Sunset Creek

Environmental Impact Study (EIS)

Project Location:

3680 & 3700 Colonel Talbot Road
Lot 74 East of Talbot Road, Westminster
London, ON

Prepared for:

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1.0 Introduction

York Developments, on behalf of W3 Lambeth Farms Inc. (the 'Proponent'), has initiated the Draft Plan of Subdivision approval process for a residential development at 3680 and 3700 Colonel Talbot Road in London, ON. An Environmental Impact Study (EIS) for the first stage of this development (Draft Plan 39T-17503, hereafter referred to as Draft Plan 1) was approved with Draft Plan conditions. This report will address the remainder of this proposed development, referred to as Sunset Creek (Draft Plan 2). The property is located on Lot 74 East of Talbot Road, Westminster, in the City of London. The area of Sunset Creek is referred to as the Subject Lands for the purpose of this report [Figure 1]. For the purpose of evaluating contiguous or nearby natural features in this EIS, a Study Area has been defined as the Subject Lands and adjacent lands within 120 m.

The Subject Lands are mainly active agriculture, with remnants of a rural residence and barn in the west, and several small vegetation communities in the north. A tributary of Dingman Creek, referred to as Tributary 12 (Stantec, 2023), is an ephemeral flowpath that crosses the Subject Lands from northeast to southwest before passing under Colonel Talbot Road. Downstream of Colonel Talbot Road, the channel becomes more channelized and has recently undergone restoration work. Drainage improvement works and ecological enhancements along the Tributary 12 corridor, south or west of Colonel Talbot, are currently underway by the City of London as recommended in the Dingman Creek Subwatershed Stormwater Servicing Study (Aquafor Beech Ltd., 2020).

Life science data collection on the Subject Lands was completed by MTE Consultants between 2017 and 2021. This report compiles the data collection for these years.

1.1 Report Objective

This report is an Environmental Impact Study (EIS), with the first sections reiterating the previously submitted Subject Lands Status Report (SLSR) to identify natural heritage features in the Study Area. An EIS was requested by the City of London in pre-consultation. The objective of the SLSR component of the report is to describe the natural heritage features, based on field surveys and background information, and to identify functions to be protected or replicated on the Subject Lands. The EIS component evaluates the potential for impacts to natural heritage features and functions to result from the Project, and provides recommendations for avoidance or mitigation of impacts, potential restoration and enhancement measures, and a monitoring program to protect significant natural heritage features and functions.

The process and reporting are also designed to provide a support document for additional approvals that may be required, including permit applications that may be submitted to the Upper Thames River Conservation Authority (UTRCA).

1.2 Format

Natural heritage features and functions identified in this EIS are evaluated through a review of the Natural Heritage Reference Manual (NHRM, 2010) for policy 2.1 of the Provincial Policy Statement (MMAH, 2020), and Section 6 (Environmental Policies) of The London Plan (May 2022).

This report will be circulated to the City of London and UTRCA for agency review and comment on the findings and recommendations.

This EIS contains the following components, in accordance with the standards noted above:

Section 2.0	Land Use Setting and Policy Overview
Section 3.0	Triggers for EIS
Section 4.0	Description of the Natural Environment
Section 5.0	Natural Heritage Policy Considerations
Section 6.0	Description of the Development
Section 7.0	Impacts and Mitigation

Section 8.0 Summary and Conclusions
Section 9.0 References

1.3 Background Documents

The following additional documents were reviewed to provide context for the Project and conditions within Study Area:

- Upper Thames River Source Protection Area Assessment Report (Thames-Sydenham and Region Source Protection Committee, 2015)
- Dingman Creek Subwatershed Stormwater Servicing Study (Aquafor Beech Ltd., 2020)
- Southwest Area Secondary Plan (City of London, 2019)
- W3 Lambeth Farms Inc. c/o York Developments Hydrogeological and Water Balance Assessment (EXP, 2017)
- W3 Lambeth Farms Inc. c/o York Developments Hydrogeological and Water Balance Assessment – W3 Subdivision, Phase 2 (EXP, 2022)
- Colonel Talbot Property EIS DRAFT (NRSI, 2021)

1.4 Pre-Consultation and Site History

A proposal review meeting was held on July 14, 2021, with the Proponent, their Authorized Agents (MHBC Planning Limited c/o Scott Allen) and City of London staff from Development Planning, Urban Design, Heritage Planning, Natural Heritage, Parks and Recreation, Wastewater and Drainage Engineering, Water Engineering, Stormwater Management, Transportation Planning, Development Finance and Development Engineering. A record of consultation and comments was received on August 6, 2021. Additional comments were received from the Ministry of Natural Resources and Forestry (MNRF) and the Upper Thames River Conservation Authority (UTRCA). The Initial Proposal Report (IPR) Summary is provided in Appendix A.

The initial concept for the valleyland within the Subject Lands was a complete corridor. A ‘complete corridor’ is an overarching concept to produce a naturalized corridor as part of a unique stormwater management strategy. This concept was proposed in the Dingman Creek EA, and is intended to integrate aquatic habitat, floodplain expansion, water conveyance, and public walkways into one feature. The proposed integrated corridor in this application takes into account many aspects of the complete corridor concept, as further described later in this report.

With respect to natural heritage features, City Planning Ecologist James MacKay noted that an SLSR and EIS would be required for the Subject Lands, scoped in consultation with the City of London and other relevant stakeholders. A Scoping Meeting was held on September 16, 2021, with James McKay (City Ecologist) and MTE staff. While not required under the London Plan given the Southwest Area Plan (SWAP) had already been completed, the Subject Lands Status Report (SLSR) was submitted to the City of London and UTRCA in November 2021. No comments have been received to date. Therefore, and more appropriately under London Plan, the SLSR components have been incorporated into this EIS with updated information and policy discussion (since 2021) where applicable.

An updated Scoping Meeting was held on March 23, 2022, with James MacKay, Bruce Page (City of London Planner), UTRCA (Christine Creighton and Tara Tchir), EEPAC (Susan Hall), David Ailles (York Developments), Darryl Hern (Stantec), Kelli Dobbin (EXP), Melissa Cameron and Allie Leadbetter (MTE Ecologists). The final Scoping Checklist is provided in Appendix B.

2.0 Land Use Setting and Policy Overview

Provincial and municipal legislation and policies were reviewed to inform the evaluation of significant natural heritage features on the Subject Lands.

The area in which the Subject Lands are located is comprised of primarily agricultural lands and residential development. Several woodlands are present, including a small woodland bordering the northeast of the Subject Lands and a significant woodland in the Draft Plan 1 area to the east. A residential neighbourhood is located across Colonel Talbot Road to the west.

2.1 The London Plan

The London Plan (2022) includes environmental policies that provide direction for the long-term protection and conservation of natural heritage features and areas and the ecological functions, processes, and linkages that they provide in the City of London.

The general environmental goals of the London Plan include, but are not limited to, the following:

- Achieve healthy terrestrial and aquatic ecosystems in the city's subwatersheds.
- Provide for the identification, protection, rehabilitation, and management of natural heritage features and areas and their ecological functions.
- Protect, maintain, and improve surface and groundwater quality and quantity by protecting wetlands, groundwater recharge areas and headwater streams.
- Maintain, restore, monitor, and improve the diversity and connectivity of natural heritage features and areas and the long-term ecological function and biodiversity of Natural Heritage Systems.
- Provide opportunities for appropriate recreational activities based on the ecological sensitivities of the area.

Natural Heritage features are generally identified and mapped on Map 5 of the London Plan (May 2022). Development and site alteration is not permitted within Provincially Significant Wetlands. Development and site alteration is not permitted within or adjacent to Unevaluated Wetlands, Significant Valleys, and Woodlands, Areas of Natural and Scientific Interest, and Environmentally Significant Areas unless evaluated by a professional and demonstrated to have no negative impacts on the features or their ecological functions. Development or site alteration proposed within or adjacent to fish habitat or habitat of threatened or endangered species is subject to federal or provincial regulations, described below.

