



DILLON
CONSULTING

TROLLEYBUS URBAN DEVELOPMENT INC.

Updated Scoped Environmental Impact Study

Hancock Neighbourhood Northwest, Courtice, Ontario

Table of Contents

1.0	Introduction	1
2.0	Overview of Policy Framework	3
2.1	Provincial Framework	3
2.1.1	Provincial Policy Statement (2020)	3
2.1.2	Endangered Species Act, 2007	4
2.1.3	Central Lake Ontario Conservation Authority (Ontario Regulation 42/06)	4
2.1.4	Greenbelt Plan	6
2.1.5	Growth Plan for the Greater Golden Horseshoe	6
2.2	Regional Framework	6
2.2.1	Durham Regional Official Plan	6
2.3	Municipal Framework	7
2.3.1	Municipality of Clarington Official Plan	7
3.0	Methodology	9
3.1	Information Sources	9
3.2	The Study Area	10
3.3	Ecological Land Classification	10
3.4	Botanical Inventory	11
3.5	Breeding Bird Survey	11
3.6	Bat Maternity Roost Surveys	11
3.7	Incidental Wildlife	12
3.8	Endangered, Threatened and Rare Species	12
3.9	Identification of Significant Wildlife Habitat	12
4.0	Results – Biophysical Assessment	13
4.1	General Site Description	13
4.2	Landforms, Soils and Surficial Geology	13
4.3	Hydrology and Hydrogeology	13
4.4	Ecological Land Classification	13
4.5	Botanical Inventory	18
4.6	Drainage Feature	18
4.7	Natural Heritage Features	19
4.7.1	Wetlands	19
4.7.2	Woodlands	19

	4.7.3	Significant Wildlife Habitat.....	24
4.8		Endangered, Threatened, and Rare Species	26
4.9		Incidental Wildlife	27
5.0		Ecological Function	28
6.0		Description of the Proposed Development	29
7.0		Impact Identification and Analysis	31
7.1		Direct Impacts	31
	7.1.1	Tree and Vegetation Removal	31
	7.1.2	Diversion of Surface Water Flows	34
	7.1.3	Erosion and Sedimentation into Natural Features	34
	7.1.4	Species at Risk	34
	7.1.5	Loss of and/or Disturbance to Significant Wildlife Habitat.....	35
7.2		Indirect Impacts.....	35
	7.2.1	Anthropogenic disturbance.....	35
	7.2.2	Colonization of Non-native and/or Invasive Species	36
	7.2.3	Hydrological Impacts on the Harmony-Farewell Iroquois Beach Wetland Complex	36
8.0		Mitigation Measures	37
8.1		Natural Heritage Feature Buffers	37
8.2		Compensation – Scotch Pine Plantation and Cultural Thicket Swamp.....	38
8.3		Edge Management Plan.....	41
8.4		Integrated Stormwater Management Plan and Low-Impact Design.....	43
8.5		Wildlife Impact Mitigation Plan.....	44
8.6		Erosion and Sediment Control Plan.....	45
8.7		Environmental Monitoring Plan	45
8.8		PSW Monitoring / Mitigation Plan	46
9.0		Summary	47

Figures

Figure 1: Project Location	2
Figure 2: Land Use Designations.....	5
Figure 3: Ecological Land Classification.....	15
Figure 4: Significant Natural Features.....	23
Figure 5: Proposed Concept Plan.....	30
Figure 6: Compensation Removal Areas	33
Figure 7: Proposed Compensation / Enhancement Area.....	40

Tables

Table 1: Policies, Legislation and Background Resources Searched.....	9
Table 2: Ecological Land Classification.....	16
Table 3: 2018 Breeding Bird Survey Results.....	25
Table 4: 2019 Bat Maternity Roost Survey Results	26

Appendices

A	Terms of Reference
B	Pre-Consultation Meeting Minutes
C	Policy Schedules & Mapping
D	MNRF Correspondence
E	Plant List
F	Site Photographs
G	Edge Management Plan

References

Introduction

Dillon Consulting Limited (Dillon) was retained by Trolleybus Urban Development Inc. (Trolleybus) to conduct a Scoped Environmental Impact Study (the “EIS”) for a proposed residential development located northwest of the Nash Road and Hancock Road intersection, within the community of Courtice in the Municipality of Clarington (the “Municipality”), and the Region of Durham (the “Region”), Ontario.

The development area associated with the proposed development encompasses a number of parcels of land (i.e. 1828-1840 Nash Road and 3090-3158 Hancock Road) (the “Property”) within the Hancock Neighbourhood council-approved Design Plan. The Property is located to the west of Hancock Road, north of Nash Road, east of Duval Street, and south of George Reynolds Drive (**Figure 1**). Land use within the Property primarily consists of single residential dwellings, an automotive recycling facility, hedgerows, meadow and a section of woodland. The Property is located adjacent to residential areas, roads and wooded areas.

The purpose of the EIS is to document existing conditions of the natural environment; determine the potential limits of development; evaluate the potential for environmental impacts associated with the proposed development; and recommend mitigation, restoration and enhancement measures to preserve and/or restore natural features. The EIS has been prepared in general accordance with the following environmental guidelines:

- Dillon’s Scoped EIS Terms of Reference (TOR) submitted on March 22, 2018 and approved by CLOCA on May 4; **Appendix A**
- TOR comments received via email from CLOCA (January 3, 2018, June 14, 2019) (**Appendix A**)
- Regional and Municipal Official Plans (2017, 2017)
- Growth Plan for the Greater Golden Horseshoe (GPGGH) (2017)
- Pre-Consultation Meeting Minutes (October 26, 2017 meeting; November 22, 2017 minutes; **Appendix B**)

Previous studies have been completed for the Property. A Natural Environment Background Report (Niblett 2012) was completed for the Hancock Neighbourhood Design Plan Update and a Species at Risk (SAR) Screening Report (Dillon 2017) was completed for seven parcels in the southern portion of the Property (i.e. 1828-1840 Nash Road and 3090 Hancock Road; the ‘southern parcels’).

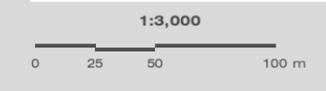
A “preliminary” EIS was prepared in June of 2018, which reflected information collected from studies carried out in 2017. The “preliminary” EIS was updated (Dillon, 2018) to include results from field investigations completed during the spring, summer and fall of 2018 in accordance with the CLOCA approved Terms of Reference (ToR). Where applicable, the updated EIS also incorporated information from the aforementioned studies completed for the Property (Niblett 2012 and Dillon 2017). The November 2018 EIS was subsequently updated in July 2019 to reflect comments provided by CLOCA and the Municipality following their respective reviews. The purpose of this April 2021 EIS update is to address the December 2020 and January 2021 EIS comments provided by CLOCA and the Municipality on the September 2020 EIS update (submitted in November 2020).



TROLLEYBUS URBAN DEVELOPMENT INC.
HANCOCK NEIGHBOURHOOD NW - EIS

PROJECT LOCATION
FIGURE I

- Property Boundary
- Study Area (50 m Setback)
- Watercourse (MNR)
- Ohn_Waterbody



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: GM
 MAP CHECKED BY: DB
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 187249
 STATUS: FINAL
 DATE: 10/31/2018

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2.0

Overview of Policy Framework

The Property is subject to three levels of planning policies: Provincial, Regional and Municipal. For purposes of the following discussion, the most recent updated version of the applicable documents has been reviewed. The context provided relates to issues pertinent to the Property, and does not represent the full spectrum of applicable planning related considerations contained within the following governing plans.

2.1 Provincial Framework

2.1.1 Provincial Policy Statement (2020)

The Provincial Policy Statement, 2020 (PPS) provides overall policy direction on matters of provincial interest related to land use planning and development in Ontario. The PPS sets forth a vision for Ontario's land use planning system by managing and directing land use to achieve efficient development and land use patterns, wise use and management of resources, and protecting public health and safety. This report deals specifically with Policy 2.1 - Natural Heritage, and Policy 2.2 - Water, which provides for the protection and management of natural heritage and water resources, which include the following:

- *significant wetlands*
- *significant coastal wetlands*
- *significant woodlands*
- *significant valleylands*
- *significant wildlife habitat*
- *significant areas of natural and scientific interest (ANSIs)*
- *fish habitat*
- *sensitive surface water features*
- *sensitive ground water features*

The PPS defines “significant” to mean:

- *in regard to wetlands, coastal wetlands and areas of natural and scientific interest, an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry (MNR) using evaluation procedures established by the province, as amended from time to time.*
- *in regard to woodlands, an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the MNR.*
- *in regard to other features and areas in Policy in 2.1, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system”.*

The PPS defines “sensitive” to mean:

- *in regard to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events, including, but not limited to, water withdrawals and additions of pollutants.*

2.1.2 Endangered Species Act, 2007

In June 2008, the *Endangered Species Act, 2007* (ESA) came into effect in Ontario. The purpose of the ESA is to identify SAR based on the best available scientific information; to protect SAR and their habitats; to promote the recovery of SAR; and to promote stewardship activities to assist in the protection and recovery of SAR in Ontario. There are two applicable regulations under the ESA; *Ontario Regulation* (O. Reg.) 230/08 (the Species at Risk Ontario [SARO] List); and, O. Reg. 242/08 (General regulation under the ESA). These regulations serve to identify which species and habitats receive protection and provide direction on the current implementation of the ESA. As of April 1, 2019 the responsibility of the ESA has transitioned from the Ministry of Natural Resources and Forestry (MNRF) to the Ministry of the Environment, Conservation and Parks (MECP).

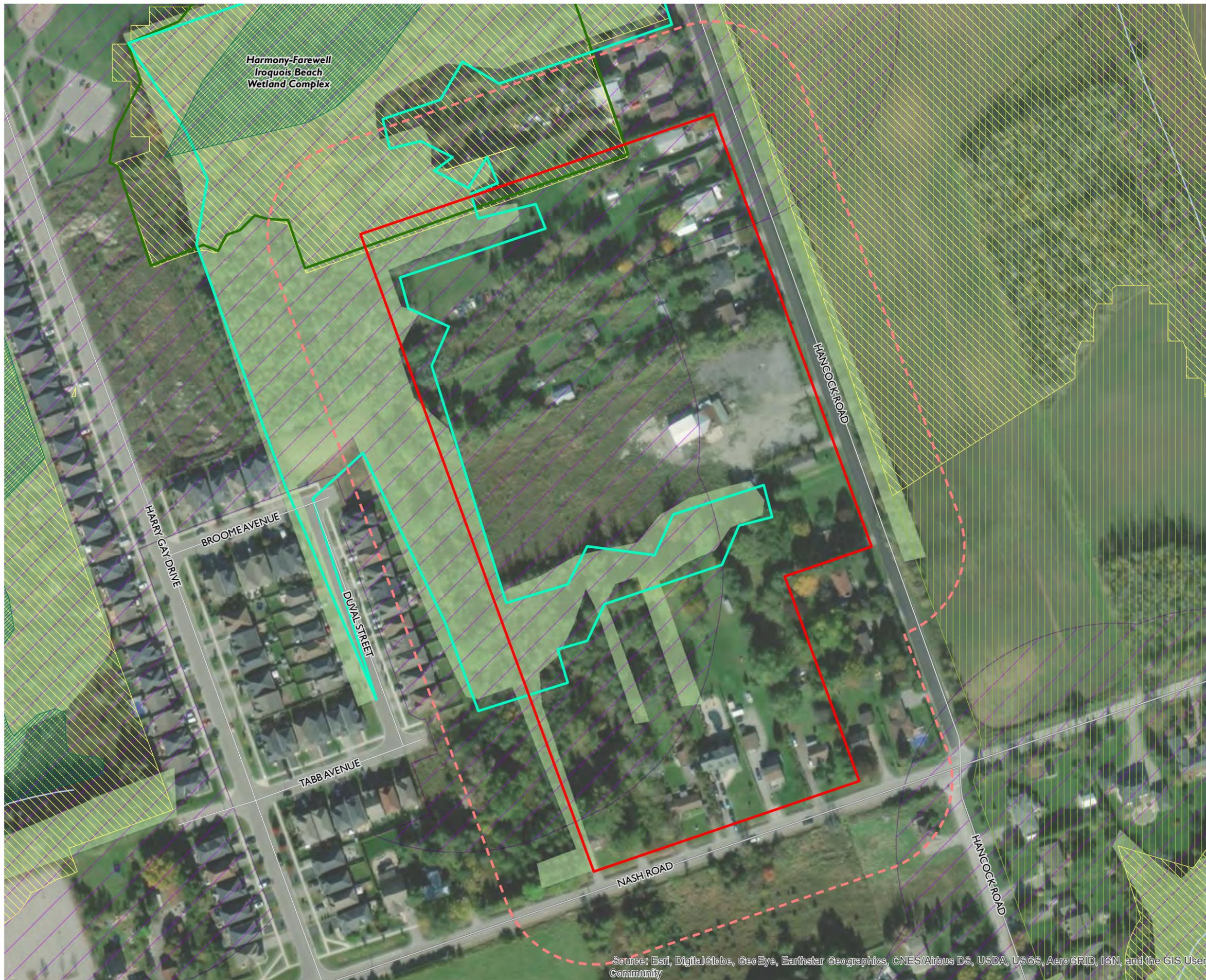
The potential for SAR and SAR habitat to be impacted as a result of the development of the Property is discussed further in **Section 3.7** and **Section 4.7** of this report.

2.1.3 Central Lake Ontario Conservation Authority (Ontario Regulation 42/06)

In accordance with Section 28 of the *Conservation Authorities Act, 1990*, CLOCA is authorized to implement and enforce the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (O. Reg. 42/06). Section 2(1) of this Regulation lists the areas within CLOCA’s jurisdiction where development is prohibited without proper permission from CLOCA. Such areas include, but are not limited to, rivers or stream valleys, hazardous lands, and wetlands.

In participating in the review of applications under the Planning Act and Environmental Assessment Act(s), CLOCA confirms that applicants and approval authorities are aware of the Section 28 regulation requirements under the *Conservation Authorities Act*, where applicable. Further, CLOCA assists in the coordination of these applications to avoid ambiguity, conflict and unnecessary delay or duplication in the process.

Approximately 2/3 of the Property is located within CLOCA’s Regulation Area (CLOCA 2017), while small area in the northern portion of the Property is located within CLOCA’s Natural Heritage System (**Figure 2**). A remnant drainage feature is located between Hancock Road and the western property limit. The Provincially Significant Wetland (PSW), Harmony-Farewell Iroquois Beach Wetland Complex, is located outside and to the northwest of both the Property and the Study Area.



TROLLEYBUS URBAN DEVELOPMENT INC.
HANCOCK NEIGHBOURHOOD NW - EIS

LAND USE DESIGNATIONS
FIGURE 2

- Property Boundary
- Study Area (50 m Setback)
- Provincially Significant Wetland (MNRF)
- Greenbelt Protected Countryside
- Key Natural Heritage and Hydrologic Features (Durham Region)
- Environmental Protection Area (Municipality of Clarington)
- Natural Heritage System (CLOCA)
- Regulated Area (CLOCA)
- Watercourse (MNRF)
- Woodland (MNRF)



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, CLOCA

MAP CREATED BY: GM
 MAP CHECKED BY: DB
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 187249
 STATUS: FINAL
 DATE: 5/10/2018

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2.1.4 Greenbelt Plan

The Greenbelt Plan (2017) was approved under the *Greenbelt Act, 2005* and took effect on July 1, 2017. This plan was approved as an amendment to the original Greenbelt Plan which took effect on December 16, 2004. The Property is located outside of the Greenbelt Plan area; however, a portion of the Study Area in the east (i.e. east of Hancock Road) is located within the Greenbelt Protected Countryside, as shown on **Figure 2** and detailed Map 51 of the Greenbelt Area (**Appendix C**).

2.1.5 Growth Plan for the Greater Golden Horseshoe

The Growth Plan for the Greater Golden Horseshoe (GPGGH) (2017) was approved under the *Places to Grow Act, 2005* and took effect on July 1, 2017. The Property contains the following designation, as shown on Schedule 4 of the GPGGH (**Appendix C**):

- *Built-up Area*: Policy 2.2.2 addresses the Built-up Area designation and contain provisions for development of residential areas.
- *Greenfield Area*: Policy 2.2.7 addresses the Greenfield Area designation and contain provisions for development of residential areas with a minimum density target of residents per hectare.

2.2 Regional Framework

2.2.1 Durham Regional Official Plan

The Durham Regional Official Plan is based on the Region's original Official Plan adopted by Regional Council on July 14, 1976 and approved by the Minister of Housing on March 17, 1978. The Regional Council subsequently adopted the Plan on June 5, 1991. The Plan was then approved by the Ministry of Municipal Affairs and Housing (MMAH) on November 24, 1993, while deferring several sections. There have been a number of revisions and amendments to the Plan in addition to subsequent appeals to the changes in the years since the original Official Plan was adopted. Most recently, the Regional Official Plan (ROP) was approved on May 11, 2017 with a few outstanding deferrals.

Policies within the ROP direct a significant portion of new growth to the Urban Areas of the community, while maintaining harmony with the natural environment and heritage of the Region. The ROP directs policies to create healthy and complete, sustainable communities with livable urban environments. The Property falls within the Living Area (Schedule A) and Urban Area, with Key Natural Heritage and Hydrologic Features along the western and northern boundaries of the Property (Schedule B) in the ROP (**Appendix C**).

The Property contains the following designations, as show on Schedule A and Schedule B of the ROP:

- *Living Area*: Policies 8.1.15-16 of the ROP addresses the Living Area designation and contains provisions for development in a cost-effective and efficient manner, in consideration of safety, energy efficiency and in harmony with nature.
- *Urban Area*: Policy 8 of the ROP addresses the Urban Area designation and contains provisions for development of healthy and complete sustainable communities, while protecting the natural heritage and hydrological features.

- *Key Natural Heritage and Hydrologic Features:* Policies 2.3.14-18 of the ROP addresses the Key Natural Heritage and Hydrologic Feature designation and contains provisions for environmental protection and undertaking environmental studies.

The ROP defines *Key Natural Heritage Feature* as:

- *significant habitat of endangered, threatened, special concern and rare species*
- *fish habitat*
- *wetlands*
- *Areas of Natural and Scientific Interest (ANSIs), life science*
- *significant valleylands*
- *significant woodlands*
- *significant wildlife habitat*
- *sand barrens, savannahs and tallgrass prairies*
- *alvars*

The ROP defines *Key Hydrologic Feature* as:

- *permanent and intermittent streams*
- *wetlands*
- *lakes, and their littoral zones*
- *kettle lakes, and their surface catchment areas*
- *seepage areas and springs*
- *aquifer and recharge areas*

Portions of the Property are associated with the *Key Natural Heritage and Hydrologic Features* designation in associated with the woodland feature in the northwest of the Property.

2.3 Municipal Framework

2.3.1 Municipality of Clarington Official Plan

The Municipality of Clarington Official Plan (Consolidated 2017) conforms to the ROP. The Property contains the following designations (**Appendix C**):

- *Urban Residential (Map A2):* Policy 9.3.1 addresses the Urban Residential designation and contains provisions for development for housing purposes; alternative uses may be permitted as well.
- *Environmental Protection Area (Map A2):* Policy 14.4 addresses the Environmental Protection Area designation and contains provisions for the protection of these areas and their ecological functions. These areas include natural heritage features and hydrologically sensitive features that comprise the natural heritage system.

The Official Plan defines *Natural Heritage Feature* as:

- *features and areas, including wetlands, woodlands, wildlife habitat, fish habitat and riparian corridors, valleylands, ANSIs, rare vegetation communities, habitat of endangered species or threatened species, which are important for their environmental and social values as a legacy of the natural landscape.*

The Official Plan defines *Hydrologically Sensitive Feature* as:

- *wetlands*
- *watercourses*
- *seepage areas and springs*
- *aquifers*
- *recharge areas*
- *groundwater features*
- *lakes and their littoral zone*

The portion of the woodland in the northwestern portion of the Property is associated with the *Environmental Protection Area* designation. The definition of woodland under the Municipality's Official Plan is the same as that identified under the ROP.

3.0 Methodology

The information contained in this updated EIS is based on data collected during 2017, 2018 and 2019 field investigations, an October 30, 2019 site visit with representatives from CLOCA and the Municipality, existing published data and data made available through various public agencies, web-based mapping programs and other environmental reports relating to the Property.

In general, field investigations in support of the ToR were completed during the 2017, 2018 and 2019 field seasons. The 2017 field investigations focussed on the southern properties within the Property boundaries; however, only a single season botanical inventory was completed. Field investigations were again completed in 2018 to address commitments made in the approved TOR. The 2018 field investigations captured the entire Property and its associated Study Area. Field studies completed in 2019 were limited to snag/cavity surveys while the October 30, 2019 agency site visit focused on ecological land classification (ELC) community and boundary confirmation south of the automotive recycling property, as well as review of the extents of the remnant drainage feature from Hancock Road to the western property limit.

3.1 Information Sources

Secondary source information was used to identify known environmental constraint areas, the soils, landforms, geological features, significant natural heritage features such as watercourses, woodlands and potential wildlife occurrences in relation to the Property. Information sources reviewed to provide an understanding of the Property in the context of the surrounding area are listed in **Table 1**.

Table 1: Policies, Legislation and Background Resources Searched

Source	Record Reviewed/Requested
Province of Ontario	
Provincial Policy Statement, 2020	<ul style="list-style-type: none"> Section 2.1 related to natural heritage features. Section 2.2 related to water.
Endangered Species Act, 2007	<ul style="list-style-type: none"> MNRF Species at Risk in Ontario (SARO) List (O. Reg. 230/08).
Ministry of Natural Resources and Forestry	<ul style="list-style-type: none"> MNRF Natural Heritage Information Centre (NHIC) database (Squares: 17PJ7865, 17PJ7965; MNRF 2018b). MNRF Make a Map: Natural Heritage Areas (MNRF 2018a). Information Request submitted to the MNRF, Aurora District (November 3, 2017) and response from MNRF received (November 17, 2017). Natural Heritage Reference Manual (MNRF 2010). MNRF Significant Wildlife Habitat Technical Guide (MNRF 2000) Significant Wildlife Habitat Ecoregion 6E Criterion Schedules (MNRF 2015).
Durham Region	<ul style="list-style-type: none"> Official Plan (Consolidated May 2017).

Source	Record Reviewed/Requested
Municipality of Clarington	<ul style="list-style-type: none"> Official Plan (Consolidated October 2017).
Central Lake Ontario Conservation Authority	<ul style="list-style-type: none"> Received digital GIS shapefiles. Received email/correspondence from CLOCA (January 3, 2018, June 14, 2019 and December 20, 2019). Terms of References submitted to CLOCA on March 22, 2018 and subsequently approved by CLOCA on May 4, 2018.
Bedrock Geology of Ontario, Southern Sheet (Ontario Geological Survey 1991)	<ul style="list-style-type: none"> Reviewed bedrock geology of Ontario, southern sheet.
Physiography of Southern Ontario (Chapman and Putnam 1984)	<ul style="list-style-type: none"> Reviewed the physiography.
Wildlife Atlases	<ul style="list-style-type: none"> Ontario Breeding Bird Atlas (Square 17PJ76; Cadman et al. 2007). Christmas Bird Count (National Audubon Society 2017). Ontario Butterfly Atlas (Square 17PJ76; Toronto Entomologists Association 2017). Ontario Reptile and Amphibian Atlas (Square 17PJ76, Ontario Nature 2017). Mammals of the Western Hemisphere (NatureServe 2017).
Previous Studies Associated with the Property	<ul style="list-style-type: none"> SAR Screening Report (Dillon 2017). Natural Environment Background Report for the Hancock Neighbourhood Design Plan Update (Niblett 2012).

3.2 The Study Area

For the purpose of the EIS, field investigations were to include the Property as well as the surrounding 50 metres (m) (**Figure 1**). However, in instances where landowner permission was not provided for the 50 m surrounding the Property, field interpretations were to be made from the Property boundaries. During the 2017, 2018 and 2019 field investigations, land access was generally limited to the Property only.

3.3 Ecological Land Classification

Vegetation communities were assessed using Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998) to identify and assess potential natural heritage features within the Study Area. During the field investigations, vegetation was characterized using ELC in order to classify and map ecological communities to the vegetation level. The ecological community boundaries were determined through the review of aerial photography and then further refined during field investigations.

The ELC protocol recommends that a vegetation community be a minimum of 0.5 ha in size before it is defined. Based on the composition of vegetation communities within the Study Area, patches of vegetation less than 0.5 ha or disturbed/planted vegetation can be described, provided they clearly fit within an ELC vegetation type.

ELC was completed for the southern properties during field investigations in 2017. ELC for the remainder of the Study Area was completed in 2018.

An agency site visit was completed on October 30, 2019 to review previously mapped ELC communities and boundaries south of the automotive recycling facility (i.e. south of 3090 Hancock Road).

3.4 Botanical Inventory

Three-season (spring, summer and fall) botanical surveys were completed within the Study Area. A summer botanical inventory was completed for the southern properties on July 4, 2017. The 2018 botanical inventories included three-season surveys for the northern properties as well as spring and fall surveys to complete the data set for the southern properties. The 2018 spring, summer and fall botanical surveys were completed on June 7, July 3 and September 18, respectively. Botanical surveys were conducted using wandering transects to determine species presence, richness and abundance. Species nomenclature is based on the Ontario Plant List (Newmaster et al., 1998).

3.5 Breeding Bird Survey

Diurnal breeding bird survey followed the methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al. 2007). Two surveys were conducted between late-May and early-July in 2018 to document both early season and late season breeders.

Specifically, surveys consisted of point counts generally conducted between dawn and five hours after sunrise to establish quantitative estimates of bird abundance in suitable habitat types within the Study Area. During the surveys, evidence of breeding behaviour was recorded, which generally included but was not limited to, males singing, nest building, egg incubation, territorial defence, carrying food, and feeding their young.

To supplement the surveys, area searches of the habitats were completed using binoculars to observe species presence and breeding activity. Area searches involved noting individual bird species and their corresponding breeding evidence while traversing the habitat on foot.

3.6 Bat Maternity Roost Surveys

Vegetation within the Property with the potential to support maternity bat roosting habitat was assessed to determine the presence/absence of snag/cavity trees using fixed transects spaced 10 m apart. The following information was recorded for each snag/cavity tree observed; diameter-breast-height (DBH), species, health/decay class, whether cavities were present, cardinal direction of cavities, estimated height of tree and representative photos.

3.7 Incidental Wildlife

A general wildlife assessment was completed in 2017 and was refined in 2018 within the Study Area through incidental observations while on site. Incidental observations of wildlife were noted, and included other wildlife evidence such as dens, tracks, and scat. For each observation, notes, and when possible, photos were taken. These observations are used to help determine potential ecological functions, linkages, etc. within the Study Area.

3.8 Endangered, Threatened and Rare Species

In addition to the field surveys, a search of the NHIC database and other available wildlife atlases was conducted to identify possible occurrences of federal and/or provincial SAR and/or provincially rare species in proximity to the Study Area. SAR are defined as those listed as Endangered or Threatened under the ESA. Species of Conservation Concern (SCC) are defined as species listed as Threatened or Endangered under the federal *Species at Risk Act* (SARA) 2002, but not under the provincial ESA; species that are provincially rare/tracked (i.e., have a Sub-national (provincial) Rank of S1 – Critically Imperilled, S2 – Imperilled or S3 – Vulnerable) and/or are designated as Special Concern under the ESA.

An information request was submitted to the MNRF, Aurora District on November 3, 2017. Based on comments received from the MNRF on November 17, 2017, the following SAR and SCC were identified as having the potential to occur within and/or in proximity to the Study Area (**Appendix D**). These species include:

- Butternut (*Juglans cinerea*; END)
- Chimney Swift (*Chaetura pelagica*; THR)
- Eastern Wood-Pewee (*Contopus virens*; SC)
- Wood Thrush (*Hylocichla mustelina*; SC)
- Eastern Small-footed Myotis (*Myotis leibii*; END)
- Bank Swallow (*Riparia riparia*; THR)
- Northern Myotis (*Myotis septentrionalis*; END)
- Tri-colored Bat (*Pipistrellus subflavus*; END)
- Barn Swallow (*Hirundo rustica*; THR)
- Little Brown Myotis (*Myotis lucifugus*; END)
- Monarch (*Danaus plexippus*; SC)
- Snapping Turtle (*Chelydra serpentina*; SC)

The probability of these species being impacted by the proposed development is discussed in **Section 4.7**.

3.9 Identification of Significant Wildlife Habitat

Criteria for determining significance of wildlife habitat follow the guidelines outlined in the Natural Heritage Reference Manual (MNRF 2010) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015), where applicable.

4.0 Results – Biophysical Assessment

The following sections outline the existing environmental conditions determined through the background review and field investigations within the Study Area, as outlined in **Appendix A**.

4.1 General Site Description

The Property is approximately 6.67 hectares (ha) in size, and in its current state includes single family dwellings, an automotive recycling facility, hedgerows, a cultural thicket swamp, a remnant drainage feature, a meadow and portions of a coniferous plantation. The surrounding land uses vary and are described as follows:

- North: residential dwellings and mixed forest
- West: residential dwellings, deciduous and coniferous communities and hedgerows
- East: Hancock Road and agricultural lands
- South: Nash Road and agricultural lands

4.2 Landforms, Soils and Surficial Geology

The Study Area is within the Lake Iroquois Beach (LIB) which lies over Upper Ordovician bedrock consisting of shale, limestone, dolostone, and siltstone (Ministry of Northern Development and Mines 1991). The physiography of the area is described as Clay Plain and Sand Plain (Chapman and Putnam 1984). The soils within the Study Area consist of Granby Sandy Loam, fine sand over till, which leads to poor drainage and a shallow water table (Niblett 2012).

4.3 Hydrology and Hydrogeology

As per the initial hydrological assessment for the Study Area (Niblett 2012), the Study Area lies within the drainage area of the Black Creek Subwatershed and is located within CLOCA's Regulation Area (CLOCA 2017). The Study Area is within the LIB, where the sediments represent surficial aquifer systems and deposits serve as shallow accessible sources of groundwater for domestic use and provide groundwater discharge to streams (CLOCA 2004). These deposits are highly vulnerable and are composed of coarse-grained sands and gravels.

