lost	Osprey SPECIAL CONCERN Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	•Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. •Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. •Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms) <u>Information Sources</u> •NHIC compiles all known nesting sites for Bald Eagles in Ontario	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 criteria not met. On-site valleyland is a minor feature consisting of ephemeral discharge. No stick nets observed observed during numerous site visits conducted. Sixteen Mile Creek valley is a major river corridor and may provide this habitat function.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
due to increasing shoreline development pressures and scarcity of habitat.			•MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat •Nature Counts, Ontario Nest Records Scheme data. •OMNRF District. •Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented •Reports and other information available from Conservation Authorities. •Field Naturalists clubs	habitat from 400-800 m is dependent on sight lines from the nest to the development and inclusion of perching and foraging habitat •To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. •Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid-August. •Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" •SWH MIST Index #26 provides development effects and mitigation measures	
Woodland Raptor Nesting Habitat **Rationale**: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	•All natural or conifer plantation woodland/forest stands >30 ha 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 Cooper's Hawk nest along forest edges sometimes on peninsulas or small offshore islands. •In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest <u>Information Sources</u> •OMNRF Districts •Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented •Check data from Bird Studies Canada •Reports and other information available from Conservation Authorities	Studies confirm: •Presence of one or more active nests from species list is considered significant •Red-shouldered Hawk and Northern Goshawk – A 400 m radius around the nest or 28 ha areaof habitat is the SWH. The 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest. •Barred Owl – A 200m radius around the nest is the SWH •Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is the SWH •Sharp-Shinned Hawk – A 50m radius around the nest is the SWH •Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. •SWH MIST Index #27 provides development effects and mitigation measures	Habitat criteria not met. While Redtail Hawk was observed, woodland does not have greater than > 30 ha with >4ha of interior habitat. It is recognized that the woodland and valleyland are likely to provide nesting for hawks and owls however this habitat is not uncommon in Halton Region and does not meet criteria threshold.
Turtle Nesting Areas **Rationale**: These habitats are rare and when identified will often be the only breeding site for local populations of turtles	**Special Concern**: Midland Painted Turtle Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1, FEO1	•Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. •For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and is located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.	Studies confirm: •Presence of 5 or more nesting Midland Painted Turtles. •One ore more Northern Map Turtles or Snapping Turtles nesting is a SWH. •The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30 to 100 m around the nesting area	Limited opportunities for nesting along the pond with no nests observed or evidence of predated nests indicating usage

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
			•Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes and rivers are most frequently used. <u>Information Sources</u> •Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). •Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. •Natural Heritage Information Centre (NHIC). •Field naturalist clubs.	dependent on slope, riparian vegetation and adjacent land use is the SWH. •Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30 to 100 m area of habitat. •Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. •SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	
Seeps and Springs **Rationale**: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamanders	Seeps/springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	•Any forested area (with <25% meadow/field/ pasture) within the headwaters of a stream or river system •Seeps and springs are important feeding and drinking areas. Especially in the winter will support a variety of plant and animal species. <u>Information Sources</u> •Topographical Map. •Thermography. •Hydrological surveys conducted by Conservation Authorities and MOECC. •Field Naturalists Clubs and landowners. •Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped	Studies confirm: •Presence of 5 or more nesting Midland Painted Turtles. •One ore more Northern Map Turtles or Snapping Turtles nesting is a SWH. •The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30 to 100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. •Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30 to 100 m area of habitat. •Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. •SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat. Field studies confirm: •Presence of a site with 2 or more seeps/springs should be considered SWH. •The area of an ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and ground water condition need to be considered in delineation the habitat •SWH MIST Index #30 provides development effects and mitigation measures	Habitat criteria not met. Not observed during field evaluations in proximity to the valley edge.

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
Amphibian Breeding Habitat (Woodland). **Rationale**: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	•Presence of a wetland, pond or woodland pool (including vernal pools) >500 m2 (about 25 m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. •Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. <u>Information Sources</u> •Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records •Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. •OMNRF Districts and wetland evaluations •Field Naturalist clubs •Canadian Wildlife Service Amphibian Road Call Survey •Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm: •Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or egg masses) or 2 or more of the listed frog species with Call Level Codes of 3. •A combination of observational study and call count surveys will be required during the spring (Mar.-Jun.) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands •The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. •SWH MIST Index #14 provides development effects and mitigation measures	No woodland breeding vernal pools ponds observed during numerous site visits conducted.
Amphibian Breeding Habitat (Wetlands) **Rationale**: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120 m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bullfrog) may be adjacent to woodlands.	•Wetlands >500m2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats •Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators •Bullfrogs require permanent water bodies with abundant emergent vegetation. <u>Information Sources</u> •Ontario Herpetofaunal Summary Atlas (or other similar atlases) •Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. •OMNRF Districts and wetland evaluations. •Reports and other information available from Conservation Authorities	Studies confirm: •Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3 or; Wetland with confirmed breeding Bullfrogs are significant •The ELC ecosite wetland area and the shoreline are the SWH •A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. •If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. •SWH MIST Index #15 provides development effects and mitigation measures	While Low calling levels of (L1/ L2) Gray Tree Frog, Northern Leopard Frog and Green Frogs where observed during site visits conducted, the abundance of individuals recorded do not indicate the presence of significant amphibian habitat as defined in the SWH Criteria. Furthermore, it is anticipated that the small pond likely freezes to the bottom in severe winters, resulting in mortality of burrowing frogs. **For this reason, the pond is considered an ecological "sink" vs productive dispersion habitat.**
Woodland Area - Sensitive Bird Breeding Habitat	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula	All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD	•Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha	Studies confirm: •Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.	**Candidate** Eastern Wood-pewee was noted as a probable breeder in the incised