2.1.1 Environmental Classifications

There are three Unevaluated Wetlands within the Subject Lands on Map 5 of the London Plan (2022) [Figure 2]. The south wetland was previously removed in May 2020 as part of Draft Plan 1. Removal and compensation was approved under O. Reg 157/06 (UTRCA Application #54-20). A Valleyland passes through the Subject Lands approximately northeast to southwest along an ephemeral flowpath (Tributary 12 of Dingman Creek). There are two unevaluated wetlands in or next to this Valleyland. This Valleyland also extends into adjacent lands to the north and west. The adjacent lands within 120 m also include two Unevaluated Wetlands approximately 70 m to the north of the Subject Lands boundary.

There is also a Significant Groundwater Recharge Area (SGRA) and Highly Vulnerable Aquifer (HVA) in the southwest Subject Lands as shown on Map 6 of the London Plan.

2.1.2 Land Use Designations

The Subject Lands are primarily designated as Neighbourhoods on Map 1 of the London Plan (2022), with an area in the west designated as Green Space [Figure 3]. This Open Space area is consistent with the SWAP discussed below. Adjacent lands within 120 m are designated Neighbourhoods with a small area of Green Space west across Colonel Talbot Road.

2.2 The Southwest Area Secondary Plan (Updated December 2019)

The Southwest Area Secondary Plan (SWAP) applies to approximately 2,700 ha of land in the southwest portion of London bounded by Southdale Road West, White Oak Road, Exeter Road, Wellington Road South, Green Valley Road and the Urban Growth Boundary. The purpose of the Secondary Plan is to establish policies and principles for the development of the specified planning area that consider a range of residential forms, sustainability practices, preservation of cultural heritage, and high-quality urban design among other factors. The Southwest Area Secondary Plan provides a greater level of detail than the more general policies in the London Plan.

The Subject Lands fall within the Southwest Area Plan. Agricultural areas within the Subject Lands are designated Low Density Residential and Medium Density Residential on the Southwest Area Land Use Plan [Figure 4]. A section in the west Subject Lands is designated Open Space which matches with the Green Space designation in the London Plan. This Green Space reflects a maximum hazard line on the SWAP Schedule B1 amendments. A Neighbourhood Central Activity Node is located in the southeast Subject Lands. Neighbourhood Central Activity Nodes are intended to provide a neighbourhood-scale activity and gathering place for residents of the surrounding neighbourhood. The land use designations are consistent with Map 1 of the London Plan. The SWAP mapping supersedes the London Plan (2022).

2.3 City of London Zoning Bylaws

The majority of the agricultural areas within the Subject Lands are zoned Urban Reserve 4 (UR4), while a flood hazard area (UTRCA, 2021a) is zoned Open Space (OS4) [Figure 5] to match the Green Space designation on Map 1 of the London Plan. The northwest corner of the Subject Lands is a Neighbourhood Facility Zone. A zoning by-law amendment will be required for residential development in these existing zones to bring the land into conformity with the London Plan designations.

2.4 Upper Thames River Conservation Authority (UTRCA) Regulation

The UTRCA regulates lands within its watershed under Ontario Regulation 157/06, pursuant to Section 28 of the *Conservation Authorities Act*. The UTRCA has jurisdiction over riverine flooding and erosion hazards and requires that landowners obtain written approval from the Authority prior to undertaking any site alteration or development within these regulation limits.

The Subject Lands are regulated under Ontario Regulation 157/06 for a flooding hazard and erosion hazard associated with Tributary 12 of Dingman Creek, which is an ephemeral flowpath flowing northeast to southwest through the Subject Lands. An isolated wetland interference area (Map 6, London Plan) has been incorporated into the flood hazard regulation limits.

2.5 Planning Act

The Provincial Policy Statement (PPS; MMAH, 2020) was issued under the *Planning Act, 1990* to provide direction to regional and local municipalities regarding planning policy, ensuring that decisions made by planning authorities were consistent with provincial policy. With respect to natural heritage features and resources, the PPS defines seven natural heritage features:

- Significant Wetlands and Significant Coastal Wetlands
- Significant Woodlands
- Significant Valleylands
- Significant Wildlife Habitat (SWH)
- Significant Areas of Natural and Scientific Interest (ANSI's)
- Fish Habitat, and,
- Habitat of Endangered and Threatened Species

The Subject Lands are within Ecoregion 7E where no development or site alteration are permitted in Provincially Significant Wetlands or Coastal Wetlands. Development and site alteration are not permitted in Habitat of Endangered or Threatened Species or Fish Habitat or, except in accordance with provincial and federal legislation. For the remaining features, development and site alteration shall not be permitted unless it has been demonstrated through an EIS that there will be no negative impacts on the features or their ecological functions.

2.6 Endangered Species Act

The *Endangered Species Act, 2007* protects species listed as Threatened, Endangered or Extirpated in Ontario (SARO, 2007) from killing, harm, harassment, or possession, and also protects their habitats from damage or destruction. Activities that may impact a protected species or its habitat require prior authorization from the Ministry of Environment, Conservation and Parks (MECP), unless the activities are exempt under a Regulation.

A background review and assessment for species protected under the *Endangered Species Act, 2007* (hereafter "Protected Species") is discussed in Section 4.2.1 of this EIS.

2.7 Fisheries Act

The *Fish and Wildlife Conservation Act, 1997* (FWCA) regulates hunting, trapping, fishing, and related activities in Ontario in order to address the conservation of fish and wildlife resources in the province, including mammals, birds, reptiles, amphibians and fish. Under the Act, a person that hunts or traps wildlife requires a license administered by the Ministry of Natural Resources and Forestry (MNRF). Deliberate capture of wildlife or fish for the purpose of salvage and relocation is regulated under the FWCA.

2.8 Migratory Birds Convention Act

The federal *Migratory Birds Convention Act, 1994* aims to protect and conserve migratory birds as populations and individual birds in Canada and the United States. No work is permitted to proceed that would result in the destruction of active nests (nests with eggs or young birds), or the wounding or killing of bird species protected under the Migratory Birds Convention Act, 1994 and/or Regulations under that Act. Many bird species not protected by the MBCA (e.g., raptors) are protected under the FWCA.

2.9 Fish and Wildlife Conservation Act

The *Fish and Wildlife Conservation Act, 1997* (FWCA) regulates hunting, trapping, fishing, and related activities in Ontario in order to address the conservation of fish and wildlife resources in the province, including mammals, birds, reptiles, amphibians and fish. Under the Act, a person that hunts or traps wildlife requires a license administered by the Ministry of Natural Resources and Forestry (MNRF). Deliberate capture of wildlife or fish for the purpose of salvage and relocation is regulated under the FWCA.

3.0 Triggers for EIS

When a development proposal requires a Planning Act application (i.e., Draft Plan submission, or amendments to the Official Plan and/or zoning by-law), the City of London requires an EIS to be completed where development or site alteration is proposed within or adjacent to Natural Heritage System. Trigger distances are set out in Table 13 (Areas Requiring Environmental Study) of the London Plan (2022).

The proponent is planning a residential development at 3680 and 3700 Colonel Talbot Road, London, ON. This EIS part of a Planning Application and is required based on the following triggers from the London Plan Maps (2022):

- Proposed development within 120 m of an Unevaluated Wetland
- Proposed development within 120 m of a Valleyland
- Proposed development within 30 m of a significant groundwater recharge area (SGRA) and highly vulnerable aquifer (HVA)

As well, application for a permit under the UTRCA Ontario Regulation 157/06 will be required.

- A portion of the Subject Lands are within the UTRCA's regulation limits for flood hazards.

In addition, the *Endangered Species Act* (2007) protects species and habitat not specifically identified on London Plan Maps. To be consistent with the Provincial Policy Statement (Ministry of Municipal Affairs and Housing (MMAH), 2020), the requirements for an additional study can be triggered without any adjacent features identified on the London Plan Maps.

The following section (Section 4.0) reviews the natural heritage setting of the Subject Lands.