4.4 Ecological Land Classification

The Study Area is dominated by Single Family Residential (CVR_3) lands, Industrial (CVC_2) lands (an automotive recycling facility), a Cultural Thicket Swamp (SWT), and Hedgerows (TAGM5) which are generally located along property boundaries (**Figure 3**). The residential properties consist mainly of gardens and manicured lawns. In terms of natural vegetation communities, a Fresh-Moist Mixed Meadow (MEMM4) is located in the central-western portion of Property. The typical species present in this community were indicative of a recently disturbed site.

An additional Fresh-Moist Mixed Meadow (MEMM4) is located within the Study Area, south of both the Property and Nash Road, in association with a Deciduous Thicket (MEMM4/THD). Similarly, a Dry-Fresh Mixed Meadow (MEMM3) is located west of the Property but within the Study Area.

Portions of a Fresh-Moist Poplar Deciduous Forest (FOD3) are located in the northwest and southwest corners of the Study Area; outside of the Property Boundary. Adjacent to the FOD3 in the northwest is a Scotch Pine Coniferous Plantation (FOCM6-3), as well as a Fresh-Moist Poplar Deciduous Forest/White Birch-Poplar Mineral Deciduous Swamp Complex (FOD3-SWM3). The entirety of the FOD3-SWM3 is located outside of the Property Boundary, while only a portion of the FOCM6-3 (0.21 ha) is located within the Property Boundary.

The remainder of the Study Area consists of agricultural fields and roads. The aforementioned communities are further described in **Table 2** and a list of botanical species observed during the botanical assessments is presented in **Appendix E**. None of the documented vegetation communities are considered rare in Ontario.



TROLLEYBUS URBAN DEVELOPMENT INC.
HANACOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON

ECOLOGICAL LAND CLASSIFICATION
FIGURE 3

- Project Boundary
- Study Area(50m Setback)
- ✪ Bat Habitat Tree (Snag)
- ✪ Breeding Bird Survey
- Ecological Land Classification
- SWT: Cultural Thicket Swamp
- CVI_1: Transportation
- CVC_2: Industrial
- CVR_3: Residential
- FOCM6-3: Scotch Pine Coniferous Plantation
- FOD3 - SWM3: Fresh Moist Poplar Deciduous Forest and White Birch Poplar Mineral Deciduous Swamp Complex
- FOD8-1: Fresh - Moist Poplar Deciduous Forest Type
- MEMM3: Dry-Fresh Mixed Meadow
- MEMM4: Fresh-Moist Mixed Meadow
- MEMM4/THD: Fresh-Moist Mixed Meadow/Deciduous Thicket
- OAGM1: Annual Row Crop
- OAGM4: Open Pasture
- TAGM5: Hedgerow
- Red-osier Dogwood Inclusion
- Remnant Drainage Feature



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
STATUS: DRAFT
DATE: 2021-04-26

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Table 2: Ecological Land Classification

ELC Community	Area within Study Area (Area within Project Location)	Vegetation ¹	Comments	Photo (Appendix D)
CVC_2 Light Industry	0.70 ha	An automotive recycling facility.	Located in the central eastern portion of the Study Area.	1
MEMM4 Fresh-Moist Mixed Meadow	(0.75 ha)	Typical species include Smooth Brome (<i>Bromus inermis</i>), Orchard Grass (<i>Dactylis glomerata</i>), Kentucky Bluegrass (<i>Poa pratensis</i>), as well as Reed Canary Grass (<i>Phalaris arundinaceae</i>), Asters (<i>Symphyotrichum</i> spp.) and Goldenrods (<i>Solidago canadensis</i> , <i>S. altissima</i> , <i>S. gigantea</i>).	Located in the central western portion of the Study Area, as well as south of both the Property and Nash Road.	2
MEMM3 Dry-Fresh Mixed Meadow	0.11 ha	Kentucky Bluegrass (<i>Poa pratensis</i>), Goldenrods (<i>Solidago canadensis</i> , <i>S. altissima</i> , <i>S. gigantea</i>), Asters (<i>Symphyotrichum</i> spp.), and Common Buckthorn (<i>Rhamnus cathartica</i>) ¹	Located outside of the Property but within the Study Area to the west.	N/A
CVR_3 Single Family Residential	5.14 ha (3.41 ha)	Residential properties. Some included unmaintained portions in the northern portions of the properties, which included similar groundcover species to the meadow habitat, as well as Common Buckthorn (<i>Rhamnus cathartica</i>) and Red-osier Dogwood (<i>Cornus sericea</i>).	Located throughout the Study Area.	3, 4, 5
FOD8-1 Fresh Moist Poplar Deciduous Forest	0.45 ha	Frequent gaps were documented throughout the extent of the woodland forest canopy within the Property. Species making up the incomplete crown cover include Manitoba Maple (<i>Acer negundo</i>), Green Ash (<i>Fraxinus pennsylvanica</i>), Scots Pine (<i>Pinus sylvestris</i>), White Willow (<i>Salix alba</i>), Common Buckthorn (<i>Rhamnus cathartica</i>), White Spruce (<i>Picea glauca</i>), American Basswood (<i>Tilia americana</i>) and Balsam Poplar (<i>Populus balsamifera</i>).	Located in the northwest portion of the Study Area. Also located outside of the Property but within the Study Area to the southwest.	6,7
FOD3 – SWM3 Fresh Moist Poplar Deciduous Forest and White Birch- Poplar Mineral Deciduous Swamp Complex	0.11 ha	Typical species include Trembling Aspen (<i>Populus tremuloides</i>), Paper Birch (<i>Betula papyrifera</i>), and American Basswood (<i>Tilia americana</i>). ¹	Located outside of the Property but within the Study Area to the north.	N/A

ELC Community	Area within Study Area (Area within Project Location)	Vegetation ¹	Comments	Photo (Appendix D)
FOCM6-3 Scotch Pine Coniferous Plantation	0.85 ha (0.21 ha)	Typical Species include Scots Pine, White Spruce, Trembling Aspen (<i>Populus tremuloides</i>), and Paper Birch (<i>Betula papyrifera</i>). ¹	Located both within the Property and the Study Area.	8, 9
SWT Cultural Thicket Swamp	(0.48 ha)	Dominant species observed included Red-osier Dogwood (<i>Cornus sericea ssp sericea</i>), Green Ash (<i>Fraxinus pennsylvanica</i>), Silver Maple (<i>Acer saccharinum</i>), Willows sp. (<i>Salix sp.</i>), European Alder (<i>Alnus glutinosa</i>), Buckthorn and Goldenrods.	Located along the rear properties that front Nash Road.	10, 11
TAGM5 Hedgerow	2.35 ha (1.20 ha)	Typical species include Eastern Cottonwoods (<i>Populus deltoides</i>), Weeping Willow (<i>Salix babylonica</i>), Red Pine (<i>Pinus strobus</i>) and Silver Maple (<i>Acer saccharinum</i>).	Located throughout the central portion of the Study Area.	12
MEMM4/THD Fresh-Moist Mixed Meadow/Deciduous Thicket	0.50 ha	Typical species include Green Ash, Willow sp., Common Buckthorn, Eastern White Pine (<i>Pinus strobus</i>), Eastern White Cedar (<i>Thuja occidentalis</i>), Scots Pine (<i>Pinus sylvestris</i>), and Black Locust (<i>Robinia pseudoacacia</i>). ¹	Located outside of the Property but within the Study Area, south of Nash Road.	N/A
Red-osier Dogwood Inclusion		Red-osier Dogwood, Green Ash, Willow sp. (<i>Salix sp.</i>), and Scots Pine.		
CVI_1 Transportation	0.99 ha	Roadways including Nash Road to the south and Hancock Road to the east of the Property within the Study Area.	Located along the eastern and southern borders of the Property within the Study Area.	N/A
OAGM4 Open Pasture	0.06 ha	N/A	N/A	N/A
OAGM1 Annual Row Crop	0.68 ha	N/A	Location outside of the Property to the east and south within the Study Area.	N/A

¹Descriptions of vegetation communities outside of the Property boundary but within the Study Area were compared against ELC mapping completed in previous EIS reports (Aquafor Beech Ltd. 2006, Dillon, 2020).

4.5 Botanical Inventory

A total of 116 botanical species were documented within the Study Area; 77 species were observed during the 2017 summer botanical surveys in association with the southern properties, and an additional 39 species were added to the list following the completion of 2018/2019 field investigations.

Of the 116 species, 61 are listed as *Secure* or *Apparently Secure* (i.e. SRank of S5 and/or S4) in the province. The outstanding 55 species are listed as non-native, status unknown or not suitable targets for conservation activities (i.e. SRank of SE, SU or SNA). Although none of the 116 species observed are considered SC and/or SCC, three are considered rare in Durham Region (i.e. Large Yellow Lady's-slipper (*Cypripedium parviflorum* var. *pubescens*), Canada Hawkweed (*Hieracium umbellatum*) and Hoary Willow (*Salix candida*). Hoary Willow was observed in association with the Fresh-Moist Mixed Meadow (MEMM4)/hedgerow (TAGM5), while Canada Hawkweed and Large Yellow Lady's-slipper were observed within the Industrial community (CVC_2) and hedgerow (TAGM5) within the Property, respectively.

The Co-efficient of Conservatism (CC) provides additional information on the nature of the vegetation communities within the Study Area. The CC values range from 0 to 10 and represent an estimated probability that a plant is likely to occur in a landscape that is relatively unaltered or is in a pre-settlement condition. For example, a CC of 0 is given to plants such as Manitoba Maple (*Acer negundo*) that demonstrate little fidelity to any remnant natural community (i.e. may be found almost anywhere). Similarly, a CC of 10 is applied to plants like Shrubby Cinquefoil (*Potentilla fruticosa*) that are almost always restricted to a pre-settlement remnant (i.e. high quality natural area). Introduced plants were not part of the pre-settlement flora, so no CC values have been applied to these species.

Of the 116 botanical species identified within the Study Area, three have a CC value of seven (7) or greater (i.e. Meadow Horsetail (*Equisetum pratense*), Canada Hawkweed and Hoary Willow). The mean CC value for the site is 3.01, indicating an altered landscape. This is typical of an urban environment as compared to naturally occurring environments. A full list of the botanical species observed within the Study Area has been included in **Appendix E**.

Potential impacts related to vegetation within the Study Area are included in **Section 7.0**.

4.6 Drainage Feature

During the October 30, 2019 agency site visit, the presence of a remnant drainage feature was confirmed (**Figure 3**). This feature directs flows westerly from Hancock Road along the northern half of the Cultural Thicket Swamp (SWT) towards an existing catchbasin located at the Tabb Avenue cul-de-sac (**Appendix D**; Photos 13 and 14). Anthropogenic disturbances were observed within the remnant feature (i.e. debris, garbage, etc.) with the potential to impact potential flows during spring freshet and/or significant rain events (**Appendix D**; Photos 15 and 16). The remnant drainage feature was assessed and determined to not have the potential to provide fish habitat, nor is it connected seasonally to direct fish habitat.

4.7 Natural Heritage Features

4.7.1 Wetlands

No evaluated wetlands were identified within the Study Area. The Harmony –Farewell Iroquois Beach Wetland Complex (PSW) is, however, located adjacent to the Study Area to the northwest. The Fresh-Moist Poplar Deciduous Forest and White Birch Poplar Mineral Deciduous Swamp Complex (FOD3 – SWM3) shown in **Figure 3** was mapped to be generally consistent with the wetland mapping included in the Aquafor Beech Ltd. 2006 EIS, as well as the Niblett 2012 Hancock Neighbourhood Design update.

Based on the October 30, 2019 agency site visit, the previous ELC mapping was revised to include a 0.48 ha cultural thicket swamp (SWT) along the rear properties of the existing lots that front Nash Road. The boundaries of this feature were confirmed by CLOCA during the site visit. Species observed within this community included, but were not limited to, Red-osier Dogwood, European Alder, Silver Maple, Willows (*Salix sp.*), Green Ash, Common Buckthorn and Goldenrods (*Solidago sp.*). Signs of previous anthropogenic disturbances were observed throughout this community (i.e. cleared areas, garbage/debris, etc.) during the site visit (**Appendix D**, Photos 15 and 16). Both CLOCA and the Municipality were supportive of the features removal in support of the proposed development, so long as the feature was compensated to the satisfaction of both CLOCA and the Municipality.

As previously indicated, the associated remnant drainage feature does not provide fish habitat and is not connected seasonally to direct fish habitat. Similarly, based on the field investigation results, the cultural thicket swamp does not support significant wildlife habitat and/or species at risk habitat. In addition, surface drainage is currently interrupted by the remnant drainage feature which directs flows to the existing catchbasin located at the Tabb Avenue cul-de-sac. The aforementioned substantiates and provides justification for the features removal with the understanding that it will be compensated for to the satisfaction of both CLOCA and the Municipality.

4.7.2 Woodlands

The woodland communities located within the northwestern portion of the Study Area are associated with contiguous woodland areas outside of the Study Area. For context, the contiguous woodland feature is designated by the Municipality in the OP as part of the Natural Heritage System (NHS), and associated with the Harmony-Farewell Iroquois Beach Wetland Complex PSW (Map D1, 2018).

Past reports previously identified portion of the Scotch Pine Coniferous Plantation (FOCM6-3) mapped ecosite to include areas of Fresh-Moist Poplar Deciduous Forest (FOD3) to exist within the Study Area (Aquafor Beech Ltd. 2006). In the past, the Fresh-Moist Poplar Deciduous Forest (FOD3) ecosite was mapped to extend from the northwest corner of the Property along the western border to the southwest corner beyond the Property, but within the Study Area (Aquafor Beech Ltd. 2006). Residential development (CVR_3) and vegetation clearing has since occurred west of the Study Area on Duval Street, narrowing the width of the existing forest in this area to less than 30 m. During ELC surveys, the area was described as sparsely treed and a prism sweep indicated a high level of past disturbance (Prism Factor of 2). Due to this narrowing and high level of disturbance, this area has been re-classified as a hedgerow (TAGM5) (**Figure 3**).

As outlined in the Natural Heritage Reference Manual (NHRM, MNRF 2010), for a woodland feature to be significant it must first meet minimum standards. If these minimum standards are met, it is then evaluated based on size criterion, ecological function criteria, and uncommon characteristics criteria. Woodlands that meet the minimum standard for any one of the criteria are considered significant. In accordance with the NHRM, the “contiguous woodland” feature meets criteria for significance as the contiguous woodland feature is located within the NHS, is associated with a PSW, and provides candidate SWH and potential SAR bat roosting habitat.

In the Municipality Official Plan (2017), significant woodland is defined as follows:

“an old growth woodland, or a woodland, greater than 4 ha located outside of settlement areas in the rural areas of the Municipality, or greater than 1 ha in settlement areas urban areas and Hamlets. Significance of woodlands within the Oak Ridges Moraine is determined by the Ministry of Natural Resources using evaluation procedures established by that Ministry, or by a study conducted in accordance with this Plan. “Significant Woodland” may also include plantations.”

In the Region’s Official Plan (2017), significant woodland is defined as follows:

“an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history.”

In accordance with the Municipal Official Plan and the Region’s Official Plan, the contiguous woodland meets criteria for significance.

4.7.2.1 Significant Woodland within Property Boundary

With respect to the significant woodland discussed above, the only portion within and/or directly adjacent to the Property Boundary is the Scotch Pine Plantation (FOCM6-3).

The canopy and sub-canopy of the plantation is dominated by Scotch Pine, with occasional to sparse occurrences of Norway Spruce (*Picea abies*), Wild Black Cherry (*Prunus serotina*) and Poplar species (*Populus balsamifera*, *Populus tremuloides*). Understorey vegetation primarily consisted of Common Buckthorn (*Rhamnus cathartica*) with occasional to sparse occurrences Chokecherry (*Prunus virginiana*), White Ash (*Fraxinus americana*), Black Walnut (*Juglans nigra*) Paper Birch (*Betula papyrifera*) and Poplar species. Groundcover vegetation consisted primarily of Dog-strangling Vine (*Vincetoxicum rossicum*), Common Buckthorn, Riverbank Grape (*Vitis riparia Michx*) and Goldenrod Species (*Solidago altissima*, *Solidago canadensis*). Other species present as occasional to sparse occurrences consisted of Bittersweet Nightshade (*Solanum dulcamara*), Red Currant (*Ribes rubrum*), Spinulose Wood Fern (*Dryopteris carthusiana*), and Starved Aster (*Symphyotrichum lateriflorum*) among others. Approximately 5% to 10% of mature Scotch Pine were observed to be in poor overall health mainly due to crown dieback and secondary branch failures. Additionally, the majority of the Scotch Pine observed had irregular shaped crowns and were growing in the warped/haphazard manner that is typical for the species in Ontario. Anthropomorphic disturbance within the woodland was also observed off-property to include a manicured fire pit area.

Non-native species comprised the majority of vegetation present within this community in terms of absolute vegetation cover. Several of these species are considered invasive in Ontario which includes: Scotch Pine; Common Buckthorn and Dog-strangling Vine. For a species considered to be invasive in Ontario, rankings have been assigned by Urban Forest Associates Inc. in partnership with the Ministry of Natural Resources and Forestry (MNRF) and are provided in the draft *Invasive Exotic Plant Species Rankings for Southern Ontario* (Urban Forest Associates Inc. *et al.*, 2014). Two species, Dog-strangling Vine and Common Buckthorn are rated as Category 1, which are “aggressive invasive exotic species that can dominate a site to exclude all other species and remain dominant on the site indefinitely” (Urban Forest Associates Inc. *et al.*, 2014). These two species were dominant in the understory and groundcover layer respectively. Additionally, Scotch Pine, which is the dominant overall tree species, is classified as a Category 2 species which are “exotic species that are highly invasive but tend to only dominate certain niches or do not spread rapidly from major concentrations” (Urban Forest Associates Inc. *et al.*, 2014). In this case Scotch Pine can dominate open forest stands and invade meadows, excluding other tree species establishment and natural succession, thereby reducing plant species richness and diversity overtime (Marinich and Powell, 2017).

Due to the persistent and aggressive nature of the invasive species associated with the Scotch Pine Plantation, it is highly probable they will continue to suppress the establishment of more desirable native vegetation, further suppressing the ecological integrity of the natural woodland communities associated with the contiguous significant woodland, in addition to the PSW. Removal of the Scotch Pine Plantation within the Property Boundary would serve to reduce the quantity of seed dispersing into un-infested adjacent habitats. Furthermore, other restoration methods such as stand conversion using thinning and tree plantings to support natural regeneration of the stand is likely to be hindered by the presence of other invasive species such as Common Buckthorn and Dog-strangling Vine, if not sufficiently managed. Refer to **Section 8.2 and 8.3** for proposed Compensation and Edge Management Plan in support of the features removal within the Property Boundary.

4.7.2.2

Proposed Natural Heritage System (Significant Woodland) Boundary Revision

The Municipality’s OP identifies several goals and policies with respect to Protecting the Natural Environment and Managing Natural Resources:

3.1.1 To protect and enhance the natural heritage system and its ecological integrity.

Removal of the Scotch Pine Plantation within the Property Boundary, given the Category 1 and 2 designations (Urban Forest Associates Inc. *et al.*, 2014) associated with Common Buckthorn, Dog-strangling Vine and Scotch Pine, respectively, and the proposed Compensation and Edge Management Plans identified in **Section 8.2**, supports the aforementioned goal.

Removal of the invasive species will serve as a mechanism to protect the existing natural vegetation communities associated with the NHS, while the proposed Compensation and Edge Management Plans will serve to enhance adjacent and offsite natural heritage systems.

3.1.2 To promote responsible stewardship of the natural heritage system and wise use of natural resources in order to provide long term and sustainable environmental, economic and social benefits.

Removal of the Category 1 and 2 invasive species within the Property Boundary supports the aforementioned goal. It is not unrealistic to assume that responsible planning and management (Category 1 and 2 species removals) of the NHS will result in long term and sustainable environmental, economic and social benefits.

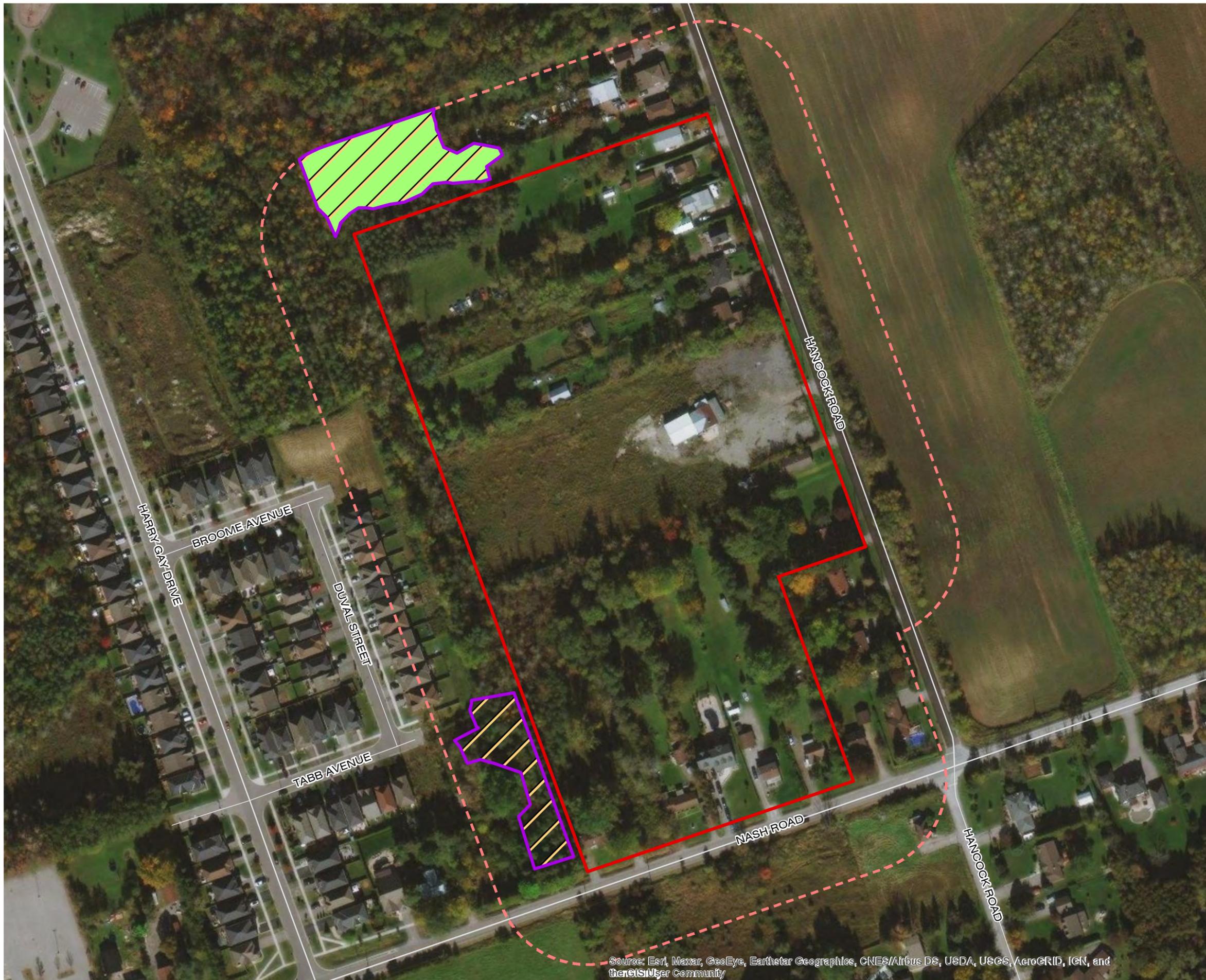
3.4.3 There are a number of other environmentally sensitive terrestrial features and areas, natural heritage features and hydrologically sensitive features and areas which, due to inadequate information or the nature of the feature or area, are not shown on Map D. These features are also important to the integrity of the natural heritage system and may be identified on a site-by-site basis for protection through the review of a development application or other studies.

The Scotch Pine Plantation within and adjacent to the Property Boundary is not included as part of the NHS illustrated in Map D1 of the Municipality's OP. In fact, the southwestern limits of the NHS illustrated in Map D1 takes into account the lot layout associated with Headgate's approved Draft Plan of Subdivision (S-C-2009-0001); which requires removal of nearly the entirety contiguous Scotch Pine Plantation adjacent to the Property. Consistent with Section 3.4.3 of the Municipality's OP, based on the information included in this EIS, the Category 1 and 2 species designations, in addition to the extent of contiguous vegetation removals associated with the adjacent Headgate approved Draft Plan of Subdivision, protection of the Scotch Pine Plantation within the Property Boundary is not supported.

3.4.4 As part of a development application, where site specific studies or updated information from the Province or Conservation Authority results in the refinements to the boundary of extent of a natural heritage feature and/or hydrologically sensitive feature, or its related vegetation protection zone, such refinement shall not require an amendment to this Plan.

Consistent with the aforementioned policy, the information collected in support of this EIS supports the refinement of the natural heritage feature (significant woodland) boundary.

Based on the information provided above, the proposed revised limits of the NHS (significant woodland) is illustrated in **Figure 4**.



TROLLEYBUS URBAN DEVELOPMENT INC.
HANACOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON

SIGNIFICANT NATURAL FEATURES
FIGURE 4

- Project Boundary
- Study Area(50m Setback)
- Significant Woodland**
- Revised Significant Woodland
- Significant Wildlife Habitat**
- Candidate Bat Maternal Roosting Habitat
- Candidate Special Concern and Rare Wildlife Species



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
STATUS: DRAFT
DATE: 2020-09-30

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

4.7.3 Significant Wildlife Habitat

The results of the field investigations as they apply to wildlife habitat are detailed below as well as illustrated on **Figure 4**. Based on the results of the 2017, 2018 and 2019 field investigations, and as defined in the Criterion Schedules for Ecoregion 6E (MNRF 2015), the following candidate significant wildlife habitat (SWH) has the potential to occur within the Study Area, outside of the Property Boundary:

- Bat Maternity Colonies
 - Confirming SWH for Bat Maternity Colonies requires that the habitat be evaluated following the methods outlined in the “*Bats and Bat Habitats: Guidelines for Wind Power Projects*”; of which the habitat is confirmed only in instances where colonies are observed to include >10 Big Brown Bats and >5 adult female Silver-haired Bats.
 - Based on Dillon’s extension experience evaluating candidate SWH for Bat Maternity Colonies across the province based on the aforementioned guideline, it is not unrealistic to assume that less than 10 Big Brown Bats and 5 adult female Silver-haired Bats would be observed during visual exit surveys (or any bats at all); particularly as it relates to the candidate habitat in the southwestern portion of the Study Area given its current state, the adjacent residential developments and their associated human disturbances.
 - Lastly, although the use of acoustic detectors paired with visual exit surveys would enable species identification, it does not allow interpretation between male and/or female species (e.g. female Silver-haired bats vs male Silver-haired Bat). Therefore, given that access to the habitats was not granted in support of field investigations, candidate SWH for Bat Maternity Colonies was identified solely on the basis of its ecological community (i.e. FOD).
- Special Concern and Rare Wildlife Species

The 2017 and 2018 field investigations were limited to ELC, breeding birds and botanical surveys where access was permitted (i.e. within the Property only). Of the aforementioned candidate SWH’s, none have the potential to occur within the Property based on the 2017, 2018, 2019 and 2021 field survey results. Refer to **Section 4.7.3.2** for the 2019 and 2021 snag/cavity survey results.

Refer to **Section 8.0** for mitigation measures to minimize and/or avoid impacting the aforementioned candidate habitats.

4.7.3.1 Breeding Bird Surveys

Two breeding bird surveys were conducted at two stations within the Study Area on June 7 and July 3 of 2018 (**Figure 3**). These surveys were completed to determine the presence/absence of SAR and/or SCC birds within the Study Area.

In total, 15 species were observed within the Study Area during point count surveys (**Table 3**). Singing males and the presence of individuals within suitable breeding habitat for several common native species were documented within the Study Area. All fifteen species observed are designated as *Secure* or *Very Secure* (i.e. SRank of S5 or S4, respectively) in the province.

A single SAR (Barn Swallow) was documented flying over point count 2 (**Figure 3**). Suitable nesting habitat may exist in association with adjacent residential and commercial lands. Evidence of breeding behaviour and nesting activities observed during field investigations are further described in **Section 4.8**.

Table 3: 2018 Breeding Bird Survey Results

Scientific Name	Common Name	Detection Distance (<50 m, >50 m or >100 m) ¹	SARA Status ²	ESA Status ³	SRank ⁴	Breeding Evidence ⁵
Point Count Station 1						
<i>Cardinalis cardinalis</i>	Northern Cardinal	<50 m	---	---	S5	S
<i>Carduelis tristis</i>	American Goldfinch	>50 m	---	---	S5B	S, F/O
<i>Corvus brachyrhynchos</i>	American Crow	>50 m	---	---	S5B	X, F/O
<i>Cyanocitta cristata</i>	Blue Jay	>50 m	---	---	S5	S
<i>Melospiza melodia</i>	Song Sparrow	<50 m	---	---	S5B	S
<i>Poecile atricapillus</i>	Black-capped Chickadee	<50 m	---	---	S5	H
<i>Sitta carolinensis</i>	White-breasted Nuthatch	>50 m	---	---	S5	H
<i>Troglodytes aedon</i>	House Wren	>50 m	---	---	S5B	H
<i>Turdus migratorius</i>	American Robin	<50 m	---	---	S5B	H,S
<i>Zenaid macroura</i>	Mourning Dove	>50 m	---	---	S5	H,S
Point Count Station 2						
<i>Cardinalis cardinalis</i>	Northern Cardinal	>100 m	---	---	S5	H,S
<i>Carduelis tristis</i>	American Goldfinch	<50 m	---	---	S5B	X, F/O
<i>Corvus brachyrhynchos</i>	American Crow	>50 m	---	---	S5B	X
<i>Hirundo rustica</i>	Barn Swallow	>100 m	THR	THR	S4B	X, F/O
<i>Icterus galbula</i>	Baltimore Oriole	<50 m	---	---	S4B	H,S
<i>Melospiza melodia</i>	Song Sparrow	<50 m	---	---	S5B	H,S
<i>Picoides pubescens</i>	Downy Woodpecker	>100 m	---	---	S5	H
<i>Poecile atricapillus</i>	Black-capped Chickadee	>50 m	---	---	S5	H
<i>Setophaga petechia</i>	Yellow Warbler	>50 m	---	---	S5B	S
<i>Troglodytes aedon</i>	House Wren	>100 m	---	---	S5B	H
<i>Turdus migratorius</i>	American Robin	>50 m	---	---	S5B	S
<i>Tyrannus tyrannus</i>	Eastern Kingbird	>100 m	---	---	S4B	H

¹Distance the specie was observed from the point count location. ²Federal status under SARA. ³Provincial status under the ESA.