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive inte rior forest song birds	Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Pileated Woodpecker Special Concern: Cerulean Warbler Canada Warbler		•Interior forest habitat is at least 200 m from forest edge habitat <u>Information Sources</u>: •Local birder clubs. •Canadian Wildlife Service (CWS) for the location of forest bird monitoring. •Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species •Reports and other information available from Conservation Authorities.	•Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH •Conduct field investigations in spring and early summer when birds are singing and defending their territories •Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •SWH MIST Index #34 provides development effects and mitigation measures HABITATS OF SPECIES OF CONSERVATION CONCERN	channel and will be protected.
Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)					
Marsh Breeding Bird Habitat **Rationale**: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan Special Concern: Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: all SW, MA and CUM1 sites	•Nesting occurs in wetlands. •All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present •For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water <u>Information Sources</u> •OMNRF District and wetland evaluations. •Field Naturalist clubs •Natural Heritage Information Centre (NHIC) Records. •Reports and other information available from Conservation Authorities. •Ontario Breeding Bird Atla	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 Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH •Area of the ELC ecosite is the SWH. •Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. •Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •SWH MIST Index #35 provides development effects and mitigation measures	Pond is very small with limited shallow water (choked by cattails). Marsh birds were not heard during evening Amphibian surveys or early Dawn Breeding Bird surveys.
Open Country Bird Breeding Habitat **Rationale:** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern: Short-eared Owl	CUM1 CUM2	•Large grassland areas (includes natural and cultural fields and meadows) >30 ha •Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years) •Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. •The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species <u>Information Sources</u> •Agricultural land classification maps, Ministry of Agriculture. •Local bird clubs. •Ontario Breeding Bird Atlas	Field studies confirm: •Presence of nesting or breeding of 2 or more of the listed species •A field with 1 or more breeding Short-eared Owls is to be considered SWH •The area of SWH is the contiguous ELC ecosite field areas •Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories •Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •SWH MIST Index #32 provides development effects and mitigation measures	Habitat criteria not met

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
			•EIA/EIS Reports and other information available from Conservation Authorities		
Shrub/Early Successional Bird Breeding Habitat **Rationale:** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator 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	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	•Large field areas succeeding to shrub and thicket habitats >10 ha 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 <u>Information Sources</u> •Agricultural land classification maps, Ministry of Agriculture. •Local bird clubs. •Ontario Breeding Bird Atlas •Reports and other information available from Conservation Authorities	Field studies confirm: •Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species •A habitat with breeding Yellow-breasted Chat or Goldenwinged Warbler is to be considered as Significant Wildlife Habitat •The area of the SWH is the contiguous ELC ecosite field/thicket area. •Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories •Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •SWH MIST Index #33 provides development effects and mitigation measures	Habitat criteria not met
Terrestrial Crayfish **Rationale**: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crayfish or Meadow Crayfish; (Cambarus diogenes)	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish	•Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish •Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water •Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well-formed. <u>Information Sources</u> •Information sources from “Conservation Status of Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF, March, 1998	Studies confirm: •Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites •Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH •Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult •SWH MIST Index #36 provides development effects and mitigation measures	Habitat criteria not met
Special Concern and Rare Wildlife Species **Rationale**: These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1, S2, S3, SH) plant and animal species. Lists of these species are tracked by the NHIC	All plant and animal element occurrences (EOs) within a 1 km or 10 km grid. Older EOs were recorded prior to GPS being available, therefore location information may lack accuracy.	•When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <u>Information Sources</u> •Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. •NHIC Website “Get Information”: http://nhic.mnr.gov.on.ca •Ontario Breeding Bird Atlas	Studies confirm: •Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. •The area of the habitat to the finest ELC scale that protects the habitat features 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	**Confirmed** Presence of Eastern Wood-pewee was noted on a single visit as discussed in Section 4.2.4

Ecoregion 7E Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment of Habitat in EIA Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Source	Defining Criteria	
			•Expert advice should be sought as many of the rare spp. Have little information available about their requirement	species e.g. specific nesting habitat or foraging habitat. •SWH MIST Index #37 provides development effects and mitigation measures	
Animal Movement Corridors					
Amphibian Movement Corridors Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	•Movement corridors between breeding habitat and summer habitat •Movement corridors must be determined when amphibian breeding habitat is confirmed as SWH (Amphibian Breeding Habitat, Wetland) <u>Information Sources</u> •MNRF District Office. •Natural Heritage Information Centre (NHIC). •Reports and other information available from Conservation Authorities. •Field Naturalist Clubs	•Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites •Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant •Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps	Amphibian migrations or movement were not observed along the open fields or along the disturbed hedgerow rows connected to the valley during numerous site visits conducted. While frogs may disperse from the adjacent valley woodland areas, the pond has not been confirmed as a significant breeding pond through the surveys completed. There are no other identified features (breeding, upland habitats on the west side of the property or west adjacent lands that would suggest significant movement corridors.
Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E					
7E-2 **Bat Migratory Stopover Area** **Rationale**: Stopover areas for long distance migrant bats are important during fall migration	Hoary Bat Eastern Red Bat Silver-haired Bat	No specific ELC types.	• Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas. • This is the only known bat migratory stopover habitats based on current information. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University of Waterloo, Biology Department	• Long Point (42°35'N, 80°30'E, to 42°33'N, 80°03'E) has been identified as a significant stop- over habitat for fall migrating Silverhaired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration. • The confirmation criteria and habitat areas for this SWH are still being determined. • SWH MIST Index #38 provides development effects and mitigation measures	Criteria not met. The site is located in ecodistrict 7E-4.

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