4.0 Description of the Natural Environment

The following section reviews the abiotic and biotic features on and within 120 m of the Subject Lands that contribute to the overall natural heritage features and functions of the Subject Lands and adjacent lands. This review provides relevant background information for interpreting environmental features and functions for evaluation in Section 5.0. Data collected by MTE staff within the Subject Lands is presented. Areas outside the property limits were studied from the edge of the property or using satellite imagery, except for the northeast vegetation patch where studies were permitted. Relevant 2016 and 2017 data for the north adjacent lands have also been provided by Natural Resource Solutions Inc. (NRSI, 2021).

4.1 Physical Setting

4.1.1 Physiography

The Subject Lands are underlain by Middle Devonian-aged limestone, dolostone, and shale of the Dundee Formation (Ontario Geological Survey, 1991).

4.1.2 Soils

The Soils of Middlesex County (Hagerty & Kingston, 1992) indicate that the soils in the west Subject Lands include Teeswater 4 soil associates (silt loam with well to imperfect drainage) along with some Brant 4 associates (silt loam/loam with glacial till in the substratum and very fine sandy loam with well to imperfect drainage). The northeast Subject Lands have mostly Brant 4 associates with some Bennington 4 Till phase associates (silt loam and loam with and well to imperfect drainage). The OGSEarth Surficial Geology mapping provided by the Ministry of Energy, Northern Developments, and Mining (2017) identifies this region as having 5d till (clay to silt-textured till derived from glaciolacustrine deposits or shale).

On a site-specific level, three boreholes were installed by EXP within the Subject Lands (2017). These boreholes indicated that the site has an approximately 0.5 m layer of topsoil underlain by a thicker layer silty clay (brown, trace sand and gravel, usually stiff). A moist layer of silty-sand under the silty-clay layer was also observed in Borehole 3, located near the centre of the boundary between Draft Plan 1 and 2 lands.

4.1.3 Topography

In the general vicinity of the Subject Lands, the topography is very gently sloping with some areas that are nearly level (Hagerty & Kingston, 1992). On a site-specific scale, the Subject Lands are relatively flat with slight hills toward the east of the property and the site is generally characterized by low local relief (EXP, 2022). Community 4a and wetland inclusion A1a are located in depressions.

4.1.4 Surface Water Features

An open constructed drain known as 'Tributary 12' flows northeast to southwest through the Subject Lands. Tributary 12 originates to the north where it is visibly channelized through the CUT1 community along the north property boundary. The flowpath then travels onto the Subject Lands and connects through Community 4a (MAM1) before crossing the agricultural field where it is a shallow depression that is ploughed and planted through. This feature provides only intermittent seasonal overland flow in this area. The Tributary becomes slightly more apparent in a low-lying area adjacent to the former residential site but is only ephemerally wet. Finally, Tributary 12 flows west through a culvert under Colonel Talbot Road and out the west side where channel re-construction has recently been undertaken by the City.

A dug farm pond is also present in the residential area of the Subject Lands. This feature has standing water throughout the year and is not directly online with Tributary 12.

In addition, there is one small offline wetland (Community A1a) in the north Subject Lands which is surrounded by agricultural fields. Another wetland (Community 5 – swamp thicket) used to be present in the south Subject Lands but was removed as part of prior approvals for the larger legal parcel. These features are further discussed in Section 4.2.2.

4.1.5 Hydrogeology

The Subject Lands are located within the Upper Thames River Source Water Protection Area (Thames-Sydenham & Region Source Protection Committee, 2015). The west Subject Lands are located in a significant groundwater recharge area (SGRA) and highly vulnerable aquifer (HVA), which is considered a Moderate and Low Threat Policy Area. Within the Dingman Creek Study Area, SGRAs generally occur in areas with coarse-textured glaciolacustrine deposits (Aquafor Beech Ltd., 2020). SGRAs allow for groundwater recharge in the context of the local subwatershed from the ground's surface down to the aquifer, and therefore these areas are important for maintaining the quality and quantity of groundwater resources. There are no Wellhead Protection Zones within or adjacent to the Subject Lands.

EXP installed a monitoring well within the Subject Lands, near the boundary between Draft Plan 1 and 2. The groundwater elevation was observed between 259.7 m asl in February 2016 and 258.6 m asl in March 2017 (EXP, 2017). A site-specific Hydrogeological and Water Balance Assessment will be completed by EXP Services for the Subject Lands.

4.2 Biological Setting

Life science data were collected on the Subject Lands and adjacent lands by MTE Consultants between 2017 and 2021. This section summarizes the background review of natural heritage features in the area of the Subject Lands and compiles the field data collected by MTE.

4.2.1 Records Review

The Land Information Ontario (LIO) mapping (MNRF, 2021) and Natural Heritage Information Centre (NHIC) online database (2021) were reviewed for natural heritage features of provincial interest in the Subject Lands or adjacent lands.

No Areas of Natural and Scientific Interest (ANSI), Provincially Significant Wetlands (PSW), or Environmentally Significant Areas (ESA) are located on or within 120 m of the Subject Lands. Woodlands are reviewed under Municipal Policy.

Designated Natural Heritage Features

The Land Information Ontario (LIO) mapping (MNRF, 2021) and Natural Heritage Information Centre (NHIC) online database (2021) were reviewed for natural heritage features of provincial interest in the Subject Lands or Adjacent Lands.

No Areas of Natural and Scientific Interest (ANSI), Provincially Significant Wetlands (PSW), or Environmentally Significant Areas (ESA) are located on or within 120 m of the Subject Lands. No Wildlife Value Areas were identified on LIO mapping.

Species Records

Protected Species are those listed as Endangered or Threatened on the Species at Risk in Ontario (SARO) List of the *Endangered Species Act* (*ESAct*, 2007). Only Protected Species and their habitats receive protection under the *ESAct*. Species of Conservation Concern (SOCC) are those listed as Special Concern on the SARO list and species with a provincial ranking of S1-S3. Provincial status rankings for plants, vegetation communities, and wildlife are based on the number of occurrences in Ontario and have the following meanings:

S1: critically imperiled; often fewer than 5 occurrences
S2: imperiled; often fewer than 20 occurrences
S3: vulnerable; often fewer than 80 occurrences
S4: apparently secure
S5: secure
S?: unranked, or, if following a ranking, rank uncertain (e.g. S3?)

Provincial status rankings are established by the NHIC and do not provide an indication of regional abundance or rarity (i.e., species uncommon in the province may still be locally abundant in some regions).

A review of publicly available species records in the NHIC, Ontario Breeding Bird Atlas (OBBA), Ontario Reptile and Amphibian Atlas databases, and Citizen Science sources (iNaturalist and eBird), identified several Protected Species and SOCC as potentially present in the general area of the Subject Lands. Many of these sources display data for a broad area (e.g. by upper-tier municipality, per 10 km atlas square) and therefore provide only a general potential for species presence on or near the Subject Lands. It should be noted that OBBA occurrence data are from 2001-2005, and the dates of NHIC records are unknown. The remainder of the records are from within the past 10 years.

In addition to the above list, there are a number of other species that are poorly represented in the background information sources and may be present within the City of London. These additional species to consider include Little Brown Myotis [END], Northern Myotis [END], Tri-coloured Bat [END], and Eastern Small-footed Myotis [END].

Table 1, below, presents the Protected Species found within approximately 10 km of the Subject Lands based on the records review. Observations of migrant bird species observed outside nesting timing windows have been omitted where known.