⁴S-Rank is an indicator of commonness in the Province of Ontario. A scale between 1 and 5, with 5 being very common and 1 being the least common. ⁵ F/O = Flyover; H = Observed in suitable nesting habitat; S = Singing male; X = Observed.

4.7.3.2 Bat Maternity Roost Surveys

A single snag was observed within the portion of the Scotch Pine Plantation (FOCM6-3) along the western Property Boundary during the July 19, 2019 assessment, and October 30, 2019 assessment in association with the Cultural Thicket Swamp (SWT). Although the July 19 snag/cavity survey was not completed during the leaf-off season, given the species composition, openness of the habitat and the transect spacing, the methods employed were determined adequate. **Table 4** provides the information collected in association with the candidate bat roosting tree while **Figure 3** provides its location.

Table 4: 2019 Bat Maternity Roost Survey Results

Species	DBH	Decay Class	Cavities Present (Y/N)	Location of Cavities	Est. Height of Cavities	Photo (Appendix D)
Unknown	18.5 cm	5	Y (n= 2)	S	3 m & 4 m	17

Given the heights in which the cavities were observed, the fact that the snag was no longer upright (**Appendix D**; Photo 11), as well as the decay class assigned (snag classification), the snag was assessed as having low (if any) potential to support bat roosting.

An additional snag/cavity assessment was completed on February 27, 2021 in association with the Cultural Thicket Swamp. No habitat trees were identified during the survey.

Based on these result, candidate Bat Maternity Colony habitat is restricted to the natural features outside of the Property.

4.8 Endangered, Threatened, and Rare Species

The following SAR listed as *Endangered* and *Threatened* under the ESA were recorded within the 1 km NHIC squares that encompass the Study Area:

Endangered

- Rusty-patched Bumble Bee (*Bombus affinis*)
- Butternut (*Juglans cinerea*)
- Eastern Small-footed Myotis (*Myotis leibii*)
- Little Brown Myotis (*Myotis lucifugus*)
- Northern Myotis (*Myotis septentrionalis*)
- Tri-colored Bat (*Perimyotis subflavus*)

Threatened

- Bobolink (*Dolichonyx oryzivorus*)
- Eastern Meadowlark (*Sturnella magna*)
- Bank Swallow (*Riparia riparia*)
- Barn Swallow (*Hirundo rustica*)
- Chimney Swift (*Chaetura pelagica*)

The following species listed as *Special Concern* under the ESA were also identified in the NHIC search:

- Monarch (*Danaus plexippus*)
- Peregrine Falcon (*Falco peregrinus*)
- Bald Eagle (*Haliaeetus leucocephalus*)
- Wood Thrush (*Hylocichla mustelina*)
- Eastern Wood-Pewee (*Contopus virens*)
- Snapping Turtle (*Chelydra serpentina*)

During the 2017 site visit, and as presented in the SAR Screening Report (Dillon 2017), two (2) barn swallow nests were observed within the Study Area (**Appendix D**; Photos 9 and 10). The nests were observed in association with the automotive recycling facility (i.e. 3090 Hancock Road). Breeding or nesting behaviour by Barn Swallows was not observed during 2018 field investigations. No other SAR was observed on site in 2017, 2018 or 2019.

Based on the 2019 bat maternity roost surveys, a single snag tree was observed within the Scotch Pine Plantation (FOCM6-3) along the western Property Boundary; the snag was assessed as having low potential (if any) to support roosting bats. Bat Maternal Roost habitat may, however, exist within the natural features located outside of the Property but within the Study Area.

Potential direct and indirect impacts to SAR and SAR habitat are described in **Section 7.1.4**.

4.9 Incidental Wildlife

Eleven wildlife species were observed incidentally within the Study Area. These species include Monarch (*Danaus plexippus*), Twelve-spotted Skimmer (*Libellula pulchella*), American Robin (*Turdus migratorius*), Morning Dove (*Zenaida macroura*), Blue Jay (*Cyanocitta cristata*), Northern Cardinal (*Cardinalis cardinalis*), American Goldfinch (*Spinus tristis*), Black-capped Chickadee (*Poecile atricapillus*), Eastern Chipmunk (*Tamias striatus*) and a Star-Nosed Mole (*Condylura cristata*).

With the exception of Monarch, the remaining 10 species are listed as *Secure* within the province (i.e. SRank of S5). Monarch is listed as *Special Concern* under the ESA as well as *Very Rare* during the non-breeding period (i.e. SRank of S2N) to *Common* during the breeding period (i.e. SRank of S4B) within the province.

5.0 Ecological Function

Natural features within and adjacent to the Study Area were assessed to determine their ecological function. At the larger landscape scale, the Study Area is designated as 'Living Area' by the Region and as 'Urban Residential' by the Municipality. As the majority of the Study Area, including the adjacent lands, is comprised of urban land uses, the potential ecological functions within the Study Area are limited. In addition, the lands directly northwest of the proposed development, of which a significant portion of its associated natural features have been approved for removal, are associated with the 2009 Draft Plan of Subdivision (S-C-2009-0001; Headgate Group Inc.). The aforementioned Draft Plan of Subdivision was subsequently approved in 2011 and revised in 2014 to incorporate the results from the Niblett 2012 Hancock Neighbourhood Design Plan Update. Although updated information may be required by the Headgate Group Inc. in support of lot registration, the proposed Trolleybus development conforms with the approved Draft Plan of Subdivision.

The meadow, hedgerows, Scotch Pine Plantation and Cultural Thicket Swamp within the Property provide limited ecological function, though they provide a potential ecological linkage opportunity for species with a high mobility to the larger woodland feature/Natural Heritage System to the north-northwest of the Property, as well as rare species for Durham Region (e.g. Hoary Willow, Large Yellow Lady's-slipper in association with MEMM4, TAGM5 and CVC_2). This ecological linkage is, however, minimal given that the larger woodland feature is bisected by a road and residential homes to the north (e.g. George Reynolds Drive). Though limited, these features provide cover, foraging, refuge, and nesting habitat for terrestrial wildlife. Similarly, the aforementioned features, including the meadow within the Study Area were observed to be degraded given their current level of anthropogenic disturbances (e.g. surrounding residential areas and roads, presence of debris, garbage, etc.) as well as the presence of invasive species (e.g. Common Buckthorn, Dog-strangling Vine, Scotch Pine). Similarly, no SWH was identified within the Property based on the 2017, 2018, 2019 field investigation results.

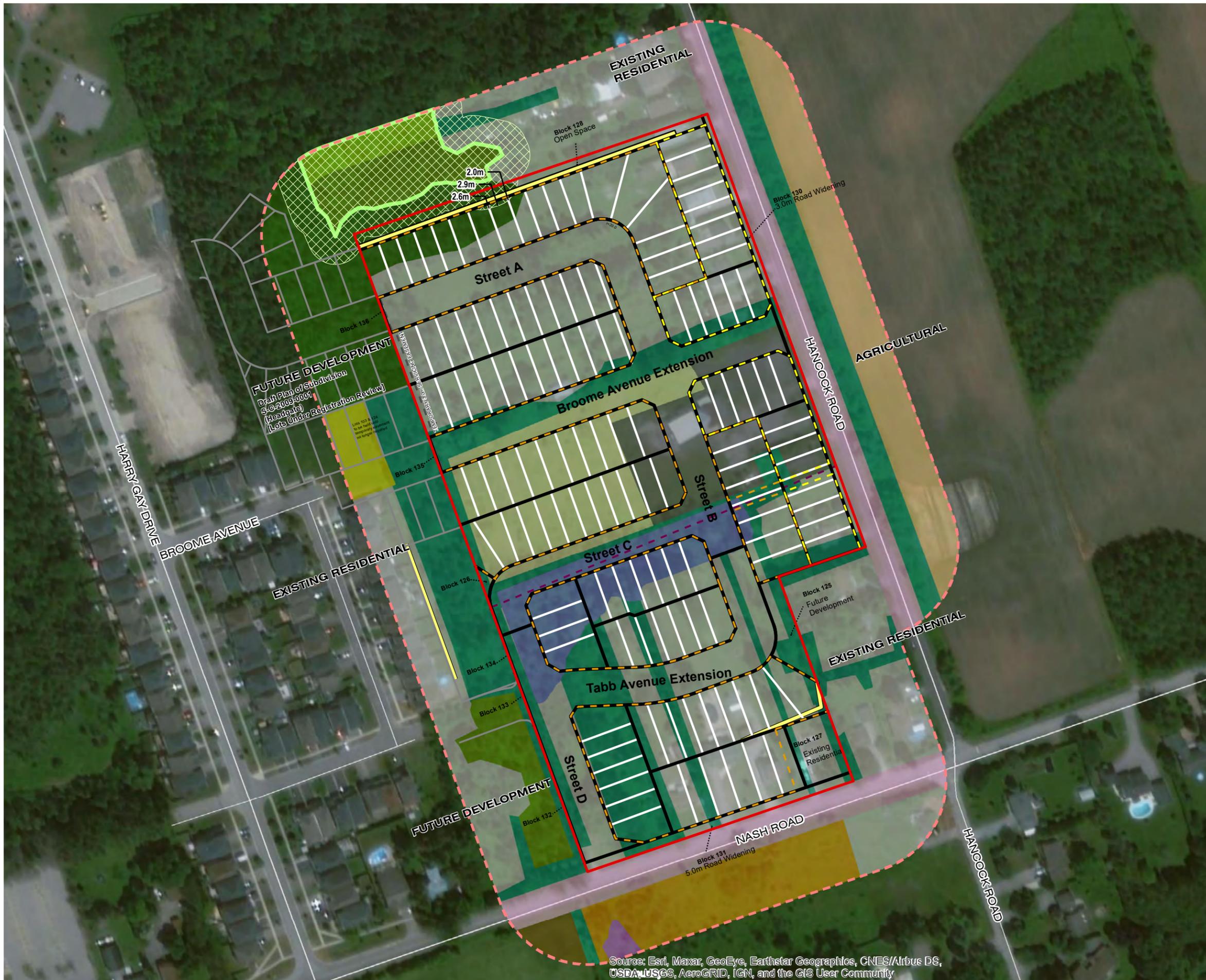
Due to the surrounding urbanized area, the adjacent residential areas and roads, as well as the disturbed nature of the Study Area, the Property provides limited habitat function for urban tolerant native flora and fauna. For this reason, and based on the results of field investigations, it is not unreasonable to assume that the removal of hedgerows, portion of the Scotch Pine Plantation, cultural thicket swamp, meadows and isolated trees within the Property will not have a negative impact on the overall ecological function of the adjacent natural features.

6.0 Description of the Proposed Development

The proposed development is for a residential development of 6.67 ha referred to as Hancock Neighbourhood Northwest (**Figure 5**). Currently, the proposed development consists of 114 single residential units, as well as 26 semi-detached residential units. The layout of the single and semi-detached residential units are shown on **Figure 5**.

As previously mentioned, the lands directly west of the proposed development are associated with an approved Draft Plan of Subdivision (S-C-2009-0001; Headgate Group Inc.) which incorporated the results from the Niblett 2012 Hancock Neighbourhood Design Plan Update. The proposed development illustrated in **Figure 5** conforms with Headgate's development plan and includes the extension of Broome Avenue, Tabb Avenue and Street A within the proposed development area.

The associated potential impacts of the development and the mitigation measures are discussed in **Sections 7.0** and **8.0**.



TROLLEYBUS URBAN DEVELOPMENT INC.
HANACOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON

PROPOSED SITE PLAN
FIGURE 5

- Project Boundary
- Study Area(50m Setback)
- Site Plan
- Proposed Lot Line
- Proposed Boundary
- Proposed Residential Detached
- Proposed Town House
- Future Development
- Drainage Swale (3m)
- Significant Woodland**
- Revised Significant Woodland Boundary
- Vegetation Protection Zone Buffer (15m)
- Ecological Land Classification**
- SWT: Cultural Thicket Swamp
- CVI_1: Transportation
- CVC_2: Industrial
- CVR_3: Residential
- FOCM6-3: Scotch Pine Coniferous Plantation
- FOD3 - SWM3: Fresh Moist Poplar Deciduous
- Forest and White Birch Poplar Mineral Deciduous Swamp Complex
- FOD8-1: Fresh Moist Poplar Deciduous Forest
- MEMM3: Dry-Fresh Mixed Meadow
- MEMM4: Fresh-Moist Mixed Meadow
- MEMM4/THD: Fresh-Moist Mixed Meadow/Deciduous Thicket
- OAGM1: Annual Row Crop
- OAGM4: Open Pasture
- TAGM5: Hedgerow
- Red-osier Dogwood Inclusion
- Remnant Drainage Feature



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
STATUS: DRAFT
DATE: 2021-03-17

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

7.0 Impact Identification and Analysis

7.1 Direct Impacts

Direct impacts are those that are immediately evident as a result of the development. Typically, the potential adverse effects of direct impacts are most evident during the site preparation and construction phase of a development. Potential direct impacts of the proposed residential development include the following:

- Tree and vegetation removal
- Diversion of surface water flows
- Erosion and sedimentation into natural features
- Potential impacts to SAR habitat
- Loss of/disturbance to significant wildlife habitat and wildlife in general

The proposed development concept plan is included as an overlay on the ELC results to visually represent the direct impacts from the proposed development (**Figure 5**).

7.1.1 Tree and Vegetation Removal

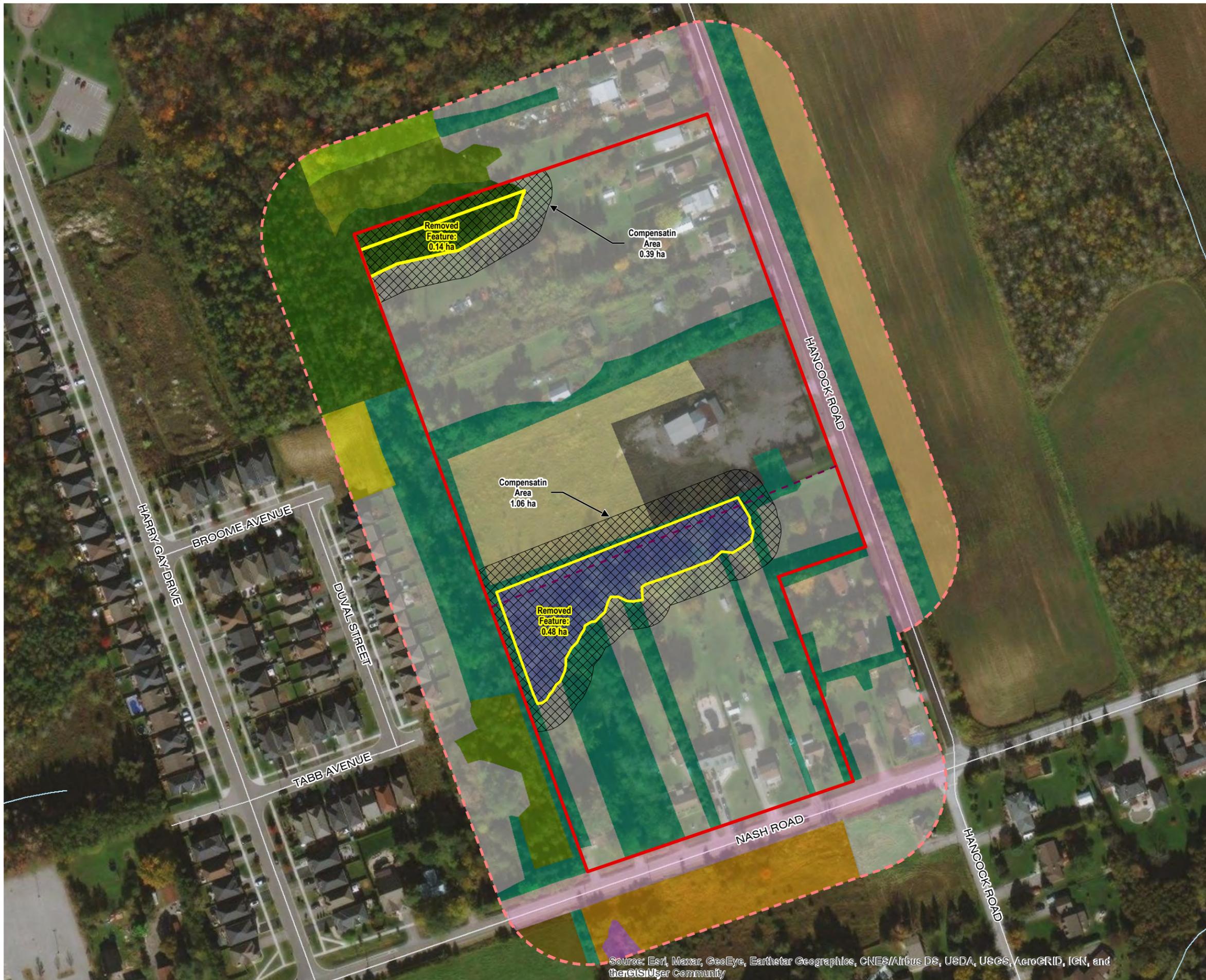
Based on the concept plan presented in **Figure 5**, construction of the proposed development will require removal of the Scotch Pine Plantation, the Cultural Thicket Swamp, Hedgerows, isolated trees and vegetation cover within the Property Boundary, followed by the stripping of topsoil. Based on the botanical inventory results, three botanical species rare to Durham Region were identified in association with the Fresh-Moist Mixed Meadow (MEMM4), Hedgerow (TAGM5) and the Industrial Site (CVC_2). The aforementioned areas currently provide limited ecological function and are likely to result in minimal habitat loss. In advance of vegetation removal, a botanical assessment will be completed within the aforementioned communities in order confirm the locations of the three species rare to Durham Region for subsequent transplanting in an area approved by CLOCA.

The Scotch Pine Plantation (FOCM6-3; 0.21 ha) within the Property, as well as the Cultural Thicket Swamp (SWT; 0.48 ha) require removal in support of the proposed development. Although previous development plans required removal of only 0.14 ha of the 0.21 ha of Scotch Pine Plantation (**Figure 6**), the additional 0.07 ha of Scotch Pine removal is required to accommodate the Municipality's request that no infiltration galleries (drainage swales) are to be included on private property. Only one suitable location (Block 128; Open Space) remained within the Property Boundary to accommodate the drainage swale (**Figure 5**). The proposed drainage swale location was discussed during a February 12, 2021 conference call with CLOCA, the Municipality and the Trolleybus consultant team present. During the call it was acknowledged by Trolleybus's engineer that the entirety of the remaining 0.07 ha of Scotch Pine Plantation would require removal in support of the construction of the infiltration trench (e.g. grading, equipment access needs, etc.).

In support of the Municipality's request, CLOCA expressed that they would view favourably of the 0.07 ha of Scotch Pine removal within Block 128 so long as an Edge Management Plan was developed and that an overall net gain could be demonstrated. Of the 0.07 ha of Scotch Pine removal in support of the drainage swale, 0.02 ha is considered permanent (i.e. 3 m width which includes the drainage swale and access requirements, will not be restored), while the remaining 0.05 ha will be replanted and enhanced in accordance with the Edge Management Plan (**Section 8.3**).

Justification for the removal of the Scotch Pine Plantation is provided in **Section 4.7.2.1 and 4.7.2.2**. Removal of the Cultural Thicket Swamp (SWT) was approved in principal by CLOCA and the Municipality during the October 30, 2019 agency site visit so long as the compensation location and compensation area requirements identified by CLOCA were met to the satisfaction of CLOCA. Refer to **Section 4.7.1** for justification of the Cultural Thicket Swamp (SWT) removal, and **Sections 8.2 and 8.3** for the proposed Compensation and Edge Management Plan in support of the aforementioned vegetation removals, respectively.

In support of the vegetation removals described above, MECP will be consulted in support of permitting and/or approvals under the ESA; or lack thereof.



TROLLEYBUS URBAN DEVELOPMENT INC.
HANACOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON

COMPENSATION REMOVAL AREAS
FIGURE 6

- Project Boundary
 - Study Area(50m Setback)
 - Watercourse (MNRF)
 - Features to be Removed (0.62 ha)
 - Total Compensatin Area (1.45 ha)
- Ecological Land Clasification
- SWT: Cultural Thicket Swamp
 - CVI_1: Transportation
 - CVC_2: Industrial
 - CVR_3: Residential
 - FOCM6-3: Scotch Pine Coniferous Plantation
 - FOD3 - SWM3: Fresh Moist Poplar Deciduous Forest and White Birch Poplar Mineral Deciduous Swamp Complex
 - FOD3: Fresh Moist Poplar Deciduous Forest
 - MEMM3: Dry-Fresh Mixed Meadow
 - MEMM4: Fresh-Moist Mixed Meadow
 - MEMM4/THD: Fresh-Moist Mixed Medow/Deciduous Thicket
 - OAGM1: Annual Row Crop
 - OAGM4: Open Pasture
 - TAGM5: Hedgerow
 - Red-osier Dogwood Inclusion
 - Remnant Drainage Feature



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, CLOCA

MAP CREATED BY: LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
STATUS: DRAFT
DATE: 2020-09-30

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

7.1.2 Diversion of Surface Water Flows

There are variations in topographical relief throughout the Study Area and intermittent pools of water may form within drains as a result. Lands within the Study Area currently drain via overland flow pathways (Candevcon Limited, 2021; 2019). The direction of surface drainage overland flow is predominantly towards the west from Hancock Road across the Study Area and towards the Headgate Developments property and Harry Gay Drive. There is also a small remnant drainage feature directing flows westerly from the Hancock Road ditch along the northern half of the Cultural Thicket Swamp (SWT) towards an existing catchbasin located at the Tabb Avenue cul-de-sac (**Appendix D**; Photo 20). The flow from the drainage feature, along with any overland flow, are then captured and conveyed via storm sewer to the existing Macourtice Stormwater Management (SWM) facility, discharging at Moyse Drive and Courtice Road.

The proposed development will seek to maintain, to the extent practical, the current overland flow conditions. The remnant drainage feature will be replaced with a storm sewer system that captures and conveys minor system flows (5 year storm event) towards the Macourtice SWM facility. The proposed drainage at the Broome Avenue outlet will result in an increase in flows to the storm sewer (Candevcon Limited, 2021). Candevcon Limited has demonstrated that the existing storm sewer system has capacity to accommodate the additional drainage (Candevcon Limited, 2021). The internal road network of the proposed development will have sufficient capacity to accommodate greater flows from 5-year storm event and up to 100-year storm event and convey them to the existing Macourtice SWM facility. The Macourtice SWM facility has sufficient capacity to accommodate the increases in runoff and provide the necessary stormwater management quantity and quality controls for the development. It is anticipated that no major alterations will be made to existing drainage; therefore, the direct impact of the development on the diversion of surface water flows is expected to be minimal.

7.1.3 Erosion and Sedimentation into Natural Features

Due to the potential reduction in infiltration rates post-development, there is potential for the woodland communities outside of the Property Boundary to be impacted as a result of the development if construction best management practices are not implemented. Potential impacts to the woodland may include, but are not limited to:

- Disturbance to or loss of, additional vegetation beyond that proposed in support of the proposed development due to the deposition of dust and/or overland mobilization of soil.

Refer to **Section 8.0** for mitigation measures related to erosion and sedimentation within the Study Area.

7.1.4 Species at Risk

Two (2) Barn Swallow nests were observed to be inactive in both 2017 and 2018 in associated with the automotive recycling facility infrastructure (i.e. 3090 Hancock Road) within the Property. Removal of these buildings is required in support of the proposed development, and as a result the removal of the nests may be registered through the MNRF registry process under Section 23.5 of O. Reg 242/08 so long as the conditions in the regulation are followed.

Although the Property was previously assessed as having limited ecological function, there is potential for the treed communities to provide potential SAR bat roosting habitat. As currently proposed, in addition to hedgerows and meadows, the proposed development will result in the removal of 0.21 ha from the Scotch Pine Plantation and the 0.48 ha Cultural Thicket Swamp within the Property.

As a result, the MECP will be consulted to determine whether a permit under the ESA is required for tree removal associated with the plantation/thicket swamp and/or whether the mitigation measures proposed for tree removal (e.g. removal to occur during the inactive bat periods, etc.) are acceptable to avoid potential impacts to SAR bats as well as ESA permitting.

Mitigation measures to avoid impacts to Barn Swallow and SAR bats as a result of building and tree removals are discussed in **Section 8.0**.

7.1.5 Loss of and/or Disturbance to Significant Wildlife Habitat

Although SWH was not confirmed within the Property, the potential for candidate Bat Maternity Colonies and Special Concern and Rare Wildlife Species SWH was identified within the Study Area to the west and northwest. The proposed development will not have a direct impact (i.e. tree/vegetation removal) on the candidate SWHs identified within the Study Area.

There is, however, potential for flora and fauna to be impacted by vegetation clearing and other activities within the proposed development area (**Figure 5**). Habitat for flora and fauna may be impacted by construction in the following ways:

- Displacement, injury, or death resulting from contact with heavy equipment during clearing and grading activities
- Disturbance to wildlife as a result of noise associated with construction activities, particularly during breeding periods
- Loss of general wildlife habitat

Accordingly, wildlife impact mitigation measures have been recommended for the proposed development and are included in **Section 8.0**.

7.2 Indirect Impacts

Indirect impacts are those that do not always manifest in the core development area, but in the lands adjacent to the development. Indirect impacts can begin in the construction phase; however, they can continue post-construction. Indirect impacts include increased anthropogenic disturbance, colonization of exotic and invasive species in disturbed areas, as well as potential hydrogeological impacts on the adjacent PSW in instances where mitigation measures are not implemented.

7.2.1 Anthropogenic disturbance

Disturbance to local wildlife due to indirect impacts on the lands adjacent to the proposed development could result if left unmitigated. Noise, light, vibration and human presence are indirect impacts that can adversely influence the population size and breeding success of local wildlife. These effects are more pronounced when new development is introduced in non-disturbed areas.

However, lands within the development area are already disturbed due to the existing land uses (e.g. residential dwellings and lot management activities, automotive recycling facility, etc.). The Scotch Pine Plantation within the Property was found to be significantly impacted/impaired due to the presence of invasive species (e.g. Common Buckthorn, Dog-strangling Vine, Scotch Pine) and past vegetation clearing of adjacent residential and commercial land uses.

7.2.2 Colonization of Non-native and/or Invasive Species

Physical site disturbance may increase the likelihood that non-native and/or invasive flora species will be introduced to the surrounding vegetation communities. Invasive flora can establish in disturbed sites and can encroach onto adjacent undisturbed lands more efficiently than native flora. This type of colonization is currently occurring within the hedgerows (i.e. Common Buckthorn) and the Scotch Pine Plantation (i.e. Common Buckthorn, Dog-strangling Vine, Scotch Pine). In order to maximize ecological function, removal of invasive species paired with planting of native tree and shrub species is recommended. This is consistent with the goals outlined in Section 3.1 of the Municipality's OP.

Mitigation measures related to control of invasive species are addressed in **Section 8.0**.

7.2.3 Hydrological Impacts on the Harmony-Farewell Iroquois Beach Wetland Complex

The Property is located approximately 64 m northwest of the Harmony-Farewell Iroquois Beach Wetland Complex (PSW). As identified in the Preliminary Hydrogeological Site Assessment for the proposed development, prepared by GeoPro Consulting Limited (GeoPro) and dated August 8 2020, the PSW is located within the zone of influence for temporary dewatering activities; as a result, temporary impacts on the PSW are anticipated.

Temporary dewatering is required during development and is anticipated to lower the water level to at least 1 m below the excavation base to achieve dry work conditions for the excavation and installation. Preliminary long-term dewatering or under-slab drainage is also required considering the high groundwater levels relative to the proposed residential basements (GeoPro, 2020). As a result, GeoPro recommends that either the foundations be designed to be waterproof and to resist hydrostatic uplift, or a sub-slab drainage system of foundation drainage/weeping tile system in conjunction with a perimeter drainage system should be installed for long-term control of groundwater.

Mitigation measures related to hydrological impacts on the PSW are addressed in **Section 8.0**.

8.0 Mitigation Measures

Mitigation involves the avoidance or minimization of potential developmental impacts through good design, construction practices and/or restoration enhancement activities. The feasibility of mitigation options has been evaluated based on the natural features within and adjacent to the Study Area. The impact assessment highlighted five (5) potential direct impacts which included tree and vegetation removal, diversion of surface water flows, erosion and sedimentation of natural features, potential impacts to SAR habitat, and potential disturbance to wildlife and wildlife habitat.

A variety of mitigation techniques can be used to minimize or eliminate the above-mentioned impacts. These measures include natural heritage feature buffers, enhancement of potential buffer and/or off site areas through a Landscaping and Compensation Plan, a Stormwater Management Plan, Erosion and Sediment Control (ESC) Plan, Wildlife Plan and an Environmental Monitoring Plan. Each of the aforementioned mitigation measures are introduced below. In addition to the aforementioned, mitigation measures have also been provided as a mechanism to minimize potential indirect hydrological impacts on the adjacent PSW.

Detailed mitigation measures will be finalized in consultation with the municipality, the Region and CLOCA as part of the detailed design stage.

8.1 Natural Heritage Feature Buffers

The role of a buffer is to protect important natural heritage features from the adverse effects of nearby development. Results of the ELC mapping completed during 2018 field investigations confirmed a portion of the Scotch Pine Plantation to be within the Property limits. Similarly, field investigations confirmed the presence of a Scotch Pine Plantation and Fresh Moist Poplar Deciduous Forest directly adjacent to the western Property limits. Given these communities are associated with Future Developments, portions of which are associated with an approved Draft Plan of Subdivision, development buffers have not been applied to the western Property Boundary in recognition of the approved and expected impacts on these features. This is consistent with the findings included in the September 12, 2006 EIS completed for the adjacent property (Aquafor Beech Limited, 2006), whereas only development buffers associated with the PSW were recommended. When taking into consideration the existing approved Draft Plan of Subdivision and its associated natural vegetation removal requirements, a holistic landscape level planning assessment, and the EIS results included herein, providing development buffers to the adjacent Scotch Pine Plantation and Fresh Moist Poplar Deciduous Forest is not supported. This is also consistent with the March 31, 2014 Headgate Group Inc. council report (#PSD-019-14) which states the following:

“The development of the proposed Draft Plan of Subdivision will involve clearing of vegetation south of the PSW and buffer. The EIS identifies the lands to be cleared as largely a conifer plantation/cultural thicket and, although contiguous to the PSW/Woodland, was not identified for protection.”