Table 1: Protected Species Occurrence Records Review (Potential Within 10 km of the Subject Lands)

Common Name	Scientific Name	SARO Status	Most Recent Observation	Source
American Badger	*Taxidea taxus*	END	-	NHIC, 2022
American Chestnut	*Castanea dentata*	END	November 8, 2020	NHIC, 2022; iNaturalist, 2022
Butternut	*Juglans cinerea*	END	-	NHIC, 2022
Eastern Flowering Dogwood	*Cornus florida*	END	-	NHIC, 2022
Eastern Small-footed Myotis	*Myotis leibii*	END	-	Under-represented species
False Hop Sedge	*Carex lupuliformis*	END	-	NHIC, 2022

Common Name	Scientific Name	SARO Status	Most Recent Observation	Source
Little Brown Myotis	*Myotis lucifugus*	END	-	Under-represented species
Northern Myotis	*Myotis septentrionalis*	END	-	Under-represented species
Prothonotary Warbler	*Protonotaria citrea*	END	June 11, 2021	eBird, 2022; iNaturalist, 2022
Spiny Softshell	*Apalone spinifera*	END	June 2021	iNaturalist, 2022
Tri-colored Bat	*Perimyotis subflavus*	END	-	Under-represented species
Bank Swallow	*Riparia riparia*	THR	June 11, 2022	eBird, 2022; OBBA, 2005
Bobolink	*Dolichonyx oryzivorus*	THR	2001-2005	NHIC, 2022; OBBA, 2005
Chimney Swift	*Chaetura pelagica*	THR	2001-2005	OBBA, 2005
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	August 2020	iNaturalist, 2022; Ontario Nature, 2019
Eastern Meadowlark	*Sturnella magna*	THR	2001-2005	NHIC, 2022; OBBA, 2005
Silver Shiner	*Notropis photogenis*	THR	-	DFO, 2022
Wavy-rayed Lampmussel	*Lampsilis fasciola*	THR	September 2021	iNaturalist, 2022

Several Special Concern (SC) or rare (S1-S3) species were also identified through a background review within 10 km of the Subject Lands. These species are provided in Table 2, below.

Table 2: SOCC Occurrence Records Review (Potential Within 10 km of the Subject Lands)

Common Name	Scientific Name	Status	Most Recent Observation	Source
Bald Eagle	*Haliaeetus leucocephalus*	SC	October 23, 2022	eBird, 2022
Barn Swallow	*Hirundo rustica*	SC	July 30, 2022	eBird, 2022; OBBA, 2005
Bristly Buttercup	*Ranunculus hispidus*	S3	May 2021	iNaturalist, 2022
Common Nighthawk	*Chordeiles minor*	SC	2001-2005	OBBA, 2005
Eastern Wood-Pewee	*Contopus virens*	SC	May 25, 2021	OBBA, 2005; eBird, 2022
Green Dragon	*Arisaema dracontium*	SC	-	NHIC, 2022
Monarch	*Danaus plexippus*	SC	July 29, 2021	iNaturalist, 2022
Northern Map Turtle	*Graptemys geographica*	SC	August 2021	iNaturalist, 2022; Ontario Nature, 2019
Scarlet Beebalm	*Monarda didyma*	S3	July 30, 2021	iNaturalist, 2022

Common Name	Scientific Name	Status	Most Recent Observation	Source
Snapping Turtle	*Chelydra serpentina*	SC	June 10, 2021	NHIC, 2022; iNaturalist, 2022; Ontario Nature, 2019
Wood Thrush	*Hylocichla mustelina*	SC	2001-2005	OBBA, 2005

An assessment of habitat for these Protected Species and SOCC, along with targeted surveys where suitable habitat was present, was conducted by MTE on the Subject Lands as part of the current EIS. Survey methods and results are discussed in Sections 4.3 and 4.4. The above lists are reviewed in Appendix C which provides a complete assessment of habitat suitability for Protected Species and SOCC recorded in the general area of the Subject Lands. The species to consider from this Appendix C review are brought forward into the appropriate sections of the EIS below.

4.2.2 Vegetation Communities

The vegetation communities within and adjacent to the Subject Lands were assessed by MTE ecologist Will Huys, certified to conduct ELC in Southern Ontario, on March 19 and July 29, 2015; April 21, June 8, June 26, and September 11, 2017; and May 7, July 7, and August 19, 2019, using protocols outlined in the Ecological Land Classification (ELC) System for Southern Ontario (Lee et al., 1998) [Figure 7]. The boundaries of these communities were not staked and surveyed to sub-meter accuracy; therefore, areas are estimated through aerial photo interpretation.

ELC information sheets are provided in Appendix D. Provincial significance of vegetation communities is based on the rankings assigned by the NHIC (2020). All communities listed in Table 3 are secure in Ontario.

Table 3: Ecological Land Classifications for the Subject Lands and Adjacent Lands along the Tributary 12 Flow Path

Community Type	Polygon	ELC Code	Description	S-rank	Area (ha)
Subject Lands					
Anthropogenic	A1	-	Agricultural lands with a 0.05 ha wetland inclusion (A1a)	n/a	49.6
Anthropogenic	R1	-	Residential property formerly including a house, farmyard, pond, and barn	n/a	3.8
Cultural	3	CUM1	Mineral Cultural Meadow Ecosite	n/a	0.70
Cultural	4	CUT1	Mineral Cultural Thicket Ecosite	n/a	0.56
Natural	4a	MAM2	Mineral Meadow Marsh Ecosite	n/a	0.12
Adjacent Lands along the Tributary 12 Flow Path					
Natural/Cultural	6	FOD7	Fresh-Moist Deciduous Lowland Forest (Basswood dominant) with a ~0.06 ha CUM1 inclusion (6a)	n/a	~0.38
Cultural	7	CUT1	Mineral Cultural Thicket Ecosite	n/a	~0.59

The majority of the Subject Lands are agricultural lands (A1) with an ephemeral flowpath (Tributary 12 of Dingman Creek) passing northeast to southwest through the area. The agricultural field also includes a 0.05 ha wetland inclusion (A1a) in a small depression in the north. This wetland inclusion

is seasonally wet and is the relocation site for terrestrial crayfish from Draft Plan 1. Floral species within this inclusion include Garlic Mustard, Red-Osier Dogwood, Field Horsetail, Red Raspberry, Common Dandelions, Cleavers, several Willow species, Riverbank Grape, and Reed Canary Grass.

Community 3 is a 0.70 ha Mineral Cultural Meadow (CUM1) Ecosite located along the north edge of the Subject Lands. This community is young and dominated by common grass species, with Canada Goldenrod and Wild Carrot also prominent. Several Sugar Maple trees also border the north edge of this community.

Community 4 has been subdivided into two communities (4 and 4a) to reflect a wetland inclusion. Community 4 is a 0.56 ha Mineral Cultural Thicket (CUT1) Ecosite located directly south of Community 3. Tributary 12 (ephemeral flowpath) passes north to south through this community. Community 4a (0.12 ha MAM2) is located where Community 4 slopes down to the south, allowing water to collect in a low point in the topography which has formed the Community 4a inclusion. Community 4a has standing water in early spring and during flood events and receives inputs through two agricultural tile drains from the west (A1a) and agricultural lands to the east. Community 4a was larger (0.43 ha in 2015 compared to 0.12 ha in 2022) prior to tree removal and site disturbance in 2015 or 2016. This disturbance was discussed in the March 2022 Scoping Meeting with the City. A third tile drain directs water westward away from Community 4a and toward Colonel Talbot Road. Floral species in Communities 4 and 4a include Manitoba Maple, Crack Willow, Common Milkweed, Hemp Dogbane, Stinging Nettle, Common Burdock, Smooth Brome, Smartweed species, and Reed Canary Grass.

A rural residential property (3.8 ha) is located along the west edge of the Subject Lands. This property included a house, farmyard, and barn until 2021. The house has been removed and the barn was present until late spring 2021 when it was burned down by trespassers on the property (D. Ailles, personal communication, November 8, 2021). The ephemeral flowpath from the agricultural field flows through the farmyard from east to west. An isolated dug farm pond for livestock watering is also located in this area. The pond contains standing water all year and is not directly online with Tributary 12.

Vegetation communities directly adjacent to the Subject Lands were also investigated. An approximately 0.38 ha Fresh-Moist Deciduous Lowland Forest (FOD7) borders the north Subject Lands. The understory is very sparse. Recreational use (ATV trails, hunting) was also noted by Natural Resource Solutions Inc. (NRSI) in their EIS for the north adjacent lands (NRSI, 2021). The canopy is dominated by American Basswood, Bitternut Hickory, and Manitoba Maple, and the sub-canopy contains Ironwood, Basswood, and Bitternut Hockory (NRSI, 2021). Ground layer coverage is approximately 80% and herbaceous dominant (Violet, Avens, Enchanter's Nightshade). Soils are silty-clay loam with an average moisture of 3 in the FOD7 community.

At the southeast corner of the woodland (Community 6a) is a grass, Goldenrod, and Raspberry-dominant Cultural Meadow (CUM1) inclusion. A Mineral Cultural Thicket (Community 7) surrounds the ephemeral flowpath that carries water east to south-west along the north and west edge of the FOD7 community. This flowpath has a defined channel that is 1-2 m wide and 0.3-0.5 m deep. Flow is present during spring thaw and heavy rainfall or flash flooding events. Canopy cover within the thicket is approximately 15% with Manitoba Maple and Basswood as the dominant tree species. Shrubs such as Nannyberry, Gray Dogwood and Buckthorn cover about 25% of the area. Dominant ground layer species are Reed-canary Grass, Goldenrod, Red-top, and Hairy Aster. Soil probes indicate silt soils with a moisture regime of 3.

4.2.3 Significant Wildlife Habitat

MNRF Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 7E (January 2015) uses ELC ecosite codes and habitat criteria (e.g., size of ELC polygon, proximity to other natural features) to define candidate SWH. Additional candidate SWH types for the City of London were obtained from the London Plan (Policy 1354, 2022). A determination of appropriate candidate SWH

was completed for the Subject Lands using a combination of desktop analysis, ELC codes and field observations, and is provided in Appendix E.

Candidate Seasonal Concentrations of Animals
Bat Maternity Colonies – Adjacent FOD7

Rare Vegetation Communities or Candidate Specialized Habitats for Wildlife
None

Candidate Specialized Habitats of Wildlife Considered SWH
Amphibian Breeding Habitat (Wetlands) – Community 4a, Inclusion A1a

Candidate Habitats for Species of Conservation Concern Considered SWH
Terrestrial Crayfish – Inclusion A1a
Special Concern and Rare Wildlife Species – Barn Swallow [SC], Bristly Buttercup [S3], Green Dragon [SC], Eastern Wood-pewee [SC], Monarch [SC], Scarlet Beebalm [S3], Snapping Turtle [SC], Wood Thrush [SC]

As per the SWH protocols, candidate features are then further evaluated using the results of appropriate field investigations to determine if SWH was confirmed based on criteria such as species presence, abundance, and diversity. Results of the assessment of significance for SWH are presented in Section 5.0. following the discussion on inventory results below.

4.2.4 Floral Inventory

MTE Plant and Wildlife Technician Will Huys completed a three-season floral inventory within and adjacent to the Subject Lands between 2015 and 2019 [Appendix F]. No Special Concern, provincially rare, or floral species protected under the *ESA* (2007) were identified during field investigations. No groundwater indicator species were identified within the Subject Lands.

Floristic Quality Analysis

Based on the floral inventories, vegetation communities A1a, 3, and 4 were assessed using SOFIA (Southern Ontario Floral Inventory Analysis) (Lebedyk, 2018). SOFIA provides several values based on floral inventories to evaluate the value and natural quality of vegetation communities. These values are provided in Table 3. The Coefficient of Conservatism (CoC) is a value (0 to 10) assigned to each species based on the species' degree of fidelity to certain ecological parameters (Oldham, Bakowsky & Sutherland, 1995). Plants found in a wide range of vegetation communities are assigned low values while those that are found in a narrow range of parameters are assigned high values. For a community, the mean Coefficient of Conservatism (CoC) is calculated between all species observed, and this provides a measure of floristic quality (Lebedyk, 2018). A community with a Mean CoC that is >3.5 is of sufficient floristic quality to be of remnant natural quality. A Mean CoC >4.5 would indicate a relatively intact natural area with high floristic quality.

Another measure is the Floristic Quality Index (FQI). FQI is intended to indicate the overall vegetative quality of a community and is calculated by multiplying the mean CoC by the square root of the number of species present (Oldham, Bakowsky & Sutherland, 1995). Based on a study of urban woodlands in the Chicago area, a community with a FQI <20 is considered to have minimal significance from a natural quality perspective, and a community with a FQI >35 has sufficient conservatism and richness to be floristically important from a provincial perspective. The values in Table 4 have been rounded to one decimal place.

Table 4: Southern Ontario Floral Inventory Analysis (SOFIA) Results

Vegetation Community	Mean CoC	FQI	% Native Species	Comments
Inclusion A1a Wetland Inclusion	1.7	6.1	76.9%	• Poor floristic quality, no natural quality.

Vegetation Community	Mean CoC	FQI	% Native Species	Comments
Community 3 Mineral Cultural Meadow	1.2	7.0	54.6%	• Poor floristic quality, no natural quality.
Community 4 and 4a Mineral Cultural Thicket and Mineral Meadow Marsh	0.8	2.5	60.0%	• Poor floristic quality, no natural quality.

All communities are determined to not be of remnant natural quality based on their Coefficient of Conservatism (CoC) scores of <2. The Floral Quality Index (FQI) results also indicate that these communities have limited significance from a natural quality perspective (FQI of <7.0 for each community).

4.2.5 Faunal Site Investigations

Breeding bird surveys, amphibian breeding surveys, and general habitat investigations were completed within the Subject Lands. Table 5, below, summarises the field investigations completed by MTE staff between 2017 and 2021 in the Subject Lands.

Table 5: MTE Field Investigations within the Subject Lands

Survey Type	Date/Time(s)	MTE Surveyor
2015 Breeding Bird Surveys	May 25, 2015 6:30-10:30 June 24, 2015 6:00-9:45	Will Huys
2019 Breeding Bird Surveys	May 7, 2019 10:00-11:00 June 20, 2019 5:30-6:30 July 7, 2019 8:30-10:00	Will Huys
2019 Amphibian Breeding Surveys	April 8, 2019 22:29-22:50 May 16, 2019 22:13-22:25 June 26, 2019 21:35-21:50	Will Huys Zach Anderson
2021 Amphibian Breeding Surveys	March 25, 2021 21:36-21:55 May 13, 2021 20:45-21:45 June 17, 2021 23:10-23:55	Victoria Schveighardt Allie Leadbetter

Avifauna

MTE conducted breeding bird surveys on May 25 and June 24, 2015, for Community 3, and May 7, June 20, and July 7, 2019, for Communities R1, 4/4a, and inclusion A1a [Appendix G]. These surveys were guided by the protocols outlined in the Ontario Breeding Bird Atlas (OBBA) (Cadman et al., 2007). A combination of point counts and area searches were used in each community within the Subject Lands. The number of individuals and the highest level of breeding evidence were recorded for all avian species observed.

A total of 16 avian species were observed during breeding bird surveys. All species observed, except Barn Swallow [SC], are considered common (SARO, 2023). Two of the bird species observed are Partners in Flight species of Regional Concern (PIF, 2022): Barn Swallow and Vesper Sparrow. No protected avian species were identified within the Subject Lands during the completed site investigations.

On July 7, 2019, Barn Swallows [SC] were observed nesting in the barn (33 nests counted) and approximately 20 were seen foraging in the surrounding area. As discussed earlier in this report, this barn burned down in spring of 2021 and nesting habitat is no longer present.

American Robin, American Goldfinch, Northern Cardinal, Red-winged Blackbird, and Song Sparrow were the avian species most frequently observed during breeding bird inventories. Canada Geese and Mallards were also incidentally observed in Community 4a, but no breeding evidence was identified.

Amphibians

MTE staff conducted amphibian call surveys on April 8, May 16, and June 26, 2019, and March 25, May 13, and June 17, 2021, guided by the Marsh Monitoring Program (MMP) protocol (Birds Canada, 2009). The results of these surveys are provided below and in Table 6, and further details are given in Appendix H. Station locations are shown on Figure 8.