Through the registration of the Plan of Subdivision to the south, a tree preservation plan was prepared for the subject lands as well. The Tree preservation plan found that lands outside the protected PSW and buffer area were a low constraint to development and that given the required grading and servicing of the site, did not identify any trees that could be protected within the proposed Draft Plan of Subdivision”

Sections 4.7.2.1 and 4.7.2.2 provide justification for the removal of the of Scotch Pine Plantation within the Property Boundary, as well as the proposed boundary refinements associated with the significant woodland (NHS) per Section 3.4.4 of the Municipality’s OP. Section 3.4.4 also allows for refinements to vegetation protection zones in instances where they can be substantiated based on site specific studies (e.g. EIS), while Table 3.1 in the Municipality’s OP provides the Minimum Vegetation Protection Zones (VPZ). Based on the proposed significant woodland boundary refinement, the 15 metre VPZ includes minor encroachment into 3 lots that front onto Street A for a total of 0.004 ha, as well as 0.01 ha in association with the drainage swale, for a total of 0.014 ha of encroachment (**Figure 5**). Compensation in support of the 0.14 ha of Scotch Pine Plantation and 0.48 ha of Cultural Thicket Swamp removal associated with the lotting fabric is outlined below in **Section 8.2**. Similarly, an Edge Management Plan has been prepared in support the 0.07 ha of Scotch Pine Plantation removal to accommodate the drainage swale. The Edge Management Plan includes re-vegetating 0.05 ha of the 0.07 ha of Scotch Pine Plantation removal area, as well as enhancing the revised significant woodland in support of achieving an overall net ecological gain (**Section 8.3**). The 0.05 ha of re-vegetated area will maintain a vegetation separation between the proposed development and the significant woodland. In addition, rear yard fences for the lots that front Street A will prevent encroachment beyond the lot fabric. The proposed VPZ encroachments are consistent with Section 3.4.17 of the Municipality’s OP in that there will be no net loss on the total area of VPZ.

Given the presence of Hoary Willow, Canada Hawkweed and Large Yellow Lady’s-slipper (i.e. rare in Durham Region), the Hedgerows (TAGM5), the Fresh-Moist Mixed Meadow (MEMM4) and the Industrial community (CVC_2) within the Property will be assessed prior to vegetation removal activities to confirm and flag the locations of the aforementioned rare species. As a mechanism to avoid impacting these species, identified species will be transplanted in location(s) approved by CLOCA.

8.2 Compensation – Scotch Pine Plantation and Cultural Thicket Swamp

The Compensation Plan outlined in this section remains unchanged since the September 2020 EIS Update (submitted in November 2020).

With exception to the drainage swale, the proposed development will require the removal of select trees, shrubs, wildflowers, etc., including 0.14 ha of Scotch Pine Plantation and 0.48 ha of Cultural Thicket Swamp (**Figure 6**). As a result, a compensation is required to off-set proposed vegetation removals. Compensation plantings for trees are generally based on the number of removals required to facilitate construction of the development. The exact number of compensation plantings and locations is generally determined in consultation with the Municipality and CLOCA.

However, during the October 30, 2019 agency site visit CLOCA confirmed that the area of compensation includes the area of the feature itself, as well as a 15 m feature buffer (**Figure 6**). For the purposes of determining the total compensation area, the 15 m buffer was applied only to the area within the Property.

The preliminary proposed plantings may include:

- A mix of deciduous and coniferous trees and shrubs throughout the proposed compensation/enhancement area
- Sodding within the development area
- A native seed mix recommended by suppliers for potential use within the proposed compensation/enhancement area

The following monitoring and maintenance measures are recommended for the proposed compensation/enhancement area:

- Removal of invasive tree and shrub species, where applicable
- Watering and weeding of newly planted areas as required for proper establishment of plantings
- Replacement of dead material from previous year's planting

Collectively, the removal of 0.14 ha of Scotch Pine Plantation and 0.48 ha of Cultural Thicket Swamp have a combined compensation area of 1.45 ha. In support of the goals outlined under Section 3.1 of the Municipality's OP, Trolleybus has identified a proposed compensation/enhancement area which would enhance an existing NHS with associations to a PSW (**Figure 7**). The proposed area is located off Hancock Road approximately 715 m northwest of the proposed development, is generally maintained / trimmed throughout the year (Pers. communication with landowner), and would enhance an existing significant woodland.

The dominant soil associated with the proposed compensation/enhancement area was assessed as very fine silty sand with mottles occurring at 28 cm and carbonates starting below 20 cm. The soil type combined with the presence and location of mottles within the soil profile indicate a moist moisture regime. This is further supported by the presence of wetland species such as Blue Vervain (*Verbena hastata*), Swamp Milkweed (*Asclepias incarnata*), Nodding Bulrush (*Scirpus pendulus*) and Lance-leaved Aster (*Symphotrichum lanceolatum*) which were present in low-lying depressions within the overall moist meadow community.



TROLLEYBUS URBAN DEVELOPMENT INC.
 HANACOCK NEIGHBOURHOOD NORTHWEST,
 COURTICE, ON

**PROPOSED COMPENSATION/
 ENHANCEMENT AREA**
 FIGURE 7

- Compensation/Enhancement Area (1.45 ha)
 - Provincially Significant Wetland (MNR)
 - Water Body
 - Ecological Land Classification**
- FOMM7-2: Fresh - Moist White Cedar - Hardwood Mixed Forest
 MEMM4: Fresh - Moist Mixed Meadow
 WOCM2: Fresh - Moist Coniferous Woodland

Small pockets of wetland vegetation in depressions throughout area but not greater than 50% of overall community.

Naturalized pond filled with Cattails. Shallow water present.



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR

MAP CREATED BY: LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
 STATUS: DRAFT
 DATE: 2020-09-30

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

8.3 Edge Management Plan

This Edge Management Plan was prepared subsequent to the February 12, 2021 conference call with CLOCA, the Municipality and the Trolleybus project team in which the proposed location of the drainage swale was discussed to accommodate the Municipality's request that drainage swales are not to be included on private property. During the conference call CLOCA expressed that they would view favourably of the 0.07 ha of Scotch Pine removal within Block 128 so long as an Edge Management Plan was developed and that an overall net gain could be demonstrated.

In support of the goals outlined under Section 3.1 of the Municipality's OP, an Edge Management Plan has been prepared in support of the 0.07 ha of Scotch Pine Plantation removal to accommodate the drainage swale as a mechanism to achieve a net ecological gain (Dillon, 2021; **Appendix G**). This net ecological gain will be achieved through a combination of invasive species management, and natural feature enhancements within and outside of the Property limits. The Edge Management Plan details the area and extent of edge management, how the edge management work will be completed, timing for the work, potential impacts from clearing activities, as well as protection measures, monitoring and a list of species recommended for restoration/enhancement plantings.

The 0.07 ha of Scotch Pine Plantation removal represents 86 m of linear edge within the Property, and overlaps entirely with the total compensation area (i.e. 1.45 ha) outlined above in **Section 8.2** in support of the 0.14 ha of Scotch Pine Plantation removal associated with the lotting plan. As a component of the net ecological gain, invasive species removals (i.e. Common Buckthorn, Dog-Strangling Vine and Scotch Pine) will be conducted in the identified edge management area (refer to Appendix B in **Appendix G**). Of the 0.07 ha of removal, 0.05 ha will be replanted with native species as a mechanism to increase the native species diversity and ecological integrity in the area. Lastly, as an additional measure to substantiate the net ecological gain, the most eastern limits of the revised significant woodland, outside of the Property Boundary, will be enhanced to include an additional 0.04 ha of native plantings. The additional 0.04 ha will have the effect of increasing the existing linear edge within the edge management area from 116 m to 138 m. In addition, given that only 0.02 ha of the 0.07 ha of Scotch Pine removal is associated with the drainage swale (i.e. infrastructure), the total area to be replanted / enhanced (0.09 ha) represents a net ecological gain ratio of 4.5:1 (0.09 ha of native plantings/enhancements : 0.02 ha of permanent vegetation removal).

The following is recommended with regards to the timing of vegetation clearing and site preparation that should precede clearing:

- Vegetation removal should not take place during the established core local breeding bird season, April 1 to August 31, as per the Migratory Birds Convention Act, 1994. If vegetation clearing must occur during this season, a qualified biologist will conduct nest searches prior to clearing. If a migratory bird nest is found, work will cease in the area of the nest until it has been determined by a qualified biologist that the young have fledged the nest or the nest is deemed inactive.

- Notwithstanding the aforementioned, although no snag/cavity trees were identified within the portions of the Scotch Pine Plantation within the Property, MECP is to be consulted to determine whether a permit under the ESA is required for tree removal associated with the Scotch Pine Plantation.

Best management practices, control measures and restoration guidance outlined in the following Ontario Invasive Plant Council documents (hyperlinked) be reviewed and implemented with respect to the removal of invasive species (i.e. Scotch Pine, Common Buckthorn, Dog-strangling Vine):

- [Scots Pine \(*Pinus sylvestris*\): Best Management Practices in Ontario.](#)
- [Invasive Common \(European\) Buckthorn \(*Rhamnus cathartica*\): Best Management Practices in Ontario.](#)
- [Invasive Dog-strangling Vine \(*Vincetoxium rossicum*\): Best Management Practices.](#)

The following recommendations are provided with respect to tree protection during construction, servicing of the site and various earthworks:

- An Erosion and Sediment Control (ESC) Plan should be developed prior to earthworks and other construction activities. This should include silt installed along the proposed new edge, in the identified edge management area, to avoid sediment deposition within the adjacent lands, and to limit construction equipment to the subject lands to avoid impacted trees off property.
- It's recommended that the adjacent landowner to the north be consulted in advance of the surface drainage swale works to assess whether management of Scotch Pine (and invasive species associates) has previously been considered, and whether synergies can be realized to further enhance the adjacent natural features and mitigate potential spread of invasive within the edge management area. The adjacent landowner should consult with CLOCA and the Municipality in event they wish to address invasive species within their Property in a similar fashion to that proposed herein.
- Ongoing monitoring and maintenance of ESC measures should occur throughout construction of the development.

General recommendations for compensations plantings are provided below:

- A qualified restoration landscaping company should be contracted to complete plantings.
- Plantings should be in an asymmetrical, random mix.
- The species recommended in Table 2 (**Appendix G**) or suitable alternatives as determined by CLOCA should be selected. When planting a mix of shrubs and trees, species should be planted together in groups of 3-4.
- Trees should generally be planted 3 m apart and shrubs 1 m apart.
- When planting in areas of structural fill or unsuitable soil as determined by the landscaping company, planting holes should be supplemented with 5-10 cm of topsoil or planting soil mix prior to insertion of root ball.
- Trees should be placed in planting holes such that the root ball sits flatly on the bottom of the hole and the main stem is perpendicular to the soil surface.

- Plantings should be planted to a suitable depth, as determined by a qualified landscaping company. Generally, the top of the root ball should sit flush or 1-3 cm below the soil surface.
- All plantings should receive a flexible rodent guard to allow expansion during trunk growth, which must be removed at the end of the warranty period.
- A biodegradable root collar should be placed at the base of each planted tree.
- Mulch should be applied to the soil surface around each planting. Mulch should be free of weeds, seeds and inorganic or toxic materials.
- Trees should be planted during the spring (March 15 to May 15) or fall (September 1 to October 31). Trees can be planted outside these dates so long as the ground is not frozen and the warmest summer period has passed.

If necessary, trees should be watered if conditions are unseasonably dry for an extended period of time

To promote growth and overall health of the plantings, the edge management area should be tended to in accordance with the following:

- Tending activities should take place very two-weeks from May 15 to September 30 during the first two growing seasons after planting
- Vegetation should be maintained a minimum of 60 cm around the base of plantings
- A watering plan should be in place for periods of drought or low rainfall
- Vegetation assessed as dead during the two year monitoring period should be replanted

A record of tending should be maintained to include the following:

- Date of planting(s)
- The date tending activities are completed and a description of the tending activity
- An assessment of the overall health of the plantings (good, poor, dead) for each semi-annual monitoring event.

When aggregately combining the net ecological gain associated with the Edge Management Plan, and the compensation measures outlined in **Section 8.2**, the removal of 0.21 of Scotch Pine Plantation (including its invasive species associates) will result in 0.48 ha of ecological enhancements for a net ecological gain ratio of 2.3:1.

8.4 Integrated Stormwater Management Plan and Low-Impact Design

The proposed development will have the effects of increasing the overall site imperviousness resulting in larger runoff volumes. Minor and major storm flows will be conveyed by the existing storm sewers on Broome and Tabb Avenue and then conveyed to the existing Macourtice SWM facility located southwest of the Study Area (Candevcon Limited. 2021). Similarly, the existing remnant drainage feature will be replaced with a storm sewer system that captures and conveys minor system flows (5 year storm event) towards the Macourtice SWM facility.

Low Impact Development measures that will be implemented for the proposed development include increased topsoil depths, roof leaders to splash pads and passive landscaping as a mechanism to minimize runoff by maximizing retention and infiltration of stormwater within the Property. As

previously discussed with the Municipality and CLOCA, and in recognition that the Municipality will not permit drainage swales on private property, a 3 m wide drainage swale (including access requirements) is proposed to be installed in Open Space (Block 128) north of Street A (**Figure 5**). Rear roof leaders for the six split draining lots in the northwest corner of the Property, north of Street A will be disconnected draining to splash pads and then conveyed overland beyond the rear lot line to the drainage swale. The Drainage swale will consist of a perforated sub-drain in a clear stone bed with an overflow to the storm system via the rear yard catchbasin.

8.5 Wildlife Impact Mitigation Plan

Strategies to mitigate potential impacts to general wildlife prior to and during construction are proposed. These may include but are not limited to:

- Clearing trees and vegetation outside the breeding bird season (April 1 to August 31). Should clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed 48 hours prior to clearing activities. If nests are found, work should cease within a species specific setback from the nest, until the young-of-the-year have fledged. If no nests are present, clearing may occur. This is in accordance with the federal Migratory Birds Convention Act, 1994.
- Where possible, maximize the distance of construction equipment used from the plantation edge to avoid disturbing wildlife.
- Limit the use of lighting where possible. Avoid light effects entering the woodland (eliminate light trespass) where possible.
- Installation of wildlife exclusion fencing and escape routes, which direct wildlife away from the construction area and to more suitable habitat.
- Visual monitoring for wildlife species and avoidance, where encountered, if possible.
- If necessary, have a qualified biologist monitor construction in the areas of potential wildlife habitat. If wildlife are found within the construction area, they will be relocated to an area outside of the development into an area of appropriate habitat, as necessary.
- Construction crews working on site should be educated on local wildlife and take appropriate measures for avoiding wildlife.
- Should an animal be injured or found injured during construction they should be transported to an appropriate wildlife rehabilitation center.

With respect to SAR, where structures with Barn Swallow nests are proposed for removal, the removal of the nest should be registered under Section 23 of O. Reg. 242/08 through submission of the Notice of Activity to the MNRF Registry, and the condition of the regulation followed.

With respect to bats, the MECP will be consulted to determine whether potential SAR bat habitat can be removed through a LoA. Generally, impacts to SAR bats can be avoided if removal of potential habitat occurs between October 1 and March 31 (the non-active bat period). The results stemming from MECP consultation will be provided to CLOCA and the Municipality under separate cover.

8.6 Erosion and Sediment Control Plan

Construction activity, especially operations involving the handling of earthen material, dramatically increases the availability of sediment for erosion and transport by surface drainage. In order to mitigate the adverse environmental effects caused by the release of sediment-laden runoff into receiving features, measures for erosion and sediment control are required for construction sites.

This is an extremely important component of land development that plays a large role in the protection of the form and function of terrestrial and aquatic features; where applicable.

Control measures that are appropriate for the erosion potential of the site should be selected. These control measures should also be implemented and modified on a staged basis to reflect the site activities. Furthermore, their effectiveness decreases with sediment loading and therefore, inspection and maintenance is recommended.

In addition, an ESC Plan should be developed as part of the detailed design for the proposed development. The plan may include, but is not limited to, installation of geotextile silt fences, ditch checks, mud mats, temporary sediment ponds, designated topsoil stockpile areas, and cut-off swales and ditches to divert surface flows to appropriate sediment control areas; with provisions for re-vegetating the area as soon as construction is completed. More specifically, the plan may include, but is not limited to, the following measures:

- Standard duty silt fencing (OPSD 219.110) and/or other equivalent erosion and sediment controls should be installed around the perimeter of the work area to clearly demarcate the development area and prevent erosion and sedimentation into adjacent lands. Erosion and sediment control measures should be monitored regularly to observe if they are functioning properly. Where issues are identified, they should be dealt with promptly.
- Stockpiling of excavated material should not occur outside of the delineated work area. If stockpiling is to occur outside of this area, silt fencing should be used to contain spoil piles to prevent sedimentation into adjacent lands.

A spill response plan should be developed and implemented as required. The ESC measures may be removed once construction is complete and sediment runoffs from construction activities have stabilized.

8.7 Environmental Monitoring Plan

The Environmental Monitoring Plan (EMP) should be carried out through the duration of construction activities on-site to observe that the ESC measures operate effectively and to monitor the potential impact, if any, upon the natural environment. The duration of construction is defined as the period of time from the beginning of earthworks until the site is stabilized. Site stabilization is determined as the point in time when the roads have been paved, the industrial units have been constructed and restoration plantings have been completed.

The EMP should consist of monitoring the erosion and sediment measures and the restoration/compensation plantings. ESC measures should be regularly monitored and may require

periodic cleaning (e.g. removal of accumulated silt), maintenance and/or reconstruction. Inspections of the ESC on the construction site should be undertaken by a certified sediment and erosion control monitor. If control measures are damaged and/or not functioning as originally intended they should be repaired and/or replaced promptly.

Site inspection staff and construction managers should refer to the Erosion and Sediment Control Inspection Guide (2008) prepared by the Greater Golden Horseshoe Area Conservation Authorities. This guide provides information related to the inspection reporting, problem response and proper installing techniques.

The EMP will be implemented throughout the construction of the proposed development with the following frequency:

- Every two weeks, and/or
- After every 10 mm or greater rainfall event or during the spring freshet

8.8 PSW Monitoring / Mitigation Plan

In order to better understand the potential dewatering impacts on the PSW, GeoPro identified that a surface water baseline study and monitoring program be conducted pre- and during the temporary dewatering activities in consultation with CLOCA, as per the following.

The baseline study associated with the PSW should be conducted to establish the pre-dewatering water level. Prior to dewatering, a monitoring well should be installed at each of the upstream and downstream locations. The monitoring of the water levels associated with the PSW should be conducted once-weekly for one month prior to the dewatering activities. In addition, a baseline study of the PSW should be conducted to establish the pre-dewatering water quality, which may include chemical testing of surface water samples for general metals and inorganics based on consultation with CLOCA.

The upstream and downstream monitoring wells should also be monitored daily during the dewatering activities. Should adverse impacts be observed during the temporary dewatering, the dewatering volume may be reviewed and modified appropriately. If required, water with acceptable water quality which meets the Provincial Water Quality Objectives (PWQO) standards may be introduced to the wetland to maintain the baseflow.

9.0 Summary

This updated EIS was prepared for the proposed residential development referred to as Hancock Neighbourhood Northwest, within the community of Courtice, in the Municipality of Clarington, and the Region of Durham, Ontario.

The Property primarily consists of residential lands, an industrial area, hedgerows, a meadow, cultural thicket swamp and a small section of Scotch Pine Plantation. The composition of the vegetative features adjacent to the Property based on field investigations are in line with results of past reports by Niblett Environmental Associates Inc. (2012) and Aquafor Beech Ltd. (2006). The field investigations indicate that the Scotch Pine Plantation is of low ecological value due to the young age of trees within the woodland, the presence of invasive species (e.g. Common Buckthorn, Dog-strangling Vine, Scotch Pine), intermediate-level gaps in forest cover, and evidence of past vegetation removal from adjacent lands (residential and commercial). Field investigations also confirmed that the Cultural Thicket Swamp does not support SWH and/or SAR habitat. In addition, surface drainage is currently interrupted by the remnant drainage feature which directs flows to the catchbasin located at the Tabb Avenue cul-de-sac.

The EIS includes compensation, restoration and enhancements works which are in line with Section 3.1 of the Municipality's OP as a mechanism to achieve a net ecological gain to substantiate the removal of 0.21 ha of Scotch Pine Plantation and 0.48 ha of Cultural Thicket Swamp within the Property. Approval to remove the 0.21 ha of the Scotch Pine and 0.48 ha of Cultural Thicket Swamp within the Property will be determined in consultation with CLOCA, the Municipality, Region and MECP. Although the contiguous woodland feature associated with the Study Area is considered significant based on Municipality OP definition, the EIS supports the refinement of the significant woodland boundary consistent with Section 3.4.4 of the Municipality's OP. When aggregately combining the net ecological included in the EIS, the removal of 0.21 of Scotch Pine Plantation (including its invasive species associates) will result in 0.48 ha of ecological enhancements for a net ecological gain ratio of 2.3:1.

Based on the botanical inventories, a total of 116 botanical species were observed. Of the 116 species, none are considered SAR and/or SCC; though three (Hoary Willow, Canada Hawkweed and Large Yellow Lady's-slipper) are considered rare in Durham Region. It is recommended that the three species rare to Durham Region be transplanted prior to vegetation removal activities to mitigation potential impacts to the species. The mean CC value for the Property was calculated at 3.01, indicating an altered landscape which is typical of an urban environment. Furthermore, the breeding bird surveys resulted in the identification of 15 avian species. Barn swallows (THR) were identified within the Study Area. While no evidence of Barn Swallow breeding behaviour was observed in 2018, the observation follows prior 2017 documentation of Barn Swallow nests (though inactive) in association with the automotive recycling facility within the Property.

Provided that the mitigation measures outlined in this updated EIS are followed, the proposed development should result in no negative impacts on the natural features or their ecological function.

Appendix A

Terms of Reference



MEMO

TO: Stefanie Penney and Chris Jones, Central Lake Ontario Conservation Authority
Brandon Weiler, Municipality of Clarington

FROM: Daniel Bourassa and Christina Carter, Dillon Consulting Limited

cc: Greg Gilbert and Kuok-Kei Hong, Trolleybus Urban Development Inc.

DATE: March 22, 2018

SUBJECT: Scoped Environmental Impact Study Terms of Reference for the Hancock Neighbourhood Northwest Located in Courtice, Ontario

OUR FILE: 18-7249

Introduction

Dillon Consulting Limited (Dillon) has been retained by Trolleybus Urban Development Inc. (Trolleybus) to undertake environmental studies for a proposed residential development referred to as Hancock Neighbourhood Northwest (the 'property') which is located northwest of the Nash Road and Hancock Road intersection in Courtice (Municipality of Clarington), Ontario. As such, Trolleybus and Dillon are taking a pro-active approach to environmental-first planning and undertaking the appropriate environmental studies that are required to complete a Scoped Environmental Impact Study (EIS). Figure 1 attached, shows the property boundary and a Study Area which extends 50 metres beyond the property. It is important to note that surveys will be conducted within the Study Area (north of Nash Road and west of Hancock Road) where property access is permitted only. Dillon staff do not intend to purposefully trespass on property that does not belong to the municipality, or where landowner approval has not been granted.

In 2011, an EIS was completed for the lands directly west of the property (Niblett Environmental Associates Inc. 2012). The recommendations made in the Niblett EIS were included in the approved Draft Plan of Subdivision for the lands west of the property. Information included in the Niblett EIS will be incorporated into the Scoped EIS proposed for the property.

In keeping with the general policies of the Municipality of Clarington's EIS Guidelines, and based on the pre-consultation meeting minutes (meeting on October 26, 2017; minutes on November 22, 2017) with the Municipality of Clarington, Region of Durham and the Central Lake Ontario Conservation Authority (CLOCA), we have prepared the following Terms of Reference (TOR). Below, we present the TOR in a check-list format to confirm that the required work and/or studies are known and agreed to prior to the commencement of work, to facilitate a stream-lined and timely review process.

Terms of Reference

General Policies

- The EIS must be undertaken by a qualified professional in environmental or related sciences to the satisfaction of the Authority.

- ☒ A visit to the site may be required by the Authority prior to, during, or upon receipt of the EIS.
- ☒ The staking of significant natural features (i.e., woodlands, etc.) by the Authority may be required. Staking will generally occur between the end of May and the end of October. Any staking that occurs outside of this time may require a confirmatory visit between May and October.

Existing Conditions

- ☒ The existing conditions of the project location must be clearly described and clearly mapped on aerial photographs.
- ☒ The description must include the zoning and designations of Official Plan(s) (OP) associated with the project location. This includes any land use designations from other municipal planning documents, such as Secondary Plans.
- ☒ A description of the soils, landforms and surficial geology based on a review of available mapping and literature must be described in the report.
- ☒ Hydrological and hydrogeological resources and issues, including surface water features, recharge/discharge zones, groundwater quality and quantity, groundwater elevations and flow directions, and connections between groundwater and surface water features will be identified in the report.
- ☒ The vegetation communities must be identified using the Ecological Land Classification (ELC) system to vegetation type, where possible. The communities must be identified in the mapping, using the appropriate ELC codes, as well as described in the text. As a component of the ELC, a plant list must be included as an appendix. The list must include an analysis for the presence of federal, provincial, regional and/or watershed rare, threatened or endangered species. This should include information from the MNRF district office and NHIC.

Note: ELC (high level) was conducted by Dillon on July 4, 2017 at the original properties associated with the proposed development. ELC will be conducted at the additional properties within the project location (Figure 1). This information will be included in the EIS.

- ☒ A three-season (summer) plant survey is required and must be included as an appendix. The list must include an analysis for the presence of federal, provincial, regional and/or watershed rare, threatened or endangered species. This should include information from the MNR district office and NHIC.

Note: A single-season (summer) plant survey was conducted by Dillon on July 4, 2017 at the original properties associated with the proposed development. Two-season (spring and fall) plant surveys will be conducted at the original properties and three-season (spring, summer and fall) plant surveys will be conducted at the additional properties within the project location (Figure 1). The list of plant species will be included as an appendix in the EIS.

- The EIS requires a breeding bird survey. The survey must be conducted during the breeding bird season at an appropriate time of day in appropriate weather conditions and by a qualified professional. A minimum of two surveys are required and they must follow generally accepted scientific protocols. A list of the breeding birds is required as an appendix. The list must include an analysis for the presence of federal or provincial rare, threatened or endangered species.
- The EIS requires a breeding amphibian/reptile survey. The survey must be conducted during the breeding amphibian season and by a qualified professional. For calling amphibians a minimum of three surveys are required. These surveys must span the full amphibian breeding season to ensure that the peak periods of activity for early and late breeding species are accounted for. For non-calling amphibians, appropriate methodology must be used. A list of the breeding amphibians is required as an appendix. The list must include an analysis for the presence of federal, provincial, threatened or endangered species. Watershed rarity status shall be determined in conjunction with CLOCA.

Note: Although the November 22, 2017 pre-consultation meeting minutes identify amphibian surveys as being required, an email from CLOCA on January 3, 2018 indicated amphibian surveys were not required.

- A fisheries assessment shall be provided due to the potential presence of suitable fish habitat. Existing data regarding fish species shall be obtained from the CA and/or the MNR and used for the fisheries assessment. The assessment shall include a description of watercourses or other fish habitat on and/or adjacent to the property (where site access is permitted).

Note: A fisheries assessment is not proposed, as no suitable fish habitat has been identified within the project location.

- The fisheries assessment will include community sampling through electrofishing and/or netting during the appropriate season, under a collection permit issued by the Ministry of Natural Resources.

Note: A fisheries assessment is not proposed, as no suitable fish habitat has been identified within the project location.

- All incidental wildlife observed shall be reported on and listed in an appendix. The list must include an analysis for the presence of federal or provincial rare, threatened or endangered species.
- A functional assessment of the project location describing the ecology of the natural heritage features and functions within and adjacent to the project location should be provided. The functional assessment may include ecological function, wetland functions, natural heritage features and landscapes, benefits of importance to humans, and corridors and linkages, as required.

Evaluation of the Ecological Impacts

- Mapping (at a minimum) shall consist of the following:

- a. All mapping must have a title, figure number, north arrow, legend and scale or scale bar.
 - b. A site location map that provides the regional or watershed context of the project location.
 - c. The locations of all watercourses and waterbodies and an indication of their flow and thermal regimes.
 - d. Vegetation communities must be delineated and identified using ELC.
 - e. The location of any important wildlife features (i.e., hibernacula, den, stick nest, etc.) shall be identified.
- The potential impacts to the features and functions of natural areas shall be identified and discussed.
 - An assessment of the potential impact on wildlife at a local, watershed and provincial (if applicable) level shall be provided.
 - In the case of significant natural features (as confirmed through field studies), the EIS must demonstrate that there is no development or site alteration within the feature with the exception of uses as specified in the OP and/or prior approvals. The EIS must determine appropriate buffers from significant natural features.
 - If applicable, a description of the natural features proposed for removal shall be provided. The quantity of removal shall also be included.

Recommendations and Mitigation Measures

- Determine adequate buffers through the identification of the critical function and protection zones of any identified natural areas.
- Where avoidance of a feature is not feasible or possible, mitigation approaches/techniques must be provided. These may include edge management plans, buffer plantings, fencing, low impact designs (LID), etc.
- In cases where a Linkage area has been identified on a property, the EIS must demonstrate how it will be integrated into the proposed development plan.
- Recommendations for Best Management Practices during construction should be provided. This may include silt fencing, tree protection, fencing, identification of timing or seasonal constraints to construction or restoration, etc.
- Mitigation for negative impacts on the natural features or their ecological functions (or to achieve no net negative impact) may include, at the discretion of the planning authority in conjunction with the Authority, approaches to replace lost areas or functions. If acceptable, replacement must, to the extent possible, occur within the same subwatershed as the proposed development or site alteration. The appropriate amount of replacement will be determined through discussions with CLOCA and the municipality and will be agreed to by all parties in writing.

- If monitoring is required, the details of a monitoring program must be agreed to in writing by CLOCA, the municipality and other parties (as necessary).

Conclusions

The EIS must demonstrate the following:

- Conformity with the policies and requirements of the Municipality of Clarington and the Durham Region Official Plans.
- Conformity with the policies and requirements of other applicable planning documents.
- Conformity with the requirements of the CLOCA.

Species at Risk

Should any Species at Risk or their habitat be identified during the Scoped EIS process and confirmed in the field, the MNRF will be notified and Species at Risk requirements will be addressed as outlined in the Endangered Species Act, 2007, under separate cover with the MNRF. CLOCA will be informed of potential MNRF required approvals, where necessary.

Information Request

At this time we are requesting any of the following background information, if available:

- natural environment studies in and/or adjacent to the project location
- regionally or locally significant/rare flora, fauna, vegetation communities
- additional natural environment data you may have for the indicated area
- GIS Mapping
 - regulation limits,
 - floodplain mapping.

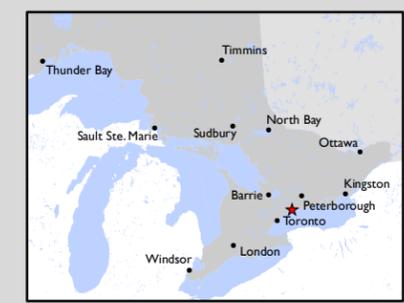
Attachment: Figure 1 – Project Location



**HANCOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON**

**PROJECT LOCATION
FIGURE I**

- Project Location
- Study Area
- Provincially Significant Wetland (MNRF)
- Natural Heritage System (CLOCA)
- Watercourse (MNRF)
- Woodland (MNRF)



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, CLOCA

MAP CREATED BY: GM
MAP CHECKED BY: DB
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 187249
STATUS: DRAFT
DATE: 2018-03-22

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

From: abiglieri@thebiglierigroup.com
Sent: January 3, 2018 3:23 PM
To: Greg Gilbert; Kuok-Kei Hong
Cc: 'Mark Jacobs'; 'Bourassa, Daniel'
Subject: FW: Trolleybus Development - Nash & Hancock Rd - good news

Importance: High

FYI – Good News

I have meeting tomorrow with senior management staff at Clarington on a matter and will discuss and confirm this with them as well.

Thanks
Tony

From: abiglieri@thebiglierigroup.com [mailto:abiglieri@thebiglierigroup.com]
Sent: January 3, 2018 3:18 PM
To: 'Stefanie Penney' <spenney@cloca.com>
Cc: 'Chris Jones' <cjones@cloca.com>
Subject: RE: Trolleybus Development - Nash & Hancock Rd

Hi Stefanie and Chris

HAPPY NEW YEAR !!

Thank you very much and I am actually meeting with Clarington staff tomorrow on another matter and will finalize this with them.

You can be ensured that all necessary work that CLOCA requires will be completed.

Thank you again for allowing for the application to move forward at this time. Will let you know what the municipality says.

Thank you again,

Tony

From: Stefanie Penney [mailto:spenney@cloca.com]
Sent: January 3, 2018 11:15 AM
To: Anthony Biglieri <abiglieri@thebiglierigroup.com>
Cc: Chris Jones <cjones@cloca.com>
Subject: RE: Trolleybus Development - Nash & Hancock Rd

Hi Tony,
Happy New Year!

Apologies if when we spoke last month that I wasn't clear on CLOCAs position on the EIS.

We acknowledge the work that Dillon has completed for the SAR surveys. CLOCA however, has a much broader scope of natural heritage requirements for inclusion in the EIS. Given that there are communities on the site that are currently within CLOCA's mapped Natural Heritage System (NHS), within the Lake Iroquois Beach (LIB) as well as within 120metres of the Provincially Significant Wetland, these all trigger the requirement for a full EIS.

CLOCA would be agreeable to having the work that has already been completed submitted as a component of the complete application to Clarington, pending their support. Please understand that CLOCA will be requiring additional fieldwork for spring and fall vegetation surveys given that the area is within the above noted features. Being within the LIB, there are plant species which rare to Durham Region that have been known to occur in the immediate vicinity. These plant species only flower in the fall, therefore fall surveys must be conducted, as they would not have been present when the original botanist surveys were conducted in the month of July. Breeding bird surveys will also be required following accepted protocols. Amphibian surveys would not be required.

Among other items, please note that the EIS will need to provide discussion on the justification for removal of the vegetation communities within the NHS and provide for any compensation for its removal. The EIS will also need to discuss transplanting of rare species found on the property, if any, as they have been known to occur in the immediate vicinity.

Hope this clarifies our position. Please let me know if you have any questions

Thanks
Stefanie

From: Chris Jones
Sent: Tuesday, January 2, 2018 12:39 PM
To: Stefanie Penney <spenney@cloca.com>
Subject: FW: Trolleybus Development - Nash & Hancock Rd
Importance: High

Hi Stef:

We had discussed this briefly during the last week before Christmas.

When you have a chance, let's discuss this once you are back.

Thanks,

Chris Jones, MCIP, RPP
Director of Planning and Regulation
Central Lake Ontario Conservation Authority
100 Whiting Ave.
Oshawa, ON L1H 3T3
Tel: 905 579 0411 ext 116
e-mail: cjones@cloca.com

To go to our on-line mapping tool, click [here](#)

This communication (and any attachments) is directed in confidence to the addressee(s) listed above, and may not otherwise be distributed, copied or used. The contents of this communication may also be subject to privilege, and all rights to that privilege are expressly claimed and not waived. If you have received this communication in error, please notify us by reply e-mail or by telephone and delete this communication (and any attachments) without making a copy. Thank you.

La présente communication (et tout fichier rattaché) s'adresse uniquement au(x) destinataire(s) précité(s) et ne peut être autrement distribuée, copiée ou utilisée. Le contenu de cette communication peut être assujéti au privilège. Tout droit à ce privilège est expressément revendiqué et nullement abandonné. Si vous avez reçu

cette communication par erreur, veuillez nous en avvertir immédiatement en répondant à ce courriel ou en nous appelant. Veuillez également effacer cette communication (et tout fichier rattaché) sans en conserver une copie.
Merci!

From: abiglieri@thebiglierigroup.com [<mailto:abiglieri@thebiglierigroup.com>]

Sent: December 21, 2017 7:55 AM

To: Chris Jones <cjones@cloca.com>

Subject: FW: Trolleybus Development - Nash & Hancock Rd

Importance: High

Hi Chris,

I hope all is well. Four more sleeps 😊

Good talking to you. I just wanted to provide a little bit of environmental history from our environmental consultant and the work completed. Again, we would like to submit the document completed and have the application deemed complete knowing that the Spring work needs to be submitted to CLOCA for further review.

Thank you again for your review on this.

Merry Christmas and all the best in 2018.

Thanks

Tony

From: Bourassa, Daniel [<mailto:dbourassa@dillon.ca>]

Sent: December 20, 2017 8:50 AM

To: Anthony Biglieri <abiglieri@thebiglierigroup.com>

Subject: Trolleybus Development - Nash & Hancock Rd

Hi Tony,

In review of the pre-consultation minutes, there is mention that an EIS for the project is required and that the EIS will need to provide a 3 season botanical survey, breeding bird (including specie at risk) and amphibian surveys in accordance with applicable protocols.

As you know, a seasoned Dillon botanist completed a robust botanical inventory on the properties on July 4, 2017. SAR and/or rare botanical species were NOT observed during the July inventory. A SAR information request was submitted to the Aurora MNRF District and the only botanical SAR the MNRF flagged was Butternut (which none were observed).

Breeding bird survey protocol requires that 2 surveys take place between late-May and early-July with a minimum of 10 days between the first and second survey. Similarly, amphibian survey protocol requires that 3 surveys take place. The first, second and third surveys are to be completed generally between April 1-15, May 1-15 and June 1-15, respectively.

Given that the breeding bird and amphibian surveys are completed during the spring, we could cover off a spring botanical inventory as well. Hopefully, this will alleviate and/or negate the requirement to complete a fall botanical inventory.

Let me know if you have any additional questions.

Regards,



Daniel Bourassa
Associate
Dillon Consulting Limited
1155 North Service Road West Unit 14
Oakville, Ontario, L6M 3E3
T - 905.901.2912 ext. 3417
F - 905.901.2918
M - 289.981.9136
DBourassa@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

Vacation Alert - Dec. 25 to Jan. 5

Note, our offices will be closed from Dec. 25 to Jan. 1

This message is directed in confidence solely to the person(s) named above and may contain privileged, confidential or private information which is not to be disclosed. If you are not the addressee or an authorized representative thereof, please contact the undersigned and then destroy this message.

Ce message est destiné uniquement aux personnes indiquées dans l'entête et peut contenir une information privilégiée, confidentielle ou privée et ne pouvant être divulguée. Si vous n'êtes pas le destinataire de ce message ou une personne autorisée à le recevoir, veuillez communiquer avec le soussigné et ensuite détruire ce message.



Bourassa, Daniel <dbourassa@dillon.ca>

RE: Trolleybus Urban Development Inc - Hancock Neighbourhood Northwest: EIS Terms of Reference

1 message

Stefanie Penney <spenney@cloca.com>

Fri, May 4, 2018 at 9:41 AM

To: "Bourassa, Daniel" <dbourassa@dillon.ca>

Cc: Christina Carter <ccarter@dillon.ca>, 187249 <187249@dillon.ca>, Greg Gilbert <greg@trolleybusdevelopment.com>, Kuok-Kei Hong <kuokkei@trolleybusdevelopment.com>, Chris Jones <cjones@cloca.com>, "Weiler, Brandon" <bweiler@clarington.net>

Hi Daniel,

CLOCA Natural Heritage Department has reviewed the TOR and can advise that all necessary field studies have adequately been detailed for the project. Please note that the mapping should include the approximate locations of locally and/or regionally rare plant species as well as constraints (setbacks associated with driplines)

Please submit a formal data request for background information using the attached form to datarequest@cloca.com

Thanks

Stefanie

From: Bourassa, Daniel [mailto:dbourassa@dillon.ca]**Sent:** Thursday, May 3, 2018 3:02 PM**To:** Stefanie Penney <spenney@cloca.com>**Cc:** Christina Carter <ccarter@dillon.ca>; 187249 <187249@dillon.ca>; Greg Gilbert <greg@trolleybusdevelopment.com>; Kuok-Kei Hong <kuokkei@trolleybusdevelopment.com>; Chris Jones <cjones@cloca.com>; Weiler, Brandon <bweiler@clarington.net>**Subject:** Re: Trolleybus Urban Development Inc - Hancock Neighbourhood Northwest: EIS Terms of Reference

Hi Stefanie,

Simply following up again on the ToR we submitted back on March 22.

Can you please advise everyone included on this email when we can expect a response? We have already initiating field work (i.e. amphibians) and would appreciate having an approved ToR in place prior to commencing the full field program.

Regards,

**Daniel Bourassa**

Associate

Dillon Consulting Limited

1155 North Service Road West Unit 14

Oakville, Ontario, L6M 3E3

T - 905.901.2912 ext. 3417

F - 905.901.2918

M - 289.981.9136

DBourassa@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

On Fri, Apr 6, 2018 at 2:22 PM, Bourassa, Daniel <dbourassa@dillon.ca> wrote:

Hi Stefanie,

As a follow up to the voicemail I left you, can you please advise everyone on this email as to when we can expect to receive comments back on the draft ToR provided on March 22?

Regards,



Daniel Bourassa
Associate
Dillon Consulting Limited
1155 North Service Road West Unit 14
Oakville, Ontario, L6M 3E3
T - 905.901.2912 ext. 3417
F - 905.901.2918
M - 289.981.9136
DBourassa@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

On Thu, Mar 22, 2018 at 4:36 PM, Bourassa, Daniel <dbourassa@dillon.ca> wrote:

All,

Please find attached the Scoped EIS - ToR associated with a Trolleybus Urban Development Inc. property referred to as *Hancock Neighbourhood Northwest* located in Courtice, ON.

At this point the ToR is in draft, and we would like your input in order to finalize it.

Should you have any questions, please do not hesitate to contact me.

Regard,



Daniel Bourassa
Associate
Dillon Consulting Limited
1155 North Service Road West Unit 14
Oakville, Ontario, L6M 3E3
T - 905.901.2912 ext. 3417
F - 905.901.2918
M - 289.981.9136
DBourassa@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

This message is directed in confidence solely to the person(s) named above and may contain privileged, confidential or private information which is not to be disclosed. If you are not the addressee or an authorized representative thereof, please contact the undersigned and then destroy this message.

Ce message est destiné uniquement aux personnes indiquées dans l'entête et peut contenir une information privilégiée, confidentielle ou privée et ne pouvant être divulguée. Si vous n'êtes pas le destinataire de ce message ou une personne autorisée à le recevoir, veuillez communiquer avec le soussigné et ensuite détruire ce message.

 **Data Requests Form.pdf**
486K



Bourassa, Daniel <dbourassa@dillon.ca>

Fwd: S-C-2018-0003 and ZBA2018-0014 Preliminary comments

1 message

Bourassa, Daniel <dbourassa@dillon.ca>
To: Daniel Bourassa <dbourassa@dillon.ca>

From: "**Stefanie Penney**" <spenney@cloca.com>
Date: Fri, Jun 14, 2019 at 4:43 PM -0400
Subject: RE: S-C-2018-0003 and ZBA2018-0014 Preliminary comments
To: "Greg Gilbert" <greg@trolleybusdevelopment.com>
Cc: "Weiler, Brandon" <BWeiler@clarington.net>, "Kuok-Kei Hong" <kuokkei@trolleybusdevelopment.com>, "Pellarin, Carlo" <cpellarin@clarington.net>, "Chris Jones" <cjones@cloca.com>

Good afternoon all,

My apologies for not having responded to your inquiries and emails. The below outlines comments regarding the EIS for the NW site, as well as some dates for discussions on the TOR for the SW site and dates for a site meeting for Courtice Road.

Please let me know if you have any questions.

1. EIS comments S-C-2018-0003, NW Nash & Hancock

Below are comments from CLOCA Natural Heritage Department.

- The studies as set forth in the Terms of Reference for a Scoped Impact Study have been fulfilled and staff confirms that all studies/inventories have followed approved protocols.
- The Impact Identification and Analysis section of the report prescribes the removal of 0.21 ha of the woodland feature (FOD3) located in the northwest corner of the property, to support the proposed development. This feature is also identified as candidate SWH (bat maternity roost area). It appears that the basis for this removal is largely reliant on the proposed plan for the adjacent Headgate development. As the EIS for the adjacent subdivision was submitted almost a decade ago, updated information would need to be provided. Staff is not supportive of removal of any portion of the woodland and/or potential SWH to accommodate the development proposal. Staff further supports the maintenance of the woodland with an appropriate buffer to protect the feature and it's functions from adjacent landuse.
- With respect to Appendix E (plant list), all plants should be cross referenced to the Durham Plant List (Distribution and Status of the Vascular *Plants* of the Greater *Toronto* Area, *Varga et al* 2000). Large Yellow Lady's Slipper is noted as a rare occurrence in Durham and therefore appropriate mitigation for this species will be required.
- In addition to the above comments from Natural Heritage, as noted within the comments pertaining to the Hydrological Study, comment within the EIS should be provided with respect to the impacts associated to the adjacent wetland from a dewatering perspective as a result of the development.

- Section 8.2 refers to compensation. Conceptual compensation locations, areas and concepts will need to be determined prior to draft approval.

CLOCA would be happy to discuss these comments with you and your team, should you wish.

2. TOR for SW Nash and Hancock

A data request will be required to be submitted and a data sharing agreement will need to be entered into. I have the attached the appropriate form to be filled out and submitted to our GIS Coordinator, Rod Wilmot, rwilmot@cloca.com. He can also provide you with a cost estimate if needed.

Although staff were satisfied with the TOR that Dan Bourassa had emailed on September 19, 2018 (dated Sept 17, 2018), which included the 3 season plant survey, myself and Kathy would be available to discuss the TOR further if required either at a meeting or a telephone conference call the following times:

Friday June 21, pm only, or July 2nd, July 3rd or 5th anytime for a meeting regarding the TOR.

(or any of the additional times noted below for the site visit)

3. Courtice Road Site visit

Unfortunately the next two weeks are not available for a site visit with all relevant CLOCA staff present, except for the one morning. However, staff (engineering, fisheries, natural heritage, planning) would be available for a site visit the following dates and times:

Tuesday June 18th am only

Tuesday July 2nd, between 9-2:30pm

Wed July 3rd, after 11am

Mon July 22, pm only

Tuesday July 23, between 9am – 2:30pm

Wednesday July 24, after 11 am

Thursday July 25, anytime

Friday July 26, anytime

Hopefully one of these times can accommodate everyone. I can also provide additional dates later in July or August.

Thanks, Enjoy the weekend all

Stefanie

Stefanie Penney

Appendix B

Pre-Consultation Meeting Minutes

<p>Municipality of Clarington Preconsultation Minutes of Meeting</p> <p>Date: November 22, 2017</p>	<p>Hancock Neighbourhood Northwest PC2017-0049</p> <p>Meeting Date: Thursday, October 26, 2017 Clarington Municipal Administrative Centre Room 3C</p>
---	---

Attendees: Brandon Weiler (Clarington Planning Services), Anne Taylor Scott (Clarington Planning Services), Carlo Pellarin (Clarington Planning Services), Adam Dunn (Clarington Building Division), Jeff Almeida (Durham Region Works Department), Stefanie Penney (Central Lake Ontario Conservation), Karen Richardson (Clarington Engineering Services), Valerie Hendry (Durham Region Planning Department), Greg Gilbert (Trolleybus Development), Isabelle Kim (The Biglieri Group), Michael Auduong (The Biglieri Group) & Kuok KeiHong (Trolleybus Development).

Regrets: Stephen Brake (Clarington Operations Department), Arie Kolet (Ministry of Transportation), PVNCCD School Board, Randy Reinert (Clarington Emergency & Fire Services).

Proposal: A 143 unit residential development in the Hancock Neighbourhood. The development would consist of 82 single detached dwellings and 61 townhouse dwelling, traditional and rear lane units (fronting onto Nash Road and Hancock Road), within plans of condominiums. The proposal includes the extension of a number of public roads including Broome Avenue that will connect to Hancock Road.

Comments:

Background Planning Information

Durham Official Plan Designation: Living Area, Type 'B' Arterial (Nash)

Clarington Official Plan Designation: Urban Residential, within Hancock Neighbourhood Plan

- Hancock Neighbourhood Plan anticipates a mix of 10 and 12 metre singles and some medium density along Nash and Hancock Roads.
- Nash Road is a Type B Arterial
- Close proximity to Provincially Significant Wetland (North)
- Majority of lands within the built boundary – contributes towards the 40% intensification target

Present Zoning: Agricultural and Environmental Protection

Clarington Planning Comments

Single Detached Subdivision Proposal

- The street layout generally reflects the Hancock Plan.
- Street C will need to extend west and connect to the draft approved subdivision to the west.
- Staff will not accept the entrance to a condominium on a private lane between single detached dwellings as shown off of Tabb Avenue.

- The extension of Street B south to connect with Nash Road would provide better options for access to a condominium development fronting onto Nash Road. Staff encourage the applicant to look at connecting Street B to Nash, which would line up with a future street south of Nash Road.
- The Hancock plan calls for a mix of single detached dwellings with frontages of 10 and 12 meters. There needs to be some variation in lot frontages. The minimum lot frontage for a 2 car garage is 11.3 meters.
- Lots on the west side of Street B will need to be integrated into the lands to the west (show the lot pattern to the west, pie shaped lots)

Development fronting onto Hancock Road

- The Engineering Department has indicated that the proposed townhouses fronting onto Hancock Road can have direct access from Hancock and would prefer there was no rear lane. Planning staff would accept this. A minimum of 7m frontage is required for townhouses fronting onto Hancock.
- If townhouse condominium units are proposed show how parking will work for each unit and visitor parking.
- If a rear lane is pursued a buffer between lane and singles to the west is encouraged.
- Condo snow storage area of 2% of all parking and paved surface is required.
- If a condo is proposed amenity space will need to be considered.

Development fronting onto Nash Road (Type 'B' Arterial)

- Entrance of private lane between two singles would not be accepted. Direct entrance onto municipal road, not between single detached dwellings, is encouraged.
- Connectivity to future surrounding development needs to be considered.
- If Street B was extended to Nash Road more options would be available for access and future development connectivity.
- Amenity space required (see Amenity Guidelines)
- Condo snow storage area of 2% of all parking and paved surface is required.
- The applicant is encouraged to look at alternate forms of development (low rise medium density) in this neighbourhood where that form of development is compatible with surrounding development.

Required Development Applications

Draft Plan of Subdivision

Zoning By-law Amendment

Possible Plan of Condominium Application (if proceeding with condominium)

Possible Site Plan Control (for condo applications)

Drawings/Plans Required for Submission

Drawings/Plans Required for Submission	# of Copies
Site Plan	25
Reference Plan/Survey	2
Grading/Drainage Plan	15
Site Servicing Plan	15
Landscape Plan (condo)	10
Floor Plans	10
Building Elevations	15
Sediment/Erosion Control Plan	10
Lighting Plan (condo)	10
Light Fixture details (condo)	10
Coloured Elevations/Perspective Drawing	5
Condo Plan	25
Subdivision Plan	25

Studies/Reports Required:

- Planning Justification (See policy 9.4.6 of Clarington Official Plan and below)
- Environmental Impact Study (EIS). Terms of Reference to be circulated and approved by CLOCA and the Municipality. More details in CLOCA's comments below;
- Site Screening Questionnaire by QP (Phase 1/2 ESA/RSC) (3 copies);
- Sustainability/Energy Conservation Plan;
- Stage 1 Archaeological Assessment (3 copies);
- Urban Design Brief (3 copies);
- Landscape Analysis Study (3 copies);
- On-street Parking Plan (3 copies);
- Traffic Study (5 copies);
- Noise & Vibration Study – considering Arterial Road Noise and Hwy 418 (5 copies);
- Sustainability Energy Conservation Plan (3 copies);
- Tree Preservation Plan/Inventory (3 copies) – this will be a requirement at final approval, however preliminary assessment should be prepared at the onset of the applications (3 copies);
- Stormwater Management/Functional Servicing Report (10 copies); and
- Site Screening Questionnaire/Environmental Assessment (5 copies).

Planning Rationale Report needs to demonstrate, among other things, the following:

1. *Conformity with all Provincial policies and regulations (e.g. Growth Plan, Provincial Policy Statement);*
2. *Conformity with Durham Region policies and regulations (Durham Regional Official Plan);*
3. *Conformity with the general goals and policies of the Clarington Official Plan;*
4. *Conformity with the specific goals and policies of Secondary Plan (if applicable);*
5. *Compatibility of the proposed use with the existing, surrounding uses;*
6. *Suitability of the site to accommodate the use; and*
7. *How traffic flow and safety will be impacted by the proposed development.*

Applicable Municipal/Regional Guidelines

[Amenity Guidelines](#)

[Noise Attenuation Guidelines](#)

[Landscape Design Guidelines](#)

[Lighting Guidelines](#)

Guidelines for Regional Waste Collection

Central Lake Ontario Conservation Authority;

There are no natural hazards mapped on the site;

Approximately half of the site is subject to CLOCA's regulation, therefore a permit from this office would be required prior to any development activity occurring within the regulated area.

The site is within the Lake Iroquois Beach (LIB);

The site has been mapped at a Regional scale as being within an Ecologically Significant Groundwater Recharge Area (ESGRA)

The site is within 120metres of the Provincially Significant Wetland (PSW) known as the Harmony-Farewell Iroquois Beach Wetland Complex;

Portions of the site have been mapped within Schedule B of the Region of Durham Official Plan as Key Natural Heritage Features (KNHF);

Portions of the site contain wetland communities and natural forest cover.

Through the Planning process, CLOCA will require:

- An Environmental Impact Study (EIS). Through the development of the Hancock Neighborhood Design Plan it was determined that portions of the neighborhood can be developed, however, an EIS is required to identify the extent of the natural features on the site and to provide mitigation for any impacts to natural features and justification for any proposed removals. Compensation would be required for any removal of natural features. The EIS will need to provide a 3 season vegetation survey, breeding bird (including Species at Risk) and amphibian surveys in accordance with applicable protocols. A Terms of reference will need to be provided to the Municipality of Clarington and CLOCA for our review and approval.
- Site plan, site grading and drainage plan, servicing plan, phased erosion and sediment control plan.
- A Stormwater Management Report identifying how site drainage will be accommodated. Water quality treatment must be provided to achieve a level 1 Enhanced treatment; water quantity control must be provided to control post development flows to pre development levels for the 2 through to the 100 year and the Regional storm events. CLOCA requires Low Impact Development measures to be incorporated into the site design.
- As the site is within an ESGRA and the LIB, a water balance must be completed to ensure that infiltration on site is provided and meets pre development infiltration volumes. This can be done through the use of LID's.
- A Compensation Plan

- CLOCA Subdivision Application fee is \$12,280 *(to be collected by the Municipality with application), plus \$1,725 per hectare plus \$3,045 for clearance letter (to be invoiced by CLOCA at appropriate milestones).

A permit from CLOCA will be required prior to any clearing and grading activity. CLOCA permit fee would be subject to our Major Permit D category - \$3,045*

*Please note all fees will increase in January 2018.

Clarington Operations Department;

Infrastructure details (including number of kilometres of new public road) are required to be submitted with the plans for the construction of all new public roadways. Quantities are necessary to determine the impacts on existing municipal staffing resources and to estimate future maintenance costs. In addition to the total length and width of new roadways the submission must also include length of storm sewer, number of catch basins, number of boulevard street trees, number of streetlights, etc.

The plans for the condominium town homes must indicate on-site snow storage area(s) that are equal to a minimum of 2% of the total of all above ground exterior hard surfaces including internal roads, sidewalks, walkways and any proposed parking stalls.

Protection measures must be implemented to guard against any mud tracking from the site onto the area roadways for the full period of construction. Measures shall include mud mats and a regular program of roadway sweeping and flushing. A response by the Operations Department for unsatisfactory road conditions will result in the back-charge of all associated costs plus a 35% administration fee.

The applicant should be aware that any construction that is proposed at the site will be subject to vehicle load restrictions (half-loads) between March 1st and May 1st each year.

The applicant should be aware that the condominiums will be responsible for providing future maintenance on the municipal boulevard adjacent to the site. Responsibility will include grass cutting and winter snow clearing on any future sidewalk.

Clarington Building Division;

Building Permit Fees:

Building permit fees are currently \$12.84/m² plus \$3.97/m² for finished basements and will increase by 3% on January 1, 2018. Contact building department for site servicing permit fees.

A condominium would require a site servicing permit with the Municipality of Clarington and a connection permit from the Region of Durham.

Indicate fire routes on plans including width and radius.

A record of site condition will be required for the former Auto Wrecker yard.

Development Charges

Municipality of Clarington: Singles \$16,497.00 each, Towns \$12,753.00 each (increasing January 15, 2018)

Separate School Board: \$710.00 per unit
Public School Board: \$1028.00 per unit
Region of Durham: contact the Region of Durham directly

Clarington Engineering Services;

Soil Management – Site Alteration

Every effort must be made to minimize the importing and exporting of material.

Should Site Alteration Works be necessary, as part of the site plan approval, a permit is required from the Municipality under Site Alteration By-law 2008-114, as amended, and from the conservation authority for a regulated area under their jurisdiction.

Should Site Alteration Works be necessary, as part of the development process, a Soils Management Report is required prepared by a Professional Engineer and submitted to the Director of Engineering Services for approval.

The approval of a permit under the Site Alteration Bylaw or Soils Management Report will require providing information respecting any proposed import or export of fill to or from any portion of the Lands, intended haulage routes, the time and duration of any proposed haulage, the source of any soil to be imported, quality assurance measures for any fill to be imported, and any proposed stockpiling on the subject lands.

Soils Management Report and Plans need to address the following areas:

- a) Proposed haul route, demonstrating shortest routes and least impact to municipal roads, traffic and residents.
- b) Proposed schedule with precise start and end dates.
- c) Estimate of how many cubic meters to be hauled, how many trucks per day.
- d) A description of the proposed fill, confirming it originates from within the Municipality of Clarington and describing source locations and confirmation from a qualified expert that it contains no contaminated fill, as defined in the Municipality's current Site Alteration By-law.
- e) Daily haulage time restrictions where public may be impacted (i.e. rush hour traffic, school areas, park areas, etc.).
- f) Mud and dust control program for both source and dump sites, including who will be monitoring the haulage to ensure conformance to these conditions. This also includes monitoring and cleaning mud mats and roadways at both sites. The Municipality is to be provided with the contact's name and position, their 24 hour phone number and what company they are using to clean Municipal roads.
- g) When route is approved by the Municipality, a precondition assessment and post haulage assessment to determine any damage and required repairs to the satisfaction of the Municipality.

- h) Written commitment from applicant to ensure their contractor, subcontractor and all associated parties adhere to these requirements and any additional conditions that the Director of Engineering determines appropriate under the Municipality's current Site Alteration By-law.
- i) Any Municipal approval is based on the understanding that the applicant has obtained prior to the work, the necessary approvals from any other agencies, including the Conservation Authority where appropriate. Provide written confirmation of consultation and acceptance of the proposal from the Conservation Authority.
- j) Absolutely no alteration of either the source or destination site shall occur until the Municipality has approved the Soils Management Plan and/or Site-Alteration Permit (e.g. Silt fence installation, tree clearing, mud mat construction, etc.).

Municipal Road Occupancy

The following notes must be provided on all site plan drawings:

- i. "Respecting all work in the municipal right of way, the contractor is to provide at least 48 hours prior notice to the Clarington Engineering Services Department staff at 905-623-3379."
- ii. "A Road Occupancy Permit will be required for any work done in the municipal road allowance. Excavation of the road surface is not permitted between December 1st and April 30th."
- iii. "All restoration or work done in the road allowance must be completed as per municipal field staff direction."
- iv. The performance guarantee will not be refunded by the Municipality of Clarington unless the works have been inspected by municipal forces and deemed to be complete and satisfactory."

Road Dedication

A 5.00 metre road widening on Nash Road is to be dedicated to the Municipality free and clear of any encumbrances.

A 3.00 metre road widening on Hancock Road is to be dedicated to the Municipality free and clear of any encumbrances.

Road Excavation

The excavation of Hancock Road and/or Nash Road is not permitted between December 1st and April 30th. An appropriate clause must be included in the Site Plan agreement.

Utility Concerns

All utilities such as hydro, telephone and cable television within the streets of this development must be installed underground for both primary and secondary services.

Roads and Traffic

Currently, Nash Rd. and Hancock Rd. are constructed to a rural road section. The Municipality and the Region of Durham have not planned, designed or budgeted for the

reconstruction to a full urban standard of and extension of services on Nash Rd. and Hancock Rd. If the applicants wish to proceed in advance of this work, they will be required to bring the roads up to a full Urban Standard.