Table 6: Amphibian Call Count Code Results

Species	Station A* (Communities A1a & 4a)			Beyond 100 m of Station A (outside Subject Lands)			Station C (Farm Pond)			Beyond 100 m of Station C (outside Subject Lands)		
2019 Breeding Survey												
	April	May	June	April	May	June	April	May	June	April	May	June
Spring Peeper				3								
Northern Leopard Frog							1-2					
Grey Treefrog			1-2, 2-5/6		3	1-2						
American Toad			1-3									
Green Frog									1-2			
2021 Breeding Survey												
	March	May	June	April	May	June	April	May	June	April	May	June
Spring Peeper					2-3						1-2	
Green Frog									1-2			

*Field notes indicate the 2019 observations were all outside the Subject Lands.

Station A was located near the two north wetlands (A1a and 4a) facing approximately northeast. The field notes indicated that the frogs heard here were not within the project area, so these have been assumed to be north of the Subject Lands. In June 2019, two Grey Treefrogs were heard by MTE ecologists and five or six Grey Treefrogs were heard. Three American Toads were also heard. It is our assumption that these observations were from outside the Subject Lands. The Call Code 3 for Spring Peepers and Grey Treefrogs in April 2019 and two Grey Treefrogs in June were outside the 100-metre station radius of Station A. These observations are likely from one of the four Unevaluated Wetlands located 95 m, 100 m, 200 m, and 250 m north of the Subject Lands. This is supported by amphibian breeding surveys conducted by NRSI in 2016 and 2017; Spring Peepers and Gray Treefrogs were heard at Call Code 3 in the wetland located approximately 300 metres directly north of Station A (NRSI, 2021). Spring Peepers were also heard by NRSI ecologists at Call Code 3 in the wetland 100 metres north of the Subject Lands in April 2017.

Station B faced roughly south towards a wetland (Community 5) that was removed as part of Draft Plan 1 as approved under O.Reg. 157/06 (UTRCA Application #54-20). For this reason, results are not included in Table 4 and the station is not shown on Figure 7. Only a single American Toad was heard in a puddle beside this feature during the May 2019 survey prior to removal. Compensation for removal of this feature was determined through the EIS for Draft Plan 1 and will be incorporated into the EIS for Sunset Creek.

Station C faced west towards the dug pond on the farm property. Two Northern Leopard Frogs and two Green Frogs were heard from the pond in 2019. In June 2021 two Green Frogs were heard from the pond.

Bats

No targeted bat maternity roost surveys were conducted within the Subject Lands as there are no forest communities present. Two potential habitat trees were identified during the 2022 tree inventory: Tree #10 (Black Walnut in the old residential yard) and Tree #108 (Sugar Maple along the north property boundary). Cracks or cavities were noted making these potential bat maternity roost habitat for Little Brown Myotis, Northern Myotis, and Tri-coloured Bat. Confirmation of use through acoustic monitoring was not undertaken, therefore these two trees will conservatively be considered bat habitat.

Mammal Burrows

No animal burrows were observed within the Subject Lands that may be suitable for American Badger [END].

Turtles

No turtles were incidentally observed during field investigations. However, the farm livestock watering pond was not studied for this project. The pond retains water through the summer and may support Snapping Turtle or Painted Turtle.

Terrestrial Crayfish

More than 30 Terrestrial Crayfish chimneys were observed in wetland inclusion A1a. This inclusion was also used as the relocation area for 24 crayfish removed from Community 5 as part of the first phase of development of Draft Plan 1 as approved under O.Reg. 157/06 (UTRCA Application #54-20).

Aquatic Habitat

Tributary 12 of Dingman Creek (an ephemeral flowpath within the Subject Lands) flows from northeast to southwest and passes through Community 3, 4, 4a, the agricultural field (A1), and the farmyard. The low-lying swale is more defined in north adjacent lands but is only a slight depression through the Subject Lands. The flowpath in the agricultural field is plowed and planted through.

Two small wetlands (A1a and 4a) in the north Subject Lands are seasonally wet and do not support fish.

A dug pond on the farm property in the west Subject Lands remains wet through the summer; however, it is anthropogenic and is not connected to the swale. This pond is not fish habitat.

The Fisheries and Oceans Canada (DFO) Species at Risk mapping was reviewed for aquatic species protected by the *Endangered Species Act* (2007) within 1 km of the Subject Lands (DFO, 2020). Silver Shiner critical habitat is located in Dingman Creek, located approximately 1 km downstream of the Subject Lands. There is no direct connection between downstream fish habitat and Tributary 12 as a culvert located just above Dingman Creek (where it crosses West Graham Place) is perched, preventing fish movement.

Incidental Observations

White-tail Deer were observed on the Subject Lands on June 26, 2019, and in Community 4a on October 14, 2021. Coyotes were seen and heard on site on June 26, 2019. Wild Turkeys have also been observed in the agricultural fields on site.

5.0 Natural Heritage Policy Considerations

Provincial and municipal natural heritage policies provide guidelines that determine appropriate land uses on and adjacent to natural heritage features and functions. This section reviews the provincial, municipal and Conservation Authority regulatory policies which apply to Natural Heritage features and functions of the Subject Lands and 120 m adjacent lands.

Policies and regulations that may pertain to the Subject Lands include:

- the 2020 Provincial Policy Statement, Section 2.1, issued under the *Planning Act, 1990*
- these have been reviewed in conjunction with the Natural Heritage Reference Manual (NHRM) (OMNR, 2010),
- the London Plan, Section 6 – Environmental Policies (May 25, 2022),
- the City of London Environmental Management Guidelines (2021),
- the UTRCA Regulations (*Conservation Authorities Act*, Section 28 – *Ontario Regulation 157/06*).
- the *Endangered Species Act, 2007*
- the *Migratory Birds Convention Act, 1994*

The policies above are applied to natural features and functions identified in Section 4.0 of this EIS in order to determine which components of the natural heritage system will require additional consideration.

5.1 Provincial Policy

The Provincial Policy considerations are based on the Provincial Policy Statement from MMAH, 2020, Section 2.1 and reviewed using the Natural Heritage Reference Manual (Sections 5-11) (OMNR, 2010).

5.1.1 Provincially Significant Wetlands

No Provincially Significant Wetlands (PSW) are located within 120 metres of the Subject Lands. There are two small (0.05 ha and 0.12 ha) Unevaluated Wetlands located within the Subject Lands, and two Unevaluated Wetlands in the 120 m Adjacent Lands to the north. These will be considered under municipal policy in Section 5.2.

5.1.2 Provincially Significant Woodlands

No vegetation within the Subject Lands has been identified as a Significant Woodland on Map 5 of the London Plan (2022). The adjacent woodland to the north of the Subject Lands (FOD7 and associated CUT1 and CUM1) was evaluated by Natural Resource Solutions Inc. (NRSI) on August 25, 2016 as per Section 4.0 of the City of London Environmental Management Guidelines (EMG, 2007). This woodland was determined to be significant due to the presence of a hydrological feature that is within/contiguous with the woodland (NRSI, 2021). The Significant Woodland Assessment Score Sheet is provided in Appendix I. Based on the evaluation completed by NRSI, the north woodland, as delineated by NRSI, will be considered a Significant Woodland in this EIS [Figure 9].

5.1.3 Provincially Significant Valleylands

There are no Significant Valleylands identified within the Subject Lands (London Plan Map 5, May 2022).

5.1.4 Significant Wildlife Habitat

Candidate significant wildlife habitat (SWH) is based on ELC communities that were identified in Section 4.5.1. A full analysis of candidate SWH is provided in Appendix E. Confirmed significant wildlife habitat is determined through appropriate field investigations and evaluation of species use in accordance with specific criterion outlined in the Ecoregion Criteria Schedules 7E (MNRF, 2015).

Bat Maternity Habitat – Adjacent FOD7
The adjacent FOD7 community may contain bat maternity roost trees, but this was not confirmed through a habitat assessment by MTE or NRSI.

Candidate SWH – Unconfirmed (Adjacent FOD7)

Amphibian Breeding Habitat (Wetlands) – Community 4a (MAM2) and Inclusion A1a
Amphibian breeding surveys in 2019 and 2021 confirmed that the defining criteria for significance are not met in Community 4a or Inclusion A1a.

Not SWH – Confirmed Not Significant (Subject Lands)

Terrestrial Crayfish – Inclusion A1a
Terrestrial Crayfish chimneys (30+) were observed in wetland inclusion A1a.

SWH – Confirmed Significant (Inclusion A1a)

Special Concern and Rare Wildlife Species – Subject Lands and adjacent lands
Based on the Special Concern and rare wildlife species records review [Appendix C], there are several SOCC potentially present in the area of the Subject Lands. As noted in Section 4.2.5.1, Barn Swallow [SC] were observed nesting in the barn and foraging in the surrounding area during breeding bird surveys in 2019 but the barn burned down due to vandalism in spring of 2021 and nesting habitat is no longer present. No other Special Concern or rare species, including the ones identified in the records review, were observed during field investigations in the Subject Lands or north adjacent woodland.

Not SWH – Confirmed Not Significant (Subject Lands and adjacent lands)

In conclusion, the only SWH confirmed within the Subject Lands is Terrestrial Crayfish SWH in Community A1a. Bat maternity roost SWH is unconfirmed in Community 6 north of the Subject Lands. No other SWH is present.

5.1.5 Areas of Natural and Scientific Interest

There are no ANSIs within or adjacent to the Subject Lands.

5.1.6 Fish Habitat

Based on orthographic imagery interpretation and review of drainage maps (OMAFRA, 2020), Tributary 12 of Dingman Creek flows from northeast to southwest within the Subject Lands as an ephemeral flowpath. This flowpath is relatively undefined and is regularly plowed through. The flowpath is not fish habitat but contributes to base flow to fish habitat in Dingman Creek, approximately 1 km downstream. As such, inputs to downstream watercourses should be considered.

5.1.7 Habitat of Endangered or Threatened Species

A complete assessment of the potential for Endangered and Threatened species within the Subject Lands based on a Species at Risk records review is provided in Appendix C. Based on available habitat and targeted surveys, Endangered bat species (Little Brown Myotis, Northern Myotis, Tri-coloured Bat) are the only Protected Species and/or habitat for Protected Species present on the Subject Lands. Two trees within the Subject Lands are considered candidate bat maternity roost trees, and their locations are shown on Figure 9. The adjacent FOD7 community along the north

property boundary may also contain trees with peeling/loose bark or holes that could support maternity roosts for Little Brown Myotis [END], Northern Myotis [END], or Tri-coloured Bat [END].

5.2 Municipal Policy

The municipal Natural Heritage policy considerations are based on the London Plan, May 25, 2022, Chapter 6 - Environmental Policies. Many natural heritage policies in the London Plan protect features from the PPS (MMAH, 2021) and are discussed in Section 5.1, however the assessment of significance for these features will be repeated here for clarity. The relevant policy sections are included in brackets.

5.2.1 Provincially Significant Wetlands, Wetlands, and Unevaluated Wetlands (1330-1336)

There are two Unevaluated Wetlands located within the Subject Lands. The agricultural field contains a wetland inclusion (A1a) in the north that is 0.05 ha. Community 4a is a 0.12 ha Mineral Meadow Marsh located east of A1a. Community 4a was about 0.43 ha in size prior to disturbance in 2015 or 2016. Both features are connected hydrologically via an agricultural tile drain that directs water from A1a to 4a. Another tile drain directs water away from Community 4a toward Colonel Talbot Road.

Due to the small size of these wetlands, an Ontario Wetland Evaluation System (OWES) assessment was not completed for either feature. The OWES manual states that the minimum size of a vegetation community for mapping purposes is typically 0.5 ha and wetlands under 2 ha are generally not evaluated (OWES, 2022). Both Unevaluated Wetlands do not meet the size criteria for completing an OWES assessment.

Based on site investigations, both wetlands are isolated from other wetlands or waterbodies, limited to one wetland type, have no protected species or species of conservation concern, and are too small to provide significant social, recreational, or economic value. The diversity of the surrounding habitats is also low, as Community 2 is surrounded by a disturbed CUT1/CUW1 community and active agriculture, and Community 3 is bordered by agriculture and a single-family residence. The Unevaluated Wetlands are therefore non-significant and will be treated as Wetlands in accordance with London Plan policy.

Two additional Unevaluated Wetlands are identified on Map 5 approximately 95 and 100 metres to the north. These communities are outside the legal parcel and were not investigated.

5.2.2 Significant Woodlands and Woodlands (1337-1343)

No vegetation within 120 m of the Subject Lands has been identified as a Significant Woodland or Woodland on Map 5 of the London Plan (May 2022). As discussed in Section 5.1.2, the woodland patch on adjacent lands along the north boundary of the Subject Lands was determined to be a Significant Woodland. NRSI's Significant Woodland Assessment Score Sheet (2021) is provided in Appendix I of this EIS.

5.2.3 Significant Valleylands and Valleylands (1344-1351)

As noted in Section 5.1.3, there are no Significant Valleylands identified within the Subject Lands (London Plan Map 5, May 2021). A mapped Valleyland (London Plan Map 5, 2021) passes through the Subject Lands northeast to southwest and is associated with Tributary 12 of Dingman Creek. This ephemeral flowpath is plowed and planted through in the agricultural field and is only wet in the early spring or during flood events. The flowpath collects surface drainage and may contribute to downstream watercourses such as Dingman Creek. The Valleyland does not contain unusual communities, high diversity, or high quality vegetation communities within the Subject Lands.

5.2.4 Significant Wildlife Habitat (1352-1355)

As discussed in Section 5.1.4, wetland inclusion A1a in the Subject Lands is confirmed SWH for Terrestrial Crayfish and bat maternity roost habitat is unconfirmed in the adjacent FOD7 community.

The London Plan also includes categories of habitat considered SWH within the City. The Subject Lands do not have a high diversity of species that are of value for research, conservation, education, and passive recreation opportunities. The Subject Lands also do not provide under-represented habitat types for the City of London (i.e., large marshes, shallow aquatic or open aquatic wetlands, tall grass prairie and savannah, bog, fen, or bluff greater than 0.5 ha). No additional SWH are present on the Subject Lands.

5.2.5 Areas of Natural and Scientific Interest (1356-1360)

As discussed in Section 5.1.5, there are no ANSIs within 120 m of the Subject Lands.

5.2.6 Fish Habitat (1323-1324)

As discussed in Section 5.1.6, Tributary 12 contributes base flow to fish habitat in Dingman Creek downstream, but no direct fish habitat exists within the Subject Lands.

5.2.7 Habitat of Endangered Species and Threatened Species (1325-1329)

As discussed in Section 5.1.7, there are two potential bat maternity roost trees within the Subject Lands [Figure 9] that may support Little Brown Myotis [END], Northern Myotis [END], or Tri-coloured Bat [END]. The adjacent FOD7 community along the north property boundary may also contain candidate habitat trees. No other habitat for Endangered or Threatened species is present within the Subject Lands.

5.2.8 Water Resource Systems (1361-1366)

The Subject Lands are located within the Upper Thames River Source Protection Area. The Thames-Sydenham and Region Source Protection Committee indicate that the Subject Lands are within a SGRA and HVA (TSRSPC, 2015). No streams or natural waterbodies are present within the legal parcel.

5.2.9 Environmentally Significant Areas (1367-1371)

There are no Environmentally Significant Areas (ESA) located within or adjacent to the Subject Lands.

5.2.10 Upland Corridors (1372-1377)

There are no Upland Corridors identified on Map 5 of the London Plan (2022) within or adjacent to the Subject Lands.

5.2.11 Potential Naturalization Areas (1378-1381)

There are no Potential Naturalization Areas identified on Map 5 of the London Plan (2022) within 120 metres of the Subject Lands.

5.2.12 Unevaluated Vegetation Patches (1383-1384) and Vegetation Patches Larger Than 0.5 Hectares (1385-1386)

There are no Unevaluated Vegetation Patches within 120 metres of the Subject Lands identified on Map 5 of the London Plan. There are several vegetation patches larger than 0.5 hectares within the Subject Lands, including Community 3 (CUM1) and 4 (CUT1), however both of these communities are cultural, relatively small, and isolated in an agricultural landscape. This area of vegetation is not wetland or woodland and is indicative of habitat along an ephemeral flowpath, so it will not be

evaluated as significant vegetation in this EIS aside from its inclusion in the valleyland. The valleyland was discussed in 5.2.3.