The applicant will be required to submit a Traffic Impact Study (TIS) which assesses current traffic operations, future traffic operations and future traffic operations with development traffic added. The study must include an analysis of Nash Rd. and its intersections with Hancock Rd., Harry Gay Dr. and Courtice Rd. the TIS should also include bike lanes on Nash Road. The applicant should submit a Terms of Reference to the Region and Municipality.

The study will be subject to the approval of the Director of Engineering Services and the Region of Durham.

Functional Servicing Report

The applicant will be required to submit a Functional Servicing Report, supported by appropriate studies and plans, satisfactory to the Director of Engineering. Such report shall assess and verify all aspects of the proposed development to ensure conformity with the Municipality's Engineering Design Guidelines and good engineering principles including:

- i. Minor and major stormwater design including verifying that any existing connecting sewers will accommodate the proposed flows and overland flow routes will be suitable.
- ii. Stormwater quantity and quality provisions, including verification of all capacities. Infiltration targets should be included.
- iii. Preliminary lot grading verifying maximum and minimum grades can be achieved with the proposed road configuration to avoid sloping between properties and cross sections demonstrating how the proposed lots will be accommodated with abutting lands.
- iv. All other aspects ensuring the proposed street layout and works can be accommodated by existing infrastructure and abutting private lands while meeting all Municipal criteria.

Reimbursement of Oversized or External Works

The Owner acknowledges that certain works, services and facilities which directly benefit the Lands were constructed, paid for or otherwise provided by certain earlier developing owners. The Owner further acknowledges that the Municipality undertook to use its best efforts to recover a proportionate share of the cost of such works, services and facilities from future benefitting owners and to reimburse the front-ending owners accordingly. An Authorization to Commence shall therefore not be issued for any Works unless the Owner has paid these monies to the Municipality as a recovery payment which amount the Municipality shall hold in trust for and on behalf of the front-ending owners. Further discussion will be required on the amount.

Corner Lot Entrances

The applicant must submit a plan drawing indicating the proposed entrance and driveway location for all corner lots. The proposed entrances must conform to all current zoning requirements. Any future dwellings constructed on corner lots within the subject draft plan must have entrances, driveways and garages that are compatible with the required plan. Kinked driveways will not be permitted. The final plan is subject to the approval of the Director of Engineering Services prior to the approval of this draft plan.

On-Street Parking

The applicant will be responsible to provide an On-Street Parking Plan satisfactory to the Director of Engineering Services.

Parks Division

The applicant will be required to provide an appropriate cash contribution in lieu of the normal parkland dedication.

Performance Guarantee

A works cost estimate is required for any external works deemed necessary by the Director of Engineering Services to facilitate this development. The applicant's engineer is responsible for providing this estimate:

The applicant will be responsible to provide a Road Damage Deposit in the amount of \$4000.00.

The applicant will be responsible to provide a performance guarantee in the amount of the works cost estimate and the road damage deposit. The deposit will be refunded when all works and restoration have been completed to the satisfaction of the Director of Engineering Services. Any decision with respect to the release of the guarantee will be made at the sole discretion of the Director of Engineering Services.

General Requirements and Conditions

All works and services must be designed and constructed in accordance with the Municipality of Clarington Design Criteria and Standard Drawings, provisions of the Municipality Development By-Law and all applicable legislation and to the satisfaction of the Director of Engineering Services.

Durham Region Works Department;

1828 to 1840 Nash Road and 3090 to 3158 Hancock Road

Density

The servicing inquiry is for 82 single family homes and 61 townhouse units for a total of 143 units within the subject lands which equates to a theoretical population of 470 people. Based on this theoretical population, the sanitary flow would equate to approximately 9 l/s.

Water Supply

The subject property is located within the Zone 2 water supply system for Oshawa/Courtice. The estimated static water pressure for this area ranges between 407 kpa (59 psi) to 485 kpa (70 psi).

Water supply to future Broome Avenue and Street 'C' is available from the existing 150 mm watermain located on Broome Avenue at Duval Street and from the existing 200 mm watermain on Hancock Road. Water supply to future Tabb Avenue, Street 'A' and Street 'B' is available from the existing 200 mm watermain located on Tabb Avenue at Duval Street and from the future Broome Avenue watermain extension.

Water supply to the townhouse units fronting Hancock Road is available from the existing 200 mm watermain on Hancock Road or from the extended 150 mm watermain on future Broome Avenue

Water supply to the condominium units fronting Nash Road is available from either the 400 mm watermain on Nash Road or from the extended watermain on future Tabb Avenue.

Clarification is required as to whether the townhouse units will be freehold or condominium units. The Regional Water Supply System By-Law will only permit one domestic water service and one fire line for each condominium townhouse block.

Sanitary Servicing

Sanitary servicing to future Broome Avenue and Street 'C' is available from the existing 200 mm sanitary sewer located on Broome Avenue at Duval Street. Sanitary servicing to future Tabb Avenue, Street 'A' and Street 'B' is available from the existing 200 mm sanitary sewer on Tabb Avenue at Duval Street.

Sanitary servicing to the townhouse units fronting Hancock Road at future Broome Avenue will be available from the extended 200 mm sanitary sewer on future Broome Avenue.

Sanitary servicing to the townhouse units fronting Nash Road is available from either the extension of a sanitary sewer on Nash Road from the existing 300 mm sanitary sewer located approximately 54 m east of Harry Gay Drive or from the extended sanitary sewer on future Tabb Avenue.

Transportation

We will require the submission of a Traffic Impact Study (TIS). The TIS will need to follow Regional Traffic Impact Study Guidelines. The applicant should contact both the Region and the Municipality of Clarington to agree the scope of the study prior to submitting the TIS.

Waste Management

The applicant should clarify which of the townhouse units are intended to be serviced with municipal waste collection vehicles. In order to provide municipal waste collection, the internal driveway must meet the minimum design standards and specifications outlined in the Region's Waste By-Law. If the internal driveway does not meet these standards, private waste collection will be required.

Development Charges

The following Regional development charges are applicable and valid until June 30, 2018:

- Single Detached Dwelling - \$27,781 per unit
- Medium Density (Townhouse) Dwelling - \$22,376 per unit

Durham Region Planning Department:

1828-1840 Nash Road and 3090-3158 Hancock Road

	Existing	Requested/Proposed
Region Official Plan Designation	Living Areas	No change
Clarington Official Plan Designation	Urban Residential	No change
Zoning By-law 84-63	A (Agricultural) and EP (Environmental Protection)	Appropriate Residential Zones to permit single detached dwellings and block townhouses and implement the proposed site and building designs
Use	Mostly single detached dwellings on large lots fronting Hancock Road and Nash Road 3090 Hancock Road – automobile recycling yard and accessory buildings	82 single detached dwellings north and south of the extension of Broome Ave from Hancock Road Total of 61 townhouse units located north and south of Broome Ave extension and west of Hancock Ave and located north of Nash Road with access off of a private laneway from Tabb Avenue and access off of private laneways off of Broome Ave. 1840 Nash Road to be severed with the existing single detached dwelling proposed to be severed.

The Region has reviewed the proposed developments and offers the following preliminary comments. The policies and provisions of the Regional Official Plan will be considered during the processing of future development applications.

Conformity to the Regional Official Plan

The Region of Durham Official Plan (ROP) designates the subject lands as "Living

Areas” in the Urban System. Living Areas shall be used predominantly for housing purposes and accommodate a full range of housing options at higher densities by intensifying and redeveloping existing areas, particularly along arterial roads.

The applicant’s proposals provides for an array of housing and intensification in the Hancock Neighbourhood. The proposed residential densities shall be appropriate for the area as determined by the municipality.

Development Adjacent to Arterial Roads

The ROP designates Courtice Road and Nash as Type “A” and Type “B” Arterial Roads, respectively. Section 11.3.34 of the ROP requires that in consideration of development applications abutting arterial roads where access opportunities are limited, development patterns that promote pedestrian connectivity and permeability will be supported by:

- minimizing the amount of reverse lot frontages along arterial roads;
- promoting alternatives to reverse lot frontages such as window streets and cul-de-sacs adjacent to the arterial road;
- providing noise attenuation walls or fencing, where applicable, along the sideyard of lots adjacent to arterial roads; and
- establishing direct visual and pedestrian connections from proposed uses and/or local streets and to arterial roads.

The lots that are proposed to have frontage on Hancock Road, Nash Road and Courtice Road appear to be in conformity with the policies of the ROP. However, private roadways and those lots with rear lane access will require further comments from Regional Works and the Municipality of Clarington as to their road design and functionality.

Road Patterns and Pedestrian Connectivity

Section 8.2.1 of the ROP requires that Urban Areas be planned and developed to incorporate a grid system of arterial roads, and collector roads where necessary, which provides for a transit-supportive road pattern while recognizing environmental constraints. Section 11.3.4 of the ROP requires that road widening dedications be provided to the satisfaction of the Regional Works Department where required.

Section 8B.2.3c) of the ROP requires that regard shall be given for the provision of convenient pedestrian access to public transit, educational facilities and parks. Section 2.3.7 of the ROP considers the establishment of pedestrian, bicycle and bridle paths in any designation, providing that the functions and features of key natural heritage/hydrologic features (KNHHF) are not adversely affected.

The proposed development west of Hancock Road appears to line up with the existing/draft plan approved residential uses to the west. Broome Avenue and Tabb Avenue road connections should be included in the scope of the proposed subdivision application so that residents have access to bus and transit available on Harry Gay Drive through the existing subdivision to the west.

The proposed development east of Courtice Road should incorporate walkways to connect with any trails in the Greenspace/Special Study Area 7 identified in the Hancock Neighbourhood Design Plan.

Comments on Concept A and B will be provided once development limits are determined for the Courtice Road proposal.

Regional Cycling Plan:

In November 2012, Durham Regional Council approved its updated Regional Cycling Plan (RCP) which focused on the development of a broader region-wide cycling network. As per Section 11.3.22 of the ROP, the RCP:

- recognizes that cycling facilities form part of a balanced transportation system;
- establishes a network of on and off road cycling facilities across the Region;
- provides policies and programs to address matters of encouragement, enforcement, education, engineering and funding; and
- recommends actions for the implementation of the Plan's policies programs, and cycling network.

The RCP recognizes a "shared roadway" for cyclists along Nash Road. The proposed development adjacent to Nash Road should have regard for active modes of transportation as identified in the RCP.

Environmental Protection:

The ROP generally identifies key natural heritage/hydrologic features (KNHFF) surrounding and abutting the proposed developments. Sections 2.3.15 and 8.1.6 of the ROP do not permit development or site alterations within a KNHFF and requires that its functions located either within or outside of Urban Areas be protected from the impacts of urbanization. In consultation with the municipality and Central Lake Ontario Conservation Authority (CLOCA) the development limits of the proposed plans of subdivision will need to be determined as part of any development application.

Provincial Policy Statement:

The Provincial Policy Statement (PPS) provides policy direction for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment. New development in designated growth areas should occur adjacent to the existing built-up area and shall have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities. The proposed developments appear to be consistent with the policies of the PPS.

Growth Plan for the Greater Golden Horseshoe (GPGGH):

The majority of the subject lands are within the "Built-up Area" of the GPGGH. The GPGGH includes policies to direct development to settlement areas, and provides

direction for intensification targets within the Built-Up Area. Properties to be developed on portions of 3091, 3121 and 3133 Courtice Road are within the “Designated Greenfield Area” of the GPGGH. Proposed development in the Designated Greenfield Area requires a Region-wide minimum density target of not less than 50 residents and jobs per hectare.

These proposed developments will provide for future residential development within an existing residential area and within the Hancock Neighbourhood of the Clarington Official Plan, contribute to the Region’s and Clarington’s annual intensification of units and appears to generally conform to the policies of the GPGGH subject to further analysis of the proposed densities.

Delegated Provincial Plan Review Responsibilities

We have completed the screening of the subject site for delegated Provincial Plan Review responsibilities.

Site-Screening Questionnaire or Phase One Environmental Site Assessment

The applicant proposes residential development on several properties. Map F1 of the Municipality of Clarington Official Plan identifies “Waste Disposal Assessment Areas” in the northwest area of Hancock Road and Nash Road. The applicant’s consultant has also identified an automobile recycling yard at 3090 Hancock Road.

In keeping with the Provincial Brownfields Regulation (Ontario Regulation 153/04, as amended), the applicant will be required to complete the following items to address potential site contamination on the properties:

- Completion of the attached “Site-Screening Questionnaire”, by a Qualified Person (QP); or
- a “Phase One Environmental Site Assessment” (ESA) that is Record of Site Condition (RSC) Compliant supported with a Regional Reliance Letter and Certificate of Insurance for the site.

Completion of the Regional Reliance Letter and Certificate of Insurance by the QP will be required to allow the Region to rely on the environmental work.

If the Site-Screening Questionnaire identifies a potentially contaminating activity(s) on the properties, the Region will require a Phase One ESA that is RSC Compliant. Pending the results of the RSC Compliant Phase One ESA, further studies such as a Phase Two ESA (RSC Compliant) and a RSC through the MOECC may be required.

Environmental Impact Study

According to the ROP, areas on the properties contain Key Natural Heritage and/or Hydrologic Features (KNHHF). To determine the extent of these environmental features, the applicant will be required to provide an Environmental Impact Study (EIS), or an equivalent environmental analysis, in consultation with CLOCA and the municipality. The applicant will be required to confirm the scope of the EIS with the Region of Durham, the municipality and CLOCA, prior to the submission of a development application.

Noise Impact Study

The proposed developments are abutting and/or in close proximity to arterial roads. A Noise Impact Study, prepared by an acoustical consultant to support the proposed residential developments will be required to be submitted with any development application.

Archaeological Site Assessment

According to the Region's Archaeological Potential Model mapping, the subject properties are located within proximity to a zone of archaeological potential. The applicant will be required to provide an *Archaeological Site Assessment*, prepared by an Archaeologist. The study should be submitted to the Ministry of Tourism, Culture and Sport (MTCS) for their review and clearance.

Regional Servicing, Transportation, and Durham Regional Transit

Comments regarding Regional servicing, transportation requirements associated with road access and the extension of local roads through the subject lands, and transit will be provided by the respective review agencies.

Regional Development Review Fee

- Draft Plan of Subdivision - \$3,000;
- Draft Plan of Common Elements Condominium - \$1,000;
- Area Official Plan Amendment - \$2,000; and
- Major Rezoning By-law Amendment – fee is waived assuming that an application will be submitted concurrently with any or all of the above-noted planning applications. If not, this fee will total \$1,500.

Required for Complete Application

Rezoning/Subdivision/Site Plan Application/Condo Application

- Minutes, application form & fees
- Agency review fees (see above sections for individual fees)

Contact Information:

Name	Division	Telephone Number	Email Address
Brandon Weiler	Clarington Planning Services Department	905.623.3379 x2424	bweiler@clarington.net
Anne Taylor Scott	Clarington Planning Services Department	905.623.3379 x2414	ataylor@clarington.net
Carlo Pellarin	Clarington Planning Services Department	905.623.3379 x2408	cpellarin@clarington.net
Jeff Almeida	Durham Region Works Department	905.6680.7711	jeff.almeida@durham.ca
Stefanie Penney	Central Lake Ontario Conservation Authority	905-579-0411	spenney@cloca.com
Valerie Hendry	Durham Region Planning Department	905.668.7711	valerie.hendry@durham.ca
Randy Reinert	Clarington Emergency & Fire Services	905.623.3379 x2806	rreinert@clarington.net
Stephen Brake	Clarington Operations Department	905.263.2291	sbrake@clarington.net

If there are subsequent applications under the *Planning Act*, a separate preconsultation meeting may be required.

The Minutes of Meeting will expire within 180 days unless otherwise mutually agreed upon.

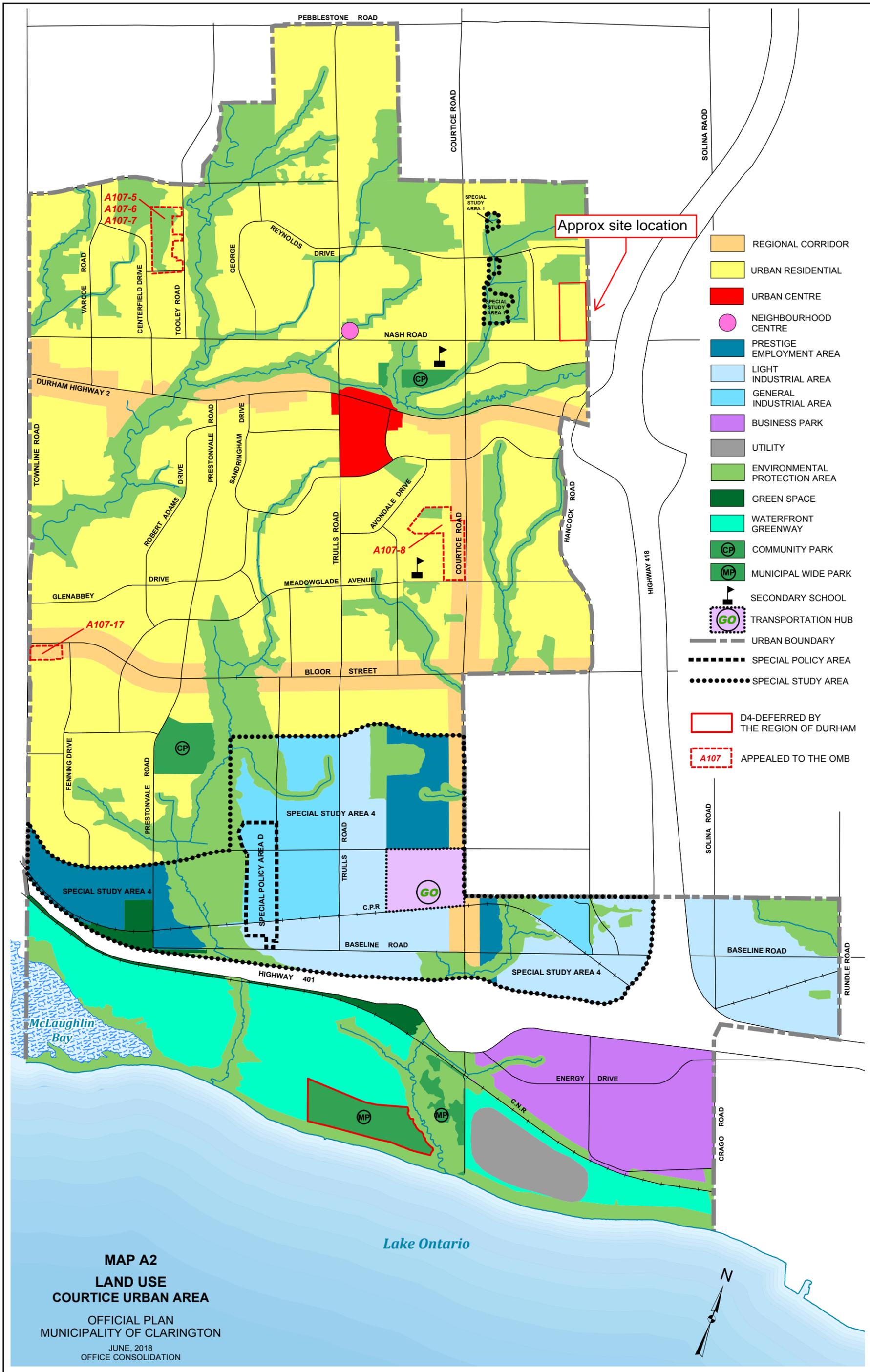
Minutes of Meeting Prepared by: Amanda Hoffman, Clerk II, Planning Services Department

Approved by:  Brandon Weiler, Planner II, Development Review

I concur with the contents of these minutes _____ (Applicant/Owner/Agent Signature)

Appendix C

Policy Schedules & Mapping

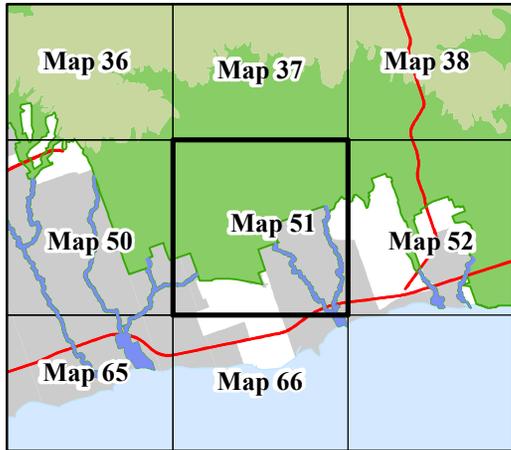


- REGIONAL CORRIDOR
- URBAN RESIDENTIAL
- URBAN CENTRE
- NEIGHBOURHOOD CENTRE
- PRESTIGE EMPLOYMENT AREA
- LIGHT INDUSTRIAL AREA
- GENERAL INDUSTRIAL AREA
- BUSINESS PARK
- UTILITY
- ENVIRONMENTAL PROTECTION AREA
- GREEN SPACE
- WATERFRONT GREENWAY
- CP COMMUNITY PARK
- MP MUNICIPAL WIDE PARK
- GO SECONDARY SCHOOL
- GO TRANSPORTATION HUB
- URBAN BOUNDARY
- SPECIAL POLICY AREA
- SPECIAL STUDY AREA
- D4-DEFERRED BY THE REGION OF DURHAM
- A107 APPEALED TO THE OMB

MAP A2
LAND USE
COURTICE URBAN AREA
 OFFICIAL PLAN
 MUNICIPALITY OF CLARINGTON
 JUNE, 2018
 OFFICE CONSOLIDATION



greenbelt



LEGEND



- Greenbelt Area*
- Protected Countryside
- Natural Heritage System
- Towns / Villages
- Urban River Valleys
- Niagara Escarpment Plan Area
- Oak Ridges Moraine Area
- External Connections
- Settlement Areas Outside the Greenbelt
- Upper Tier Municipal Boundaries
- Lower & Single Tier Municipal Boundaries
- Lots and Concessions
- Major Road or Highway
- Minor Road
- F.N. First Nations

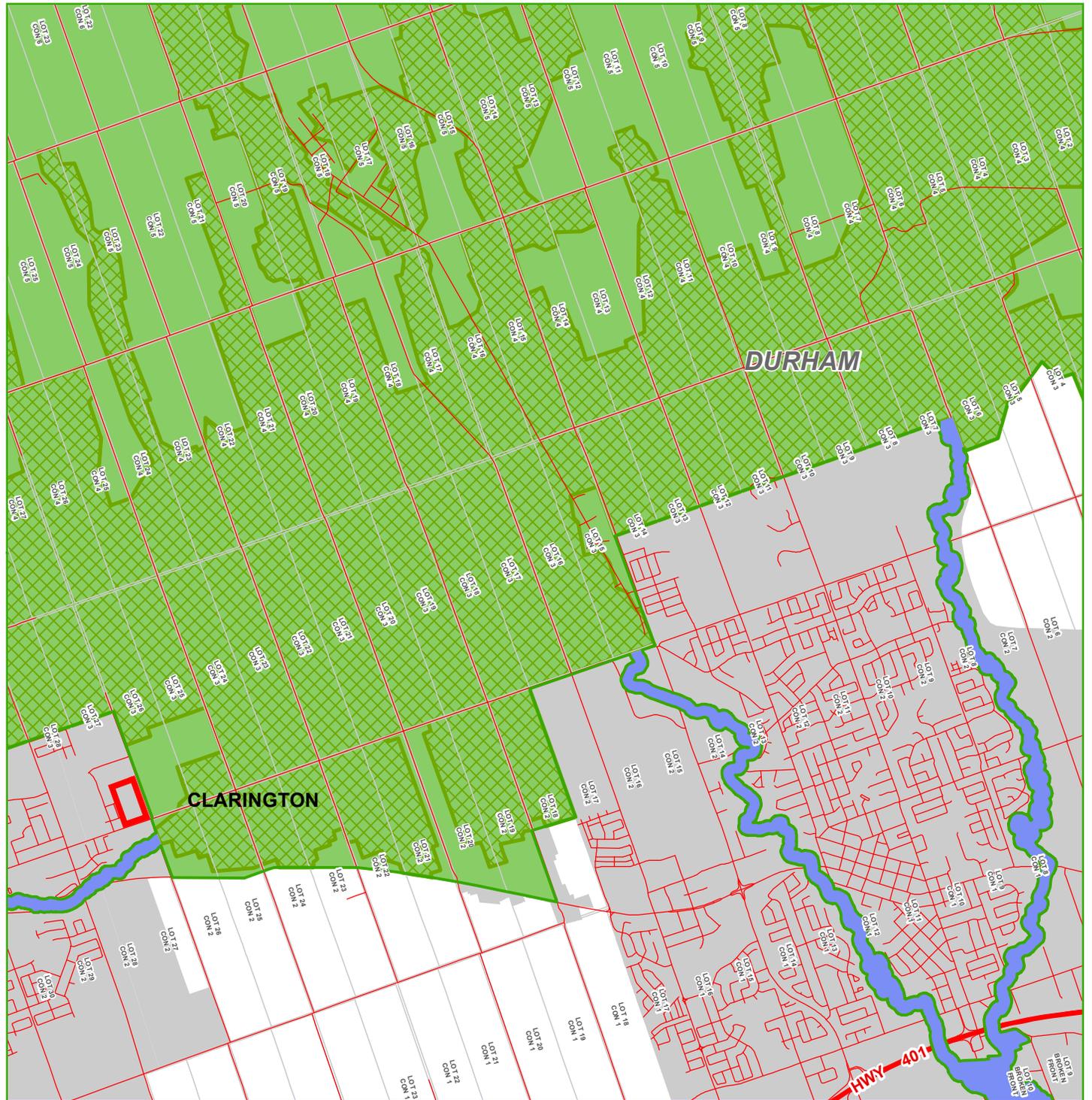
The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations of features or roads nor as a guide to navigation.

Settlement boundaries generally reflect information provided by the relevant municipality. For precise boundaries and locations of Settlement Areas (Greenbelt Towns/Villages and Hamlets) the appropriate municipalities should be consulted.

Source of Information:
Produced by and using data sources from the Ministry of Municipal Affairs, Ministry of Natural Resources and Forestry and the Ministry of Agriculture, Food and Rural Affairs.

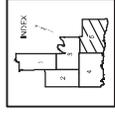
Projection: UTM Zone 17 NAD83
© 2017, Queen's Printer for Ontario

* Ontario Regulation 59/05, as amended.





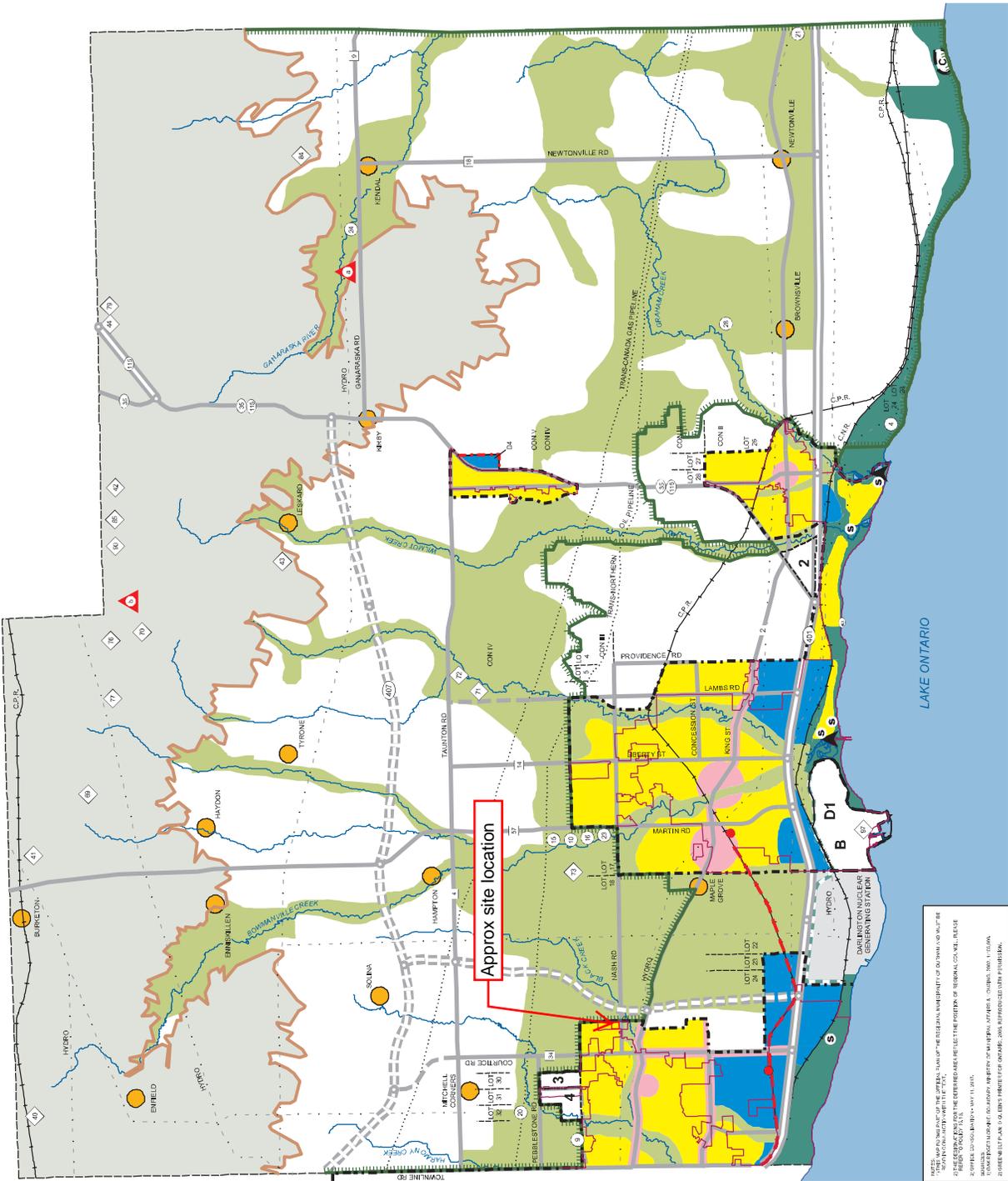
**OFFICIAL PLAN OF THE
REGIONAL MUNICIPALITY
OF DURHAM**



**SCHEDULE 'A' - MAP 'A5'
REGIONAL STRUCTURE**

LEGEND

URBAN SYSTEM	URBAN AREA BOUNDARY DOTTED	URBAN AREA BOUNDARY DOTTED	REGIONAL CENTRE CIRCLE	REGIONAL CORRIDOR SOLID	EMPLOYMENT AREAS DIAGONAL HATCH	AREAS DEVELOPABLE ON MUNICIPAL WATER SYSTEMS DIAGONAL HATCH	AREAS DEVELOPABLE ON PRIVATE WASTE DISPOSAL SYSTEMS DIAGONAL HATCH	AREAS DEVELOPABLE ON MUNICIPAL WASTE DISPOSAL SYSTEMS DIAGONAL HATCH
	URBAN GROWTH CENTRE STAR	LINKING AREAS HATCH	AREAS DEVELOPABLE ON FULL/PARTIAL MUNICIPAL SERVICES HATCH	AREAS DEVELOPABLE ON PRIVATE WASTE DISPOSAL SYSTEMS HATCH	BUILT BOUNDARY SOLID	MUNICIPAL SERVICE DOTTED	PRIME AGRICULTURAL AREAS DOTTED	COUNTRY RESIDENTIAL SUBDIVISION (SEE TABLE E2 FOR DESCRIPTION) CIRCLE
	URBAN AREA BOUNDARY DOTTED	URBAN GROWTH CENTRE STAR	LINKING AREAS HATCH	AREAS DEVELOPABLE ON FULL/PARTIAL MUNICIPAL SERVICES HATCH	AREAS DEVELOPABLE ON PRIVATE WASTE DISPOSAL SYSTEMS HATCH	BUILT BOUNDARY SOLID	MUNICIPAL SERVICE DOTTED	RURAL SETTLEMENTS: HAMLETT CIRCLE
	URBAN AREA BOUNDARY DOTTED	URBAN GROWTH CENTRE STAR	LINKING AREAS HATCH	AREAS DEVELOPABLE ON FULL/PARTIAL MUNICIPAL SERVICES HATCH	AREAS DEVELOPABLE ON PRIVATE WASTE DISPOSAL SYSTEMS HATCH	BUILT BOUNDARY SOLID	MUNICIPAL SERVICE DOTTED	RURAL SETTLEMENTS: HAMLETT CIRCLE
	URBAN AREA BOUNDARY DOTTED	URBAN GROWTH CENTRE STAR	LINKING AREAS HATCH	AREAS DEVELOPABLE ON FULL/PARTIAL MUNICIPAL SERVICES HATCH	AREAS DEVELOPABLE ON PRIVATE WASTE DISPOSAL SYSTEMS HATCH	BUILT BOUNDARY SOLID	MUNICIPAL SERVICE DOTTED	RURAL SETTLEMENTS: HAMLETT CIRCLE



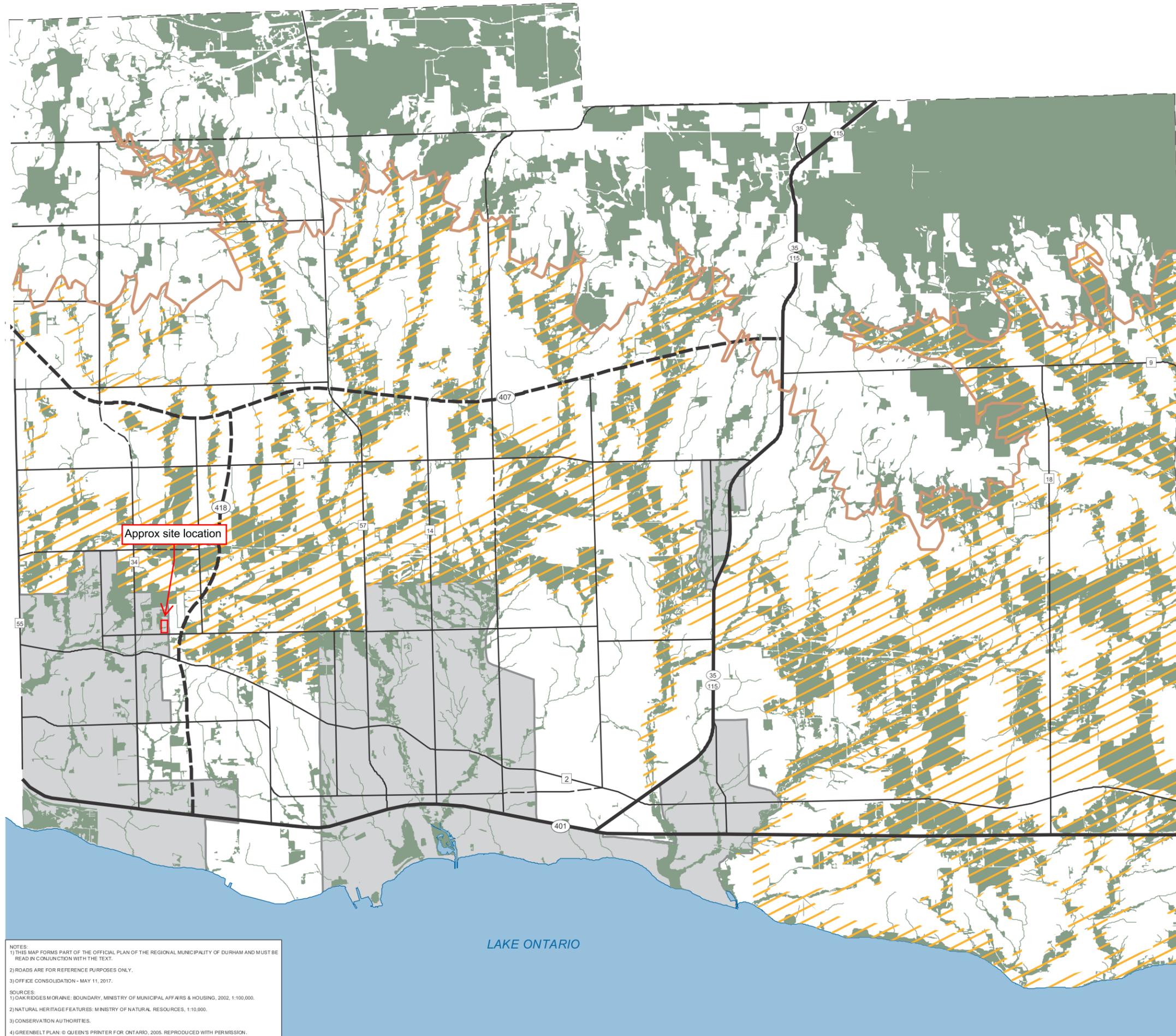
NOTES:
1. THIS MAP IS ONE OF THE OFFICIAL PLANS OF THE REGIONAL MUNICIPALITY OF DURHAM AND WILL BE
2. THE REGIONAL PLAN FOR THE DETERMINED AREA IS THE PROVISION OF REGIONAL POLICY, DEVELOPMENT
3. CONSULT THE DURHAM REGIONAL OFFICE FOR A COMPLETE LIST OF ALL ZONES AND POLICIES.
4. CONSULT THE DURHAM REGIONAL OFFICE FOR A COMPLETE LIST OF ALL ZONES AND POLICIES.
5. CONSULT THE DURHAM REGIONAL OFFICE FOR A COMPLETE LIST OF ALL ZONES AND POLICIES.



**SCHEDULE 'B' - MAP 'B1e'
GREENBELT NATURAL
HERITAGE SYSTEM &
KEY NATURAL HERITAGE
AND HYDROLOGIC
FEATURES**

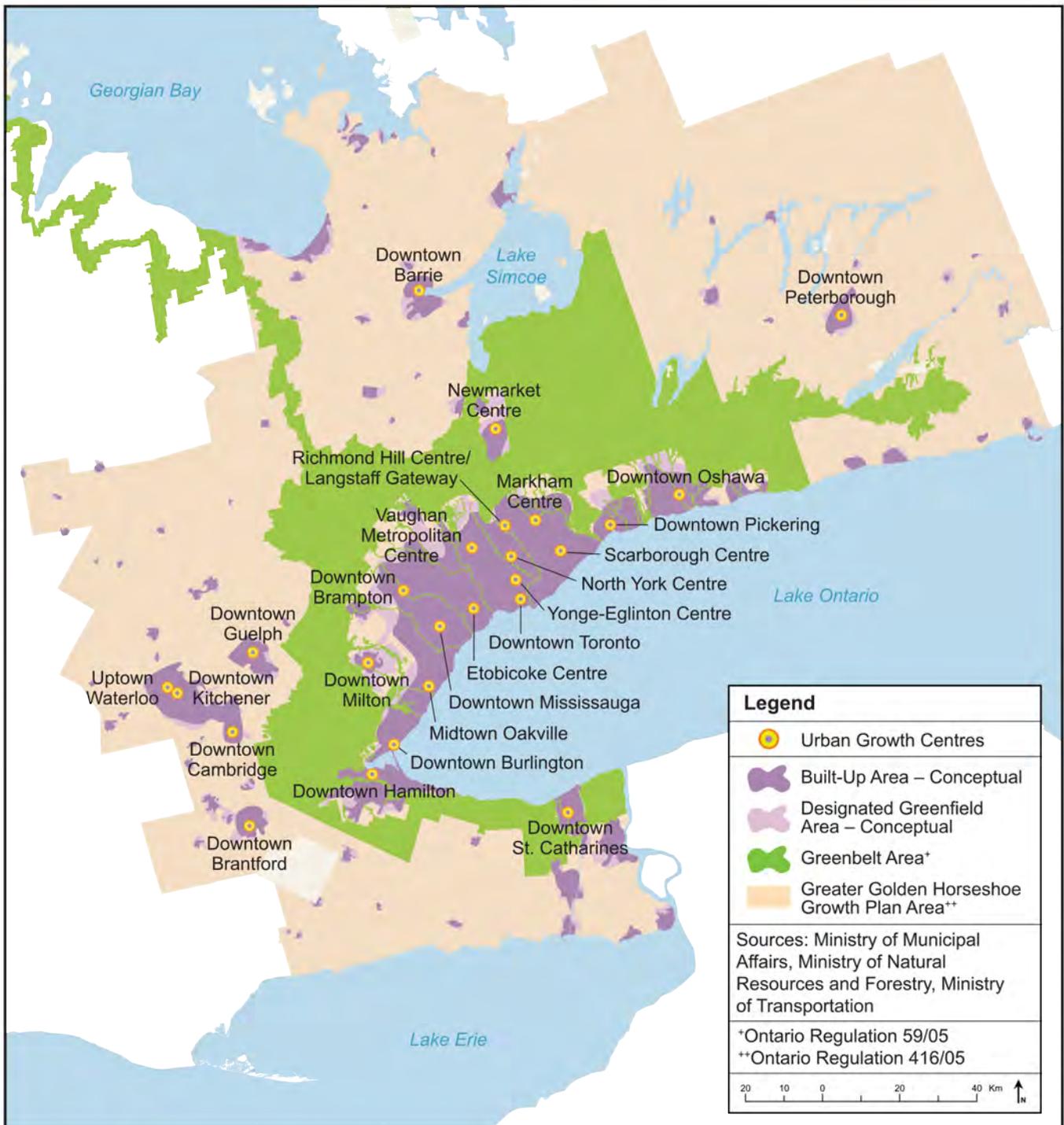
LEGEND

-  KEY NATURAL HERITAGE AND HYDROLOGIC FEATURES
-  GREENBELT NATURAL HERITAGE SYSTEM
-  OAK RIDGES MORaine CONSERVATION PLAN AREA BOUNDARY
-  URBAN AREA
-  LANDS APPEALED TO OMB, REFER TO POLICY 14.13.7.
-  SPECIFIC POLICY AREA



NOTES:
1) THIS MAP FORMS PART OF THE OFFICIAL PLAN OF THE REGIONAL MUNICIPALITY OF DURHAM AND MUST BE READ IN CONJUNCTION WITH THE TEXT.
2) ROADS ARE FOR REFERENCE PURPOSES ONLY.
3) OFFICE CONSOLIDATION - MAY 11, 2017.
SOURCES:
1) OAK RIDGES MORaine: BOUNDARY, MINISTRY OF MUNICIPAL AFFAIRS & HOUSING, 2002, 1:100,000.
2) NATURAL HERITAGE FEATURES: MINISTRY OF NATURAL RESOURCES, 1:10,000.
3) CONSERVATION AUTHORITIES.
4) GREENBELT PLAN: © QUEEN'S PRINTER FOR ONTARIO, 2005. REPRODUCED WITH PERMISSION.

LAKE ONTARIO



**SCHEDULE 4
 Urban Growth Centres**

PLACES TO GROW

GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE, 2017

Note: The information displayed on this map is not to scale, does not accurately reflect approved land-use and planning boundaries, and may be out of date. For more information on precise boundaries, the appropriate municipality should be consulted. For more information on Greenbelt Area boundaries, the Greenbelt Plan should be consulted. The Province of Ontario assumes no responsibility or liability for any consequences of any use made of this map.

Appendix D

MNRF Correspondence

Aurora MNRF Information Request Form

Name:	<input type="text" value="Daniel J. Bourassa"/>
Company Name:	<input type="text" value="Dillon Consulting Limited"/>
Proponent Name:	<input type="text" value="Greg Gilbert - Trolleybus Urban Developments Inc."/>
Phone Number:	<input type="text" value="289.9891.9136"/>
Email Address:	<input type="text" value="dbourassa@dillon.ca"/>
Project Name:	<input type="text" value="Trolleybus Developments - Nash & Hancock"/>
Property Location:	<input type="text" value="Clarington - 1828, 1832, 1834, 1836 and 1840 Nash Road & 3090 Hancock"/>
Township:	<input type="text" value="Clarington - Regional Municipality of Durham"/>
Lot & Concession:	<input type="text" value="See attached figure."/>
UTM Coordinates:	Easting (X) <input type="text"/> Northing (Y) <input type="text"/>

Brief Description of Undertaking	<input type="text" value="Single residential and townhouse development"/>
---	---

Have you previously contacted someone at MNRF for information on this site? Yes No

If yes, when and who?	<input type="text"/>
-----------------------	----------------------

Provide a map of accurate scale to illustrate footprint/study area of the proposed activity in relation to the surrounding landscape (e.g. property boundaries, roads, waterbodies, natural features, towns, transmission corridors, and other human landmarks). Use of aerial photography is strongly encouraged. Include scale, north arrow and legend.

ATTACHMENTS - I have attached a:

<input type="checkbox"/> Picture	<input checked="" type="checkbox"/> Map	<input type="checkbox"/> Other
----------------------------------	---	--------------------------------

REQUEST - I would like to request the following information for the property identified above:

**Requires an appointment and remittance of fees. See Information Request Guideline for details.*

<input type="checkbox"/> *Fish Dot Information (fish and other aquatic species found in a particular area of a watercourse)	<input checked="" type="checkbox"/> Species at Risk
	<input checked="" type="checkbox"/> Other <input type="text" value="Natural Heritage"/>

For additional natural heritage information please visit [Land Information Ontario | Ontario.ca](http://LandInformationOntario.Ontario.ca)

Please forward the completed form to: esa.aurora@ontario.ca

Or send by mail:

**Aurora District, Ministry of Natural Resources
and Forestry**

50 Bloomington Rd Aurora, ON L4G 0L8



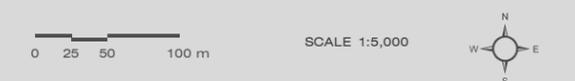
NASH ROAD AND HANCOCK ROAD

SPECIES AT RISK SCREENING

PROJECT LOCATION

FIGURE 1

- Project Location
- Road



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF

MAP CREATED BY: LK
 MAP CHECKED BY: DB
 MAP PROJECTION: NAD 1983 UTM Zone 17N



STATUS: DRAFT
 DATE: 2017-07-06

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

November 17, 2017

Daniel Bourassa

1155 North Service Road West Unit 14
Oakville, Ontario,
L6M 3E3
Phone: 905.901.2912 ext. 3417

DBourassa@dillon.ca

**Re: Request for Information for 1828, 1832, 1834, 1836 and 1840 Nash Road & 3090
Hancock, Town of Clarington, Regional Municipality of Durham**

Dear Mr. Bourassa,

In your email dated November 3, 2017 you requested information on Species at Risk and rare species occurring on or adjacent to the above mentioned location. The species listed below have the potential to occur in your study and may require further assessment or field studies to determine presence:

- Butternut (Endangered)
- Little Brown Myotis (Endangered)
- Northern Myotis (Endangered)
- Tri-coloured Bat (Endangered)
- Eastern Small-footed Myotis (Endangered)
- Chimney Swift (Threatened)
- Barn Swallow (Threatened)
- Bank Swallow (Threatened)
- Monarch (Special Concern)
- Wood Thrush (Special Concern)
- Eastern Wood-Pewee (Special Concern)
- Snapping Turtle (Special Concern)

Additional natural heritage information including information on wetlands and Areas of Natural and Scientific Interest (ANSIs) can be obtained through Land Information Ontario (LIO).

The species listed above may receive protection under the *Endangered Species Act, 2007* (ESA) and thus, an approval from MNR may be required if the work you are proposing could cause harm to these species or their habitats. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the ESA or the status and protection levels of currently listed species may change.

We require more detailed information on the proposed project in order to assess the impacts of the works on Species at Risk. *When project details have been determined*, please fill out an Information Gathering Form (IGF) for any *threatened* or *endangered* species listed in the provided letter and submit it to our office (to ESA.Aurora@ontario.ca). The IGF can be found [here](#) (along with its associated [guide](#)). Please include detailed descriptions of the undertakings such as proposed timing and phasing of the project and details on what is required at each phase.

All sections and tables should be filled out in their entirety – incomplete forms will be returned and may delay the review process. Any applicable supplemental information that will assist with the review process should also be submitted with the IGF (e.g. field survey results, site plan/drawings, ELC mapping, etc.). Please note that forms are reviewed in the order in which they are received by MNRF and we will contact you with our response once the review is complete.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario. If development or site alteration is proposed, surveys by a qualified professional may need to be undertaken in the future to confirm presence or absence of sensitive species or features.

This Species at Risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any Species at Risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact ESA.aurora@ontario.ca.

Sincerely,



Melanie Shapiera
Management Biologist
Ontario Ministry of Natural Resources and Forestry, Aurora District

Appendix E

Plant List

Table E1: Plant List

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	CC ⁴
<i>Abies balsamea</i>	Balsam Fir	---	---	S5	5
<i>Acer negundo</i>	Manitoba Maple	---	---	S5	0
<i>Acer platanoides</i>	Norway Maple	---	---	SNA	---
<i>Acer saccharinum</i>	Silver Maple	---	---	S5	5
<i>Acer x freemanii</i>	Freeman's Maple	---	---	SNA	---
<i>Achillea millefolium</i>	Common Yarrow	---	---	SE	---
<i>Alliaria petiolata</i>	Garlic Mustard	---	---	SNA	---
<i>Alnus glutinosa</i>	European Alder	---	---	SNA	---
<i>Alopecurus pratensis</i>	Field Foxtail	---	---	SNA	---
<i>Ambrosia artemisiifolia</i>	Annual Ragweed	---	---	S5	0
<i>Apocynum cannabinum</i>	Hemp Dogbane	---	---	S5	3
<i>Asclepias syriaca</i>	Common Milkweed	---	---	S5	0
<i>Asparagus officinalis</i>	Garden Asparagus	---	---	SNA	---
<i>Betula papyrifera</i>	Paper Birch	---	---	S5	2
<i>Brassica juncea</i>	Chinese/Brown/Indian Mustard	---	---	SNA	---
<i>Bromus inermis</i>	Awnless Brome	---	---	SNA	---
<i>Carex arctata</i>	Black Sedge	---	---	S5	5
<i>Carex vulpinoidea</i>	Fox Sedge	---	---	S5	3
<i>Chaenorhinum minus</i>	Dwarf Snapdragon	---	---	SNA	---
<i>Cichorium intybus</i>	Chicory	---	---	SNA	---
<i>Cirsium arvense</i>	Canada Thistle	---	---	SNA	---
<i>Cirsium vulgare</i>	Bull Thistle	---	---	SNA	---
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	---	---	S5	6
<i>Cornus sericea ssp sericea</i>	Red-osier Dogwood	---	---	S5	2
<i>Cynanchum rossicum</i>	European Swallow-wort	---	---	SNA	---
<i>Cypripedium parviflorum var. pubescens</i>	Large Yellow Lady's-slipper	---	---	S5	5
<i>Dactylis glomerata</i>	Orchard Grass	---	---	SNA	---
<i>Daucus carota</i>	Wild Carrot	---	---	SNA	---
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	---	---	S5	5

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	CC ⁴
<i>Echinocystis lobata</i>	Wild Mock-cucumber	---	---	S5	3
<i>Echium vulgare</i>	Common Viper's-bugloss	---	---	SNA	---
<i>Elaeagnus umbellata</i>	Autumn Olive	---	---	SNA	---
<i>Equisetum arvense</i>	Field Horsetail	---	---	S5	0
<i>Equisetum pratense</i>	Meadow Horsetail	---	---	S5	8
<i>Erigeron annuus</i>	Annual Fleabane	---	---	S5	0
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	---	---	S5	1
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	---	---	S5	2
<i>Fragaria virginiana</i>	Wild Strawberry	---	---	S5	2
<i>Fraxinus pennsylvanica</i>	Green Ash	---	---	S4	3
<i>Geranium robertianum</i>	Herb-Robert	---	---	S5	---
<i>Geum aleppicum</i>	Yellow Avens	---	---	S5	2
<i>Hieracium kalmii</i>	Canada Hawkweed	---	---	SU	7
<i>Hordeum jubatum ssp. jubatum</i>	Foxtail Barley	---	---	S5	---
<i>Hypericum punctatum</i>	Common St. John's-wort	---	---	S5	5
<i>Impatiens balsamina</i>	Himalayan Balsam	---	---	SE	---
<i>Impatiens capensis</i>	Spotted Jewelweed	---	---	S5	4
<i>Juglans nigra</i>	Black Walnut	---	---	S4	5
<i>Juncus tenuis</i>	Path Rush	---	---	S5	0
<i>Lactuca serriola</i>	Prickly Lettuce	---	---	SNA	---
<i>Leonurus cardiaca</i>	Common Motherwort	---	---	SNA	---
<i>Leucanthemum vulgare</i>	Oxeye Daisy	---	---	SNA	---
<i>Linaria vulgaris</i>	Butter-and-eggs	---	---	SNA	---
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil	---	---	SNA	---
<i>Lysimachia ciliata</i>	Fringed Loosestrife	---	---	S5	4
<i>Lythrum salicaria</i>	Purple Loosestrife	---	---	SNA	---
<i>Medicago lupulina</i>	Black Medic	---	---	SNA	---
<i>Melilotus albus</i>	White Sweet-clover	---	---	SNA	---
<i>Melilotus altissimus</i>	Tall Yellow Sweet-clover	---	---	SNA	---
<i>Morus alba</i>	White Mulberry	---	---	SNA	---
<i>Oenothera biennis</i>	Common Evening Primrose	---	---	S5	0

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	CC ⁴
<i>Onoclea sensibilis</i>	Sensitive Fern	---	---	S5	4
<i>Oxalis stricta</i>	European Wood-sorrel	---	---	S5	0
<i>Parthenocissus inserta</i>	Thicket Creeper	---	---	S5	3
<i>Phalaris arundinacea</i>	Reed Canary Grass	---	---	S5	0
<i>Phragmites australis</i>	Common Reed	---	---	SNA	---
<i>Picea abies</i>	Norway Spruce	---	---	SNA	---
<i>Picea glauca</i>	White Spruce	---	---	S5	6
<i>Pinus sylvestris</i>	Scotch Pine	---	---	SNA	---
<i>Plantago major</i>	Common Plantain	---	---	S5	---
<i>Poa pratensis ssp. pratensis</i>	Kentucky Bluegrass	---	---	S5	0
<i>Populus alba</i>	White Poplar	---	---	SNA	---
<i>Populus balsamifera</i>	Balsam Poplar	---	---	S5	4
<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	---	---	S5	4
<i>Populus tremuloides</i>	Trembling Aspen	---	---	S5	2
<i>Potentilla recta</i>	Sulphur Cinquefoil	---	---	SNA	---
<i>Prunus serotina</i>	Wild Black Cherry	---	---	S5	3
<i>Prunus virginiana</i>	Choke Cherry	---	---	S5	2
<i>Quercus rubra</i>	Northern Red Oak	---	---	S5	6
<i>Ranunculus acris</i>	Tall Buttercup	---	---	SNA	---
<i>Rhamnus cathartica</i>	Common Buckthorn	---	---	SNA	---
<i>Rhus hirta</i>	Staghorn Sumac	---	---	S5	1
<i>Ribes americanum</i>	Wild Black Currant	---	---	S5	4
<i>Ribes aureum var. aureum</i>	Golden Current	---	---	SNA	---
<i>Ribes rubrum</i>	Red Currant	---	---	SNA	---
<i>Rosa multiflora</i>	Multiflora Rose	---	---	SNA	---
<i>Rubus idaeus ssp. idaeus</i>	Common Red Raspberry	---	---	SNA	---
<i>Rudbeckia hirta var. hirta</i>	Black-eyed Susan	---	---	SU	0
<i>Rumex crispus</i>	Curly Dock	---	---	SNA	---
<i>Salix alba</i>	White Willow	---	---	SNA	---
<i>Salix amygdaloides</i>	Peach-leaved Willow	---	---	S5	6
<i>Salix babylonica</i>	Weeping Willow	---	---	---	---

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	CC ⁴
<i>Salix candida</i>	Hoary Willow	---	---	S5	10
<i>Salix interior</i>	Sandbar Willow	---	---	S5	3
<i>Salix x pendulina</i>	(<i>Salix babylonica</i> X <i>Salix euxina</i>)	---	---	SNA	---
<i>Scirpus atrovirens</i>	Dark-green Bulrush	---	---	S5	3
<i>Silene vulgaris</i>	Maiden's Tears	---	---	SNA	---
<i>Solanum dulcamara</i>	Climbing Nightshade or Bittersweet Nightshade	---	---	SNA	---
<i>Solidago altissima ssp. Altissima</i>	Eastern Late Goldenrod	---	---	S5	1
<i>Solidago canadensis var. canadensis</i>	Canada Goldenrod	---	---	S5	1
<i>Solidago gigantea</i>	Smooth Goldenrod	---	---	S5	4
<i>Stellaria graminea</i>	Grass-leaved Starwort	---	---	SNA	---
<i>Symphyotrichum ericoides var. ericoides</i>	White Heath Aster	---	---	S5	4
<i>Symphyotrichum lateriflorum</i>	Starved Aster	---	---	S5	3
<i>Symphyotrichum novae-angliae</i>	New England Aster	---	---	S5	2
<i>Thuja occidentalis</i>	Eastern White Cedar	---	---	S5	4
<i>Tilia americana</i>	American Basswood	---	---	S5	4
<i>Trifolium pratense</i>	Red Clover	---	---	SNA	---
<i>Trifolium repens</i>	White Clover	---	---	SNA	---
<i>Tussilago farfara</i>	Colt's-foot	---	---	SNA	---
<i>Typha latifolia</i>	Broad-leaved Cattail	---	---	S5	3
<i>Ulmus americana</i>	American Elm	---	---	S5	3
<i>Urtica dioica ssp. dioica</i>	European Stinging Nettle	---	---	SNA	---
<i>Verbascum thapsus</i>	Common Mullein	---	---	SNA	---
<i>Verbena hastata</i>	Blue Vervain	---	---	S5	4
<i>Vicia cracca</i>	Tufted Vetch	---	---	SNA	---
<i>Vitis riparia</i>	Riverbank Grape	---	---	S5	0

¹Federal Species at Risk Act, ²Provincial Endangered Species Act, ³Provincial Conservation ranking where SNA= Not Applicable, SE= Non-Native species, SU = Currently Unranked; S1= Extremely Rare, S2= Very Rare, S3= Rare, S4= Apparently Secure and S5= Secure, ⁴=Coefficient of Conservatism

Appendix F

Site Photographs

Photo 1

July 4, 2017

CVC_2: Industrial
Yard; 3090
Hancock Road.



Photo 2

July 4, 2017

MEMM4: Fresh-
Moist Mixed
Meadow at the
west end of 3090
Hancock Road.



Photo 3

July 4, 2017

CVR_3: Residential backyard on Nash Road with manicured lawn.



Photo 4

July 4, 2017

CVR_3: Residential backyard on Nash Road with lawn and Red Pine hedgerow.



Photo 5

July 4, 2017

CVR_3:
Unmaintained
section of
backyard that has
grown into a
cultural thicket
swamp (SWT).



Photo 6

July 4, 2018

FOD3: Fresh-Moist
Poplar Deciduous
Forest.



Photo 7

July 4, 2018

FOD3: Fresh-Moist
Poplar Deciduous
Forest.



Photo 8

July 2018

FOCM6-3: Scotch
Pine Plantation.
Representation of
existing edge.



Photo 9

July 2019

FOCM6-3: Scotch Pine Plantation.
Representation of canopy openness.



Photo 10

October 2019

SWT: Cultural Thicket Swamp.



Photo 11

October 2019

SWT: Cultural
Thicket Swamp



Photo 12:

July 4, 2018

TAGM5: Treed
fence row located
on the western
boundary of the
Property with
Fresh-Moist Mixed
Meadow
(MEMM4) in
foreground.



Photo 13

October 2020
 Remnant Drainage
 Feature off
 Hancock Road
 facing west.



Photo 14

October 2020
 Remnant drainage
 feature, facing
 east from
 catchbasin.



Photo 15

October 2019

Example of anthropogenic impacts/influences within remnant drainage feature and Cultural Thicket Swamp (SWT).



Photo 16

October 2019

Example of anthropogenic impacts/influences within remnant drainage feature and Cultural Thicket Swamp (SWT).



Photo 17:

July 19, 2019

Single snag tree identified within the Property in the northwest corner.



Photo 18

July 4, 2017

A Barn Swallow nest built; structure at 3090 Hancock Road. Nest observation was confirmed again in 2018.



Photo 19:

July 4, 2017
 Assumed Barn Swallow observed within the structures at 3090 Hancock Road. Nest observation was confirmed again in 2018.



Photo 20

October 2019
 Catchbasin located just east of the Tabb Avenue cul-de-sac.



Appendix G

Edge Management Plan



DILLON
CONSULTING

TROLLEYBUS URBAN DEVELOPMENT INC.

Hancock Neighbourhood Northwest

Edge Management Plan

DRAFT

DRAFT

Table of Contents

1.0	Introduction	1
2.0	Existing Conditions	2
2.1	Vegetation Communities	2
2.1.1	Scotch Pine Coniferous Plantation (FOCM6-3)	2
2.1.2	Fresh Moist Poplar Deciduous Forest (FOD8-1)	3
2.2	Proposed Vegetation Clearing	3
2.2.1	Surface Drainage Swale	4
3.0	Edge Management Plan	6
3.1	Timing and Site Preparation.....	6
3.2	Clearing	6
3.3	Tree Protection	7
3.4	Edge Restoration Plan.....	7
3.4.1	Monitoring & Tending	8
Tables		
Table 1: Vegetation Communities and Edge Impacts Associated with the Surface Drainage Swale ¹		5
Table 2: Species Recommended for Restoration Planting Within the Edge Management Area.....		8
Appendices		
A	Figures	
B	Edge Management Area	

1.0 Introduction

Dillon Consulting Limited (Dillon) was retained by Trolleybys Urban Development Inc. (Trolleybus) to develop an Edge Management Plan for the proposed residential development located northwest of the Nash Road and Hancock Road intersection, within the community of Courtice, in the Municipality of Clarington (the 'Municipality'), and the Region of Durham (the 'Region'), Ontario (**Appendix A**; Figure 1 from the Scoped EIS). A Scoped Environmental Impact Study (EIS) was prepared for this development (Dillon, 2021), which identified a net ecological gain in support of the development. This net ecological gain will be achieved through a combination of invasive species management, edge management and natural feature enhancement both within and outside of the Property limits. This Edge Management Plan has been specifically developed to address the edge management component associated with the developments proposed surface drainage swale.

The Edge Management Plan details the area and extent of edge management, how the edge management work will be completed, timing for the work, potential impacts from clearing activities and protection measures, monitoring and restoration plantings, as required.

2.0 Existing Conditions

2.1 Vegetation Communities

There are two vegetation communities associated with the Edge Management Plan. A summary of the existing vegetation conditions in each of the communities can be found below and are shown on Figure 3 from the Scoped EIS (**Appendix A**).

2.1.1 Scotch Pine Coniferous Plantation (FOCM6-3)

A total of 0.21 ha of this coniferous plantation occurs within the northern portion of the Property. The canopy and sub-canopy is dominated by Scotch Pine (*Pinus sylvestris*), with occasional to sparse occurrences of Norway Spruce (*Picea abies*), Wild Black Cherry (*Prunus serotina*) and Poplar species (*Populus balsamifera*, *Populus tremuloides*). Understory vegetation primarily consisted of Common Buckthorn (*Rhamnus cathartica*) with occasional to sparse occurrences Chokecherry (*Prunus virginiana*), White Ash (*Fraxinus americana*), Black Walnut (*Juglans nigra*) Paper Birch (*Betula papyrifera*) and Poplar species. Groundcover vegetation consisted primarily of Dog-strangling Vine (*Vincetoxicum rossicum*), Common Buckthorn, Riverbank Grape (*Vitis riparia Michx*) and Goldenrod Species (*Solidago altissima*, *Solidago canadensis*). Other species present as occasional to sparse occurrences consisted of Bittersweet Nightshade (*Solanum dulcamara*), Red Currant (*Ribes rubrum*), Spinulose Wood Fern (*Dryopteris carthusiana*), and Starved Aster (*Symphyotrichum lateriflorum*) among others. Anthropomorphic disturbance within the woodland was also observed off-property to include a manicured fire pit area. It was also noted that 5% to 10% of mature Scotch Pine were in poor overall health mainly due to crown dieback and secondary branch failures. Additionally, the majority of the Scotch Pine observed had irregular shaped crowns and were growing in the warped/haphazard manner that is typical for the species in Ontario.

Non-native species comprised the majority of vegetation present within this community in terms of absolute vegetation cover. Several of these species are considered invasive in Ontario which includes: Scotch Pine, Common Buckthorn and Dog-strangling Vine. For a species considered to be invasive in Ontario, rankings have been assigned by Urban Forest Associates Inc. in partnership with the Ministry of Natural Resources and Forestry (MNRF) and are provided in the draft *Invasive Exotic Plant Species Rankings for Southern Ontario* (Urban Forest Associates Inc. *et al.*, 2014). Two species, Dog-strangling Vine and Common Buckthorn are rated as Category 1, which are “aggressive invasive exotic species that can dominate a site to exclude all other species and remain dominant on the site indefinitely” (Urban Forest Associates Inc. *et al.*, 2014). These two species were dominant in the understory and groundcover layer respectively. Additionally, Scotch Pine, which is the dominant overall tree species, is classified as a Category 2 species which are “exotic species that are highly invasive but tend to only dominate certain niches or do not spread rapidly from major concentrations” (Urban Forest Associates Inc. *et al.*, 2014). In this case Scotch Pine can dominate open forest stands and invade meadows, excluding other tree species

establishment and natural succession, thereby reducing plant species richness and diversity overtime (Marinich and Powell, 2017).

Due to the persistent and aggressive nature of the invasive species associated with the Scotch Pine community within the Property, it is highly probable they will continue to suppress the establishment of more desirable native vegetation. Removal of the Scotch Pine community within the Property would serve to reduce the quantity of seed dispersing into un-infested adjacent habitats. Furthermore, other restoration methods such as stand conversion using thinning and tree plantings to support natural regeneration of the stand is likely to be hindered by the presence of other invasive species such as Common Buckthorn and Dog-strangling Vine, if not sufficiently managed.

2.1.2 Fresh Moist Poplar Deciduous Forest (FOD8-1)

There are two separate Fresh Moist Poplar Deciduous Forest communities located within the EIS study area; both of which are outside of the Property limits (**Appendix A**; Figure 3 from the Scoped EIS). One is located in the southwestern portion of the study area north of Nash Road, while the other is located in the northwest portion of the study area (north of the Scotch Pine Plantation). The latter is proposed to be enhanced in support of this edge management plan, and forms part of the revised significant woodland boundary identified in the Scoped EIS (Dillon, 2021).

With respect to the northern Fresh Moist Poplar Deciduous Forest community, frequent gaps were documented throughout the woodland forest canopy. The following species making up the incomplete crown cover were identified from the Property limits; Balsam Poplar, Manitoba Maple (*Acer negundo*), Green Ash (*Fraxinus pennsylvanica*), Scotch Pine, White Willow (*Salix alba*), Common Buckthorn, White Spruce (*Picea glauca*), and American Basswood (*Tilia Americana*).

2.2 Proposed Vegetation Clearing

As outlined in the Scoped EIS (Dillon, 2021), the proposed development will require the removal of select trees, shrubs, wildflowers, etc., including 0.14 ha of Scotch Pine Plantation and 0.48 ha of Cultural Thicket Swamp within the Property. In consultation with the Central Lake Ontario Conservation Authority (CLOCA) it was agreed that compensation in support of the aforementioned removals should include the area of removals, as well as a 15 m feature buffer (i.e. the compensation area). For the purposes of determining the total compensation area, the 15 m buffer was applied only to the area within the Property; for a total compensation area of 1.45 ha, which represents a compensation (overall benefit) ratio of 2.3:1. A compensation / enhancement area has been identified along Hancock Road (approximately 715 m northwest of the subject property) which would enhance an existing natural heritage system with associations to a Provincially Significant Wetland (PSW). The proposed compensation/enhancement area is identified in Figure 7 from the Scoped EIS (**Appendix A**). The compensation / enhancement works will result in an overall net ecological gain.

At a landscape level, removal of the 0.14 ha of Scotch Pine Plantation (including its associated invasive species) is also supported given that a total of approximately 0.88 ha of the contiguous Plantation west of

the Property have been approved for removal in support of the Headgate Development approved Draft Plan of Subdivision.

2.2.1 Surface Drainage Swale

Subsequent to the compensation area identified in **Section 2.2**, and based on comments provided by the Municipality, surface drainage swales were not permissible within rear yards. In order to accommodate the Municipality's request a 3 m wide surface drainage swale (including access requirements) is proposed within the Property limits, outside of, and directly adjacent to, the northern most lots (**Appendix A**; Figure 5 of the Scoped EIS). In support of the construction of the surface drainage swale, the remainder of the Scotch Pine Plantation between the northern most lots and the northern Property limits require removal, for an additional 0.07 ha of Scotch Pine/invasive species removal; this removal represents 86 m of linear edge within the Property. It should be noted that the additional 0.07 ha of Scotch Pine Plantation removal was also previously captured in the total compensation area outlined above in **Section 2.2** (i.e. 1.45 ha). Of the 0.07 ha of additional Scotch Pine/invasive species removal, 0.02 ha is associated with permanent vegetation removal (i.e. 3 m width which includes the surface drainage feature and access requirement); whereas removal of the remaining 0.05 ha is required to support the construction of the swale, and will be replanted in support of the net ecological gain.

As a component of the net ecological gain, invasive species removals (Common Buckthorn, Dog-Strangling Vine and Scotch Pine) will be conducted in the identified edge management area (**Appendix B**; Figure 5A). In addition, the 0.05 ha of Scotch Pine removal will be replanted with native species as a mechanism to increase the native species diversity of the area. Lastly, as an additional measure to substantiate the net ecological gain, the most eastern limits of the Fresh Moist Poplar Deciduous Forest (significant woodland) will be enhanced to include an additional 0.04 ha of native plantings (**Appendix B**; Figure 5A). The additional 0.04 ha will have the effect of increasing the existing linear edge within the edge management area from 116 m to 138 m. **Table 1** below summarizes the net ecological gain associated with the surface drainage swale works.

Table 1: Vegetation Communities and Edge Impacts Associated with the Surface Drainage Swale¹

Vegetation Community	Removal Area within Subject Property (ha)	Existing Edge (m) ³	Permanent Removal Area within Subject Property (ha)	Area to be Replanted & Enhanced with Native Species (ha)	Edge Enhancements (m) ⁴
FOCM6-3: Scotch Pine Coniferous Plantation	0.07	92	0.02	0.05	86
FOD8-1: Fresh Moist Poplar Deciduous Forest	---	24	---	0.04 ²	52
Total	0.07	116	0.02	0.09	138

¹The information included in Table 1 is specific to the vegetation removals associated with the surface drainage swale, and does not take into account the 0.14 ha of Scotch Pine Plantation and 0.48 ha of Cultural Thicket Swamp identified in Section 2.2.²The landowner associated with the lands associated with the 0.04 ha of enhancement has confirmed their participation in writing. ³Existing edge length within edge management area. ⁴Newly created edge post restoration/enhancement efforts.

Based on the 0.02 ha of permanent Scotch Pine Plantation removal, the total area to be replanted / enhanced (0.09 ha) represents a net ecological gain ratio of 4.5:1. Similarly, in addition to the 116 m of existing linear edge which will be enhanced, the 0.04 ha of additional plantings associated with the Fresh Most Poplar Deciduous Forest (significant woodland) will result in an additional 22 m of edge, for a total of 138 m of vegetated edge (a 16% increase).

As mentioned in **Section 2.2** above, at a landscape level (and in addition to the net ecological gains outlined above) the 0.07 ha of Scotch Pine Plantation removal is further supported given the approximately 0.88 ha of the contiguous Plantation west of the Property have been approved for removal in support of the Headgate Development approved Draft Plan of Subdivision.

3.0 Edge Management Plan

The edge management recommendations that follow are based upon the information collected to date in support of the proposed development. Note that general references to “edge” in this Edge Management Plan refer to the proposed new Scotch Pine Plantation edge in support of the surface drainage swale construction. The purpose of the Edge Management Plan is to remove invasive species within the edge management area, as well as the replanting of native species, as part of the overall net ecological gain and overall benefit for the Property and the adjacent natural heritage system.

3.1 Timing and Site Preparation

The following is recommended with regards to the timing of vegetation clearing and the site preparation that should precede clearing:

- Vegetation removal should not take place during the established core local breeding bird season, April 1 to August 31, as per the *Migratory Birds Convention Act, 1994*. If vegetation clearing must occur during this season, a qualified biologist will conduct nest searches prior to clearing. If a migratory bird nest is found, work will cease in the area of the nest until it has been determined by a qualified biologist that the young have fledged the nest or the nest is deemed inactive.
- Notwithstanding the aforementioned, although no snag/cavity trees were identified within the portions of the Scotch Pine Plantation within the Property in 2019, the Ministry of the Environment, Conservation and Parks (MECP) is to be consulted to determine whether a permit under the Endangered Species Act, 2007 (ESA) is required for tree removal associated with the Scotch Pine Plantation.

3.2 Clearing

In support of the removal of invasive species (i.e. Scotch Pine, Common Buckthorn and Dog-strangling Vine), it's recommended that the best management practices, control measures and restoration guidance outlined in the following Ontario Invasive Plant Council documents be reviewed and implemented, as appropriate:

- [Scots Pine \(*Pinus sylvestris*\): Best Management Practices in Ontario.](#)
- [Invasive Common \(European\) Buckthorn \(*Rhamnus cathartica*\): Best Management Practices in Ontario.](#)
- [Invasive Dog-strangling Vine \(*Vincetoxium rossicum*\): Best Management Practices.](#)

3.3 Tree Protection

The following recommendations are provided with respect to tree protection during construction of the development, servicing of the site and various earthworks:

- An Erosion and Sediment Control (ESC) Plan should be developed prior to earthworks and other construction activities. This should include silt installed along the proposed new edge, in the identified edge management area, to avoid sediment deposition within the adjacent lands, and to limit construction equipment to the subject lands to avoid impacted trees off property.
- It's recommended that the adjacent landowner to the north be consulted in advance of the surface drainage swale works to assess whether management of Scotch Pine (and invasive species associates) has previously been considered, and whether synergies can be realized to further enhance the adjacent natural features and mitigate potential spread of invasive within the edge management area. The adjacent landowner should consult with CLOCA and the Municipality in event they wish to address invasive species within their Property in a similar fashion to that proposed herein.
- Ongoing monitoring and maintenance of ESC measures should occur throughout construction of the development.

3.4 Edge Restoration Plan

Compensation for the portion of Scotch Pine Plantation removal in support of the surface drainage swale, and as a mechanisms to prevent invasive species from returning or other invasive species from germinating in the open space, restoration planting is required. The edge management area identified on Figure 5A (**Appendix B**) is to be planted with native species that complement the adjacent vegetation communities. A list of species recommended in support of the restoration plantings is provided in **Table 2**. It's recommended that CLOCA be consulted to confirm the list of species considered in advance of restoration works.

General recommendations for compensations plantings are provided below:

- A qualified restoration landscaping company should be contracted to complete plantings.
- Plantings should be in an asymmetrical, random mix.
- The species recommended in **Table 2** or suitable alternatives as determined by CLOCA should be selected. When planting a mix of shrubs and trees, species should be planted together in groups of 3-4.
- Trees should generally be planted 3 m apart and shrubs 1 m apart.
- When planting in areas of structural fill or unsuitable soil as determined by the landscaping company, planting holes should be supplemented with 5-10 cm of topsoil or planting soil mix prior to insertion of root ball.
- Trees should be placed in planting holes such that the root ball sits flatly on the bottom of the hole and the main stem is perpendicular to the soil surface.

- Plantings should be planted to a suitable depth, as determined by a qualified landscaping company. Generally, the top of the root ball should sit flush or 1-3 cm below the soil surface.
- All plantings should receive a flexible rodent guard to allow expansion during trunk growth, which must be removed at the end of the warranty period.
- A biodegradable root collar should be placed at the base of each planted tree.
- Mulch should be applied to the soil surface around each planting. Mulch should be free of weeds, seeds and inorganic or toxic materials.
- Trees should be planted during the spring (March 15 to May 15) or fall (September 1 to October 31). Trees can be planted outside these dates so long as the ground is not frozen and the warmest summer period has passed.
- If necessary, trees should be watered if conditions are unseasonably dry for an extended period of time.

Table 2: Species Recommended for Restoration Planting Within the Edge Management Area

TREES		SHRUBS	
Scientific Name	Common Name	Scientific Name	Common Name
<i>Acer saccharum</i>	Sugar Maple	<i>Amalanchier stolinefera</i>	Serviceberry
<i>Betula papyrifera</i>	Paper Birch	<i>Cornus sericea</i>	Red Osier Dogwood
<i>Fraxinus americana</i>	White Ash	<i>Prunus virginiana</i>	Chokecherry
<i>Fraxinus pennsylvanica</i>	Green Ash	<i>Sambucus canadensis</i>	Common Elderberry
<i>Juglans nigra</i>	Black Walnut		
<i>Populus balsamifera</i>	Balsam Poplar		
<i>Populus grandidentata</i>	Large-tooth Aspen		
<i>Populus tremuloides</i>	Trembling Aspen		
<i>Prunus serotina</i>	Black Cherry		
<i>Tilia americana</i>	American Basswood		
<i>Ulmus laevis</i>	White Elm		

3.4.1 Monitoring & Tending

The restoration / enhancement plantings should be monitored semi-annually between May 15 and September 30 for a minimum of two-years after planting to assess the health of the plantings. To promote growth and overall health of the plantings, the edge management area should be tended to in accordance with the following:

- Tending activities should take place very two-weeks from May 15 to September 30 during the first two growing seasons after planting.
- Vegetation should be maintained a minimum of 60 cm around the base of plantings.
- A watering plan should be in place for periods of drought or low rainfall.
- Vegetation assessed as dead during the two year monitoring period should be replanted.

A record of tending should be maintained to include the following:

- Date of planting(s).

- The date tending activities are completed and a description of the tending activity.
- An assessment of the overall health of the plantings (good, poor, dead) for each semi-annual monitoring event.

DRAFT

References

Dillon Consulting Limited. 2021. Updated Scoped Environmental Impact Study – Hancock Neighbourhood Northwest.

Urban Forest Associates Inc., Ministry of Natural Resources and Forestry. 2014. [Draft] Invasive exotic Plant Species Rankings for Southern Ontario. Urban Forest Associates Inc., Toronto, Ontario.

DRAFT

Appendix A
Figures

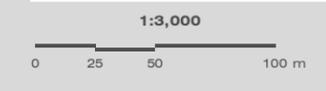
DRAFT



TROLLEYBUS URBAN DEVELOPMENT INC.
HANCOCK NEIGHBOURHOOD NW - EIS

PROJECT LOCATION
FIGURE I

- Property Boundary
- Study Area (50 m Setback)
- Watercourse (MNR)
- Ohn Waterbody



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: GM
 MAP CHECKED BY: DB
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 187249
 STATUS: FINAL
 DATE: 10/31/2018

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



TROLLEYBUS URBAN DEVELOPMENT INC.
HANACOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON

ECOLOGICAL LAND CLASSIFICATION
FIGURE 3

- Project Boundary
- Study Area(50m Setback)
- ✪ Bat Habitat Tree (Snag)
- ✪ Breeding Bird Survey
- Ecological Land Classification
- SWT: Cultural Thicket Swamp
- CVI_1: Transportation
- CVC_2: Industrial
- CVR_3: Residential
- FOCM6-3: Scotch Pine Coniferous Plantation
- FOD3 - SWM3: Fresh Moist Poplar Deciduous Forest and White Birch Poplar Mineral Deciduous Swamp Complex
- FOD8-1: Fresh - Moist Poplar Deciduous Forest Type
- MEMM3: Dry-Fresh Mixed Meadow
- MEMM4: Fresh-Moist Mixed Meadow
- MEMM4/THD: Fresh-Moist Mixed Meadow/Deciduous Thicket
- OAGM1: Annual Row Crop
- OAGM4: Open Pasture
- TAGM5: Hedgerow
- Red-osier Dogwood Inclusion
- Remnant Drainage Feature



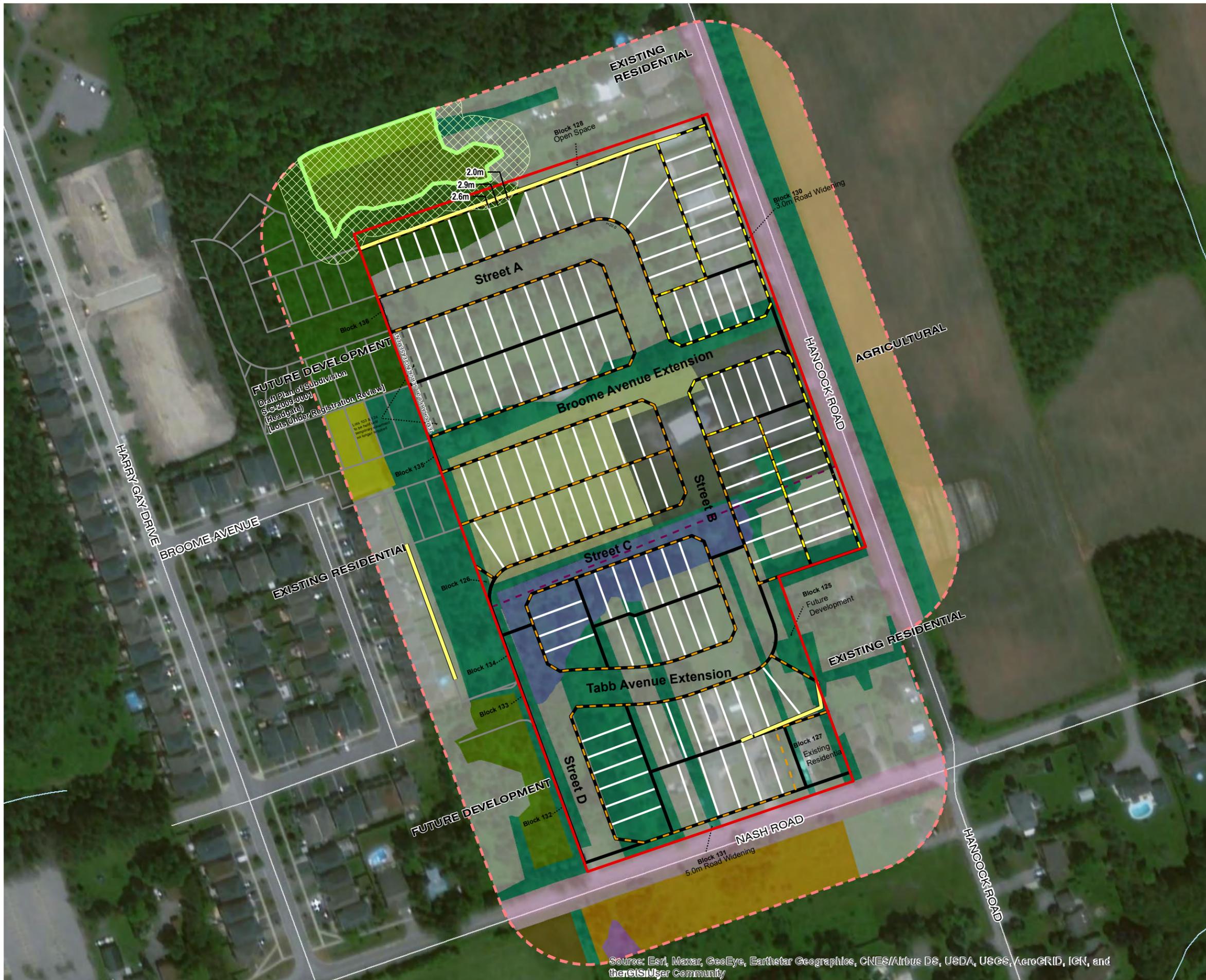
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
STATUS: DRAFT
DATE: 2021-04-26

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



TROLLEYBUS URBAN DEVELOPMENT INC.
 HANACOCK NEIGHBOURHOOD NORTHWEST,
 COURTICE, ON

PROPOSED SITE PLAN
 FIGURE 5

- Project Boundary
- Study Area(50m Setback)
- Watercourse (MNR)
- Site Plan
- Proposed Lot Line
- Proposed Boundary
- Proposed Residential Detached
- Proposed Town House
- Future Development
- Drainage Swale (3m)
- Significant Woodland
- Revised Significant Woodland Boundary
- Vegetation Protection Zone Buffer (15m)
- Ecological Land Classification
- SWT: Cultural Thicket Swamp
- CVL_1: Transportation
- CVC_2: Industrial
- CVR_3: Residential
- FOCM6-3: Scotch Pine Coniferous Plantation
- FOD3 - SWM3: Fresh Moist Poplar Deciduous Forest and White Birch Poplar Mineral Deciduous Swamp Complex
- FOD3: Fresh Moist Poplar Deciduous Forest
- MEMM3: Dry-Fresh Mixed Meadow
- MEMM4: Fresh-Moist Mixed Meadow
- MEMM4/THD: Fresh-Moist Mixed Meadow/Deciduous Thicket
- OAGM1: Annual Row Crop
- OAGM4: Open Pasture
- TAGM5: Hedgerow
- Red-osier Dogwood Inclusion
- Remnant Drainage Feature



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, CLOCA

MAP CREATED BY: LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
 STATUS: DRAFT
 DATE: 2021-02-10



TROLLEYBUS URBAN DEVELOPMENT INC.
 HANACOCK NEIGHBOURHOOD NORTHWEST,
 COURTICE, ON

**PROPOSED COMPENSATION/
 ENHANCEMENT AREA**
 FIGURE 7

- Compensation/Enhancement Area (1.45 ha)
- Provincially Significant Wetland (MNR)
- Water Body
- Ecological Land Classification**
 - FOMM7-2: Fresh - Moist White Cedar - Hardwood Mixed Forest
 - MEMM4: Fresh - Moist Mixed Meadow
 - WOCM2: Fresh - Moist Coniferous Woodland

Small pockets of wetland vegetation in depressions throughout area but not greater than 50% of overall community.

Naturalized pond filled with Cattails. Shallow water present.



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR

MAP CREATED BY: LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
 STATUS: DRAFT
 DATE: 2020-09-30

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix B
Edge Management Area

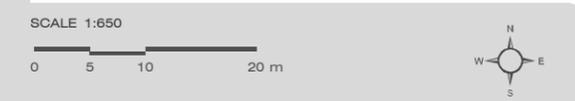
DRAFT



TROLLEYBUS URBAN DEVELOPMENT INC.
HANACOCK NEIGHBOURHOOD NORTHWEST,
COURTICE, ON

PROPOSED SITE PLAN
FIGURE 5A

- Project Boundary
- Study Area(50m Setback)
- Site Plan**
- Proposed Lot Line
- Proposed Boundary
- Proposed Residential Detached
- Proposed Town House
- Future Development
- Drainage Swale (3m width)
- Edge Management Area (0.094 ha Total)
- Significant Woodland**
- Revised Significant Woodland Boundary
- Ecological Land Classification**
- CVI_1: Transportation
- CVR_3: Residential
- FOCM6-3: Scotch Pine Coniferous Plantation
- FOD3 - SWM3: Fresh Moist Poplar Deciduous Forest and White Birch Poplar Mineral Deciduous Swamp Complex
- FOD8-1: Fresh - Moist Poplar Deciduous Forest Type
- TAGM5: Hedgerow



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, CLOCA

MAP CREATED BY: LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 18-7249
STATUS: DRAFT
DATE: 2021-04-15

References

- Aquafor Beech Ltd. 2006. Headgate Property Environmental Impact Statement. Report for the Municipality of Clarington.
- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto.
- Candevcon Limited. 2021. Nash Road and Hancock Road: Functional Servicing and Stormwater Management Report.
- Candevcon Limited. 2019. Nash Road & Hancock Road: Functional Grading Plan.
- Central Lake Ontario Conservation Authority. 2017. Regulation Areas.
- Central Lake Ontario Conservation Authority. 2004. Regional Groundwater Mapping Study.
- Chapman and Putnam. 1984. Physiography of Southern Ontario; Ontario Geological Survey, Map P.2715. Scale 1: 600 000.
- Dillon Consulting Limited. 2017. Trolleybus Urban Development Inc.: Nash Road and Hancock Road Species at Risk Screening Report.
- Dillon Consulting Limited. 2020. Scoped Environmental Impact Study: Hancock Neighbourhood South West.
- Durham Regional Official Plan. Consolidated May 2017. Official Plan and Schedules.
- GeoPro Consulting Limited. 2020. Preliminary Hydrogeological Site Assessment (Including Water Balance Assessment). Proposed Subdivision Development: Nash Road and Hancock Road, Courtice, Clarington, Ontario. Pg. 139.
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.
- Marinich, Allison., Power, Kate. 2017. Scots Pine (*Pinus sylvestris* L.) Best Management Practices in Ontario. Ontario Invasive Plant Council. Peterborough, ON.
- Municipality of Clarington. 2011. Report Planning Services Public Meeting. Subject: Applications to Amend the Clarington Official Plan and Zoning By-Law and a Proposed Draft Plan of Subdivision to Permit 18 Single Detached Residential Units. Applicant: Headgate Group Inc. January 10, 2011. Report # PSD-001-11. Pg. 16.

- Municipality of Clarington. 2013. Report Planning Services Department. Subject: Clarington Official Plan Amendment to Implement a Revised Hancock Neighbourhood Design Plan. February 25, 2013. Report #PSD-015-13. Pg. 51.
- Municipality of Clarington. 214. Report Planning Services Department. Subject: Applications to Amend the Clarington Official Plan and Zoning By-Law and a Proposed Draft Plan of Subdivision to Permit 18 Single Detached Residential Units. Applicant: Headgate Group Inc. March 31, 2014. Report #PSD-019-14. Pg. 26
- Municipality of Clarington Official Plan. Consolidated October 2017. Official Plan and Schedules.
- Natural Audubon Society. 2017. Christmas Bird Count.
- NatureServe. 2017. Mammals of the Western Hemisphere.
- Niblett Environmental Associates Inc. 2012. Hancock Neighbourhood Design Plan Update, Part Lot 27 and 28, Concession 3, Former Darlington Township, Municipality of Clarington: Natural Environment Background Report. October 25, 2012. Pg. 18
- Ontario Geological Survey. 1991. Bedrock geology of Ontario, southern sheet; Ontario Geological Survey, Map 2544, scale 1: 1 000 000.
- Ontario Ministry of Natural Resources and Forestry. 2000. Significant Wildlife Habitat Technical Guide.
- Ontario Ministry of Natural Resources and Forestry. 2010. Natural Heritage Reference Manual.
- Ontario Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E.
- Ontario Ministry of Natural Resources and Forestry. 2018a. Make a Map: Natural Heritage Areas.
http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US.
- Ontario Ministry of Natural Resources and Forestry. 2018b. Natural Heritage Information Centre.
http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US.
- Ontario Nature. 2017. Ontario Reptile and Amphibian Atlas.
- Urban Forest Associates Inc., Ministry of Natural Resources and Forestry. 2014. [Draft] Invasive Exotic Plant Species Rankings for Southern Ontario. Urban Forest Associates Inc., Toronto, Ontario.
- Toronto Entomologists Association. 2017. Ontario Butterfly Atlas.