5.2.13 Other Drainage Features (1387)

Based on orthographic imagery interpretation and review of drainage maps (OMAFRA, 2020), Tributary 12 of Dingman Creek passes northeast to southwest within the Subject Lands as an ephemeral flowpath. This flowpath is discussed in Section 5.2.3 as a Valleyland and Section 5.1.6 as indirect Fish Habitat.

5.3 Conservation Authority Regulations

The Subject Lands are regulated under Ontario Regulation 157/06 for a flooding hazard and erosion hazard associated with Tributary 12 flowing northeast to southwest through the Subject Lands. A Section 28 permit will be required for development within the Subject Lands.

5.4 Summary of Identified Features and Functions

Table 7 presents a summary of features and functions of the Subject Lands and adjacent lands that have been identified through the policy review, above, as requiring further consideration in the EIS. Features considered under the PPS are not re-stated under the London Plan.

Table 7: Environmental Considerations for the Study Area

Policy Category	Environmental Consideration	Natural Heritage Feature
Provincial Policy Statement	Significant Woodlands	The north adjacent woodland patch (evaluated as Significant by NRSI).
	Significant Wildlife Habitat	• Candidate Bat Maternity Roost SWH – north adjacent FOD7 • Confirmed Terrestrial Crayfish SWH – Inclusion A1a
	Fish Habitat - Indirect	Flowpath (Tributary 12) on site provides indirect fish habitat through contribution of base flows to Dingman Creek 1 km downstream.
	Habitat of Endangered Species and Threatened Species	Potential roost habitat for Little Brown Myotis, Northern Myotis, and/or Tri-coloured Bat [END] in two trees on site and in adjacent FOD7 community
The London Plan (2022)	Wetlands	• Community 4a (MAM2) • A1a wetland inclusion • Community 5 (SWT2-2 previously removed as part of approvals for Draft Plan 1)
	Valleylands	Associated with Tributary 12
	Water Resources System	West Subject Lands are in an SGRA and HVA.
	Other Drainage Features	Tributary 12 (ephemeral flowpath) within the Subject Lands. Extends to the north and west.
UTRCA Regulations	Regulated Area	UTRCA regulates the flooding and erosion hazard associated with Tributary 12.

6.0 Description of the Development

6.1 Proposed Development

The Proponent is planning the development of a residential subdivision within the Subject Lands [Figures 10 and 11]. The subdivision is proposed to include low and medium density blocks that incorporate single houses, street townhouses, cluster housing, and apartments. The subdivision is proposed to be accessed via Colonel Talbot Road. Several road connections are also proposed to the north and south adjacent lands, as well as connecting to the Phase 1 Lands to the east.

An integrated corridor is proposed to realign and naturalize Tributary 12 as a meandering low flow channel as part of this subdivision. Water will be conveyed through a naturalized corridor that will be similarly aligned to the existing Tributary 12. The corridor provides an opportunity for a more natural stormwater management (SWM) strategy that creates a Significant Valleyland for terrestrial and aquatic habitat, incorporates SWM controls, and provides public amenity space through a pathway network. The integrated corridor is proposed to operate in tandem with Low Impact Development (LID) SWM controls throughout the subdivision along with dry landscaped SWM facilities located adjacent to the Significant Valleyland. This strategy will aim to create additional storage opportunities that are in the floodplain lands but outside of the designated Significant Valleyland. The total width of the integrated corridor is proposed to range from 55 m adjacent to the SWMF up to 127 m but is wider if pathways and landscaped SWMF are included. The valley floor is proposed to be 28 m for the main channel corridor branch and 20 m for the smaller upstream branches (Stantec, 2023). Further details for the corridor are provided in the "Integrated Channel Corridor Functional Design Report, Colonel Talbot Road Development Area" (Stantec, 2023), and are discussed in Section 7.0 of this report in the context of impact mitigation and compensation.

An active Park is proposed to be incorporated in the south of the development, outside the corridor. Multi-use pathways are proposed along the length of the corridor and connect to an existing trail network west of Colonel Talbot Road and a future trail network to the north [Figure 10]. The future Campbell Street North will pass over the corridor to allow vehicle access to both sides.

6.2 Ecological Buffers and Pre-Development Considerations

Based on the above review, there are several components of the natural heritage system within and adjacent to the Subject Lands that will need to be considered in this EIS.

6.2.1 Public Ownership/Acquisition

In policy section 1404-1407 of the London Plan (2022), the City recognizes not all natural heritage areas will be brought into public ownership or shall be open and accessible for public use. Corridor and SWMF will be assumed into municipal ownership.

6.2.2 Ecological Buffers

The London Plan (2022) policies 1412-1416 state that ecological buffers are meant to protect natural heritage features and areas, and their ecological functions and processes, to maintain the ecological integrity of the Natural Heritage System. Buffer requirements are determined as part of an EIS and guided by the City of London *Environmental Management Guidelines*. The updated 2021 EMGs have been consulted but the scoping for the proposed development was agreed upon prior to the new EMG adoption [Appendix B].

The only natural heritage feature being retained in situ is the north adjacent Significant Woodland. The 2007 EMGs recommend a 10 m buffer for Significant Woodlands. The 2021 EMGs recommend a 30 m buffer but acknowledge that smaller buffers may be appropriate for Significant Woodlands less than 2 ha if supported by an EIS. Suggested buffer widths will be considered along with the sensitivity and quality of the features to determine appropriate buffers. Buffers for natural heritage features will be further discussed in Section 7.0 in the context of impact avoidance and mitigation.

6.2.3 Stewardship

Under the stewardship policies 1408-1411 of the London Plan, protection is encouraged for natural heritage systems that remain in private lands. These protection efforts can include stewardship agreements, Conservation easements, education, land trusts, tax incentives, signage and other suitable techniques. Such efforts will be discussed in conjunction with the post development setting in context of mitigation measures and their contribution to the refinement of setbacks and buffers.

7.0 Impacts and Mitigation

This section reviews the development proposal [Figures 10 and 11] and identifies potential direct and indirect impacts to the significant natural heritage features within and adjacent to the development footprint. Appropriate avoidance, protection and mitigation measures for the impacts are also presented. At the conclusion of the section, a net effects table is provided for the proposed development application, summarizing potential impacts as well as proposed mitigation, compensation, or enhancement measures [Table 8].

Based on the analysis in Section 5.0, the significant features identified are summarized in Table 7 above. Significant natural heritage features identified within or adjacent to the Subject Lands are:

- Wetlands
- Significant Woodland
- Valleyland/Drainage Feature (Tributary 12)
- Significant Wildlife Habitat (Terrestrial Crayfish SWH, adjacent Candidate Bat Maternity Roost SWH)
- Fish Habitat (downstream water contribution)
- Habitat of Threatened and Endangered Species (adjacent FOD7)
- Water Resource System

The potential direct impacts of the proposed development on these natural heritage features will be discussed in the following Section 7.1. The potential for indirect impacts is discussed in Section 7.2.

8.0 Direct Impacts and Mitigation

8.1.1 Wetlands

As discussed in Section 5.2.1, the Wetlands A1a (0.05 ha) and 4a (0.43 ha) within the Subject Lands are not considered significant based on field investigations and interpretation of current OWES guidelines (2023). Wetland Community 5, which was removed as approved in Draft Plan 1, was a 0.31 ha Mineral Thicket Swamp which was determined not to have significance. The City of London requires the net retention of all wetland features or functions regardless of significance (London Plan, 2022).

Where a wetland is less than 0.1 ha, replacement may be considered at less than a one-to-one land area basis if there is no net loss of function (City of London, 2022). Where a wetland is between 0.1 ha and 0.5 ha, replacement of wetlands may be considered at less than a one-to-one land area basis if there will be a net gain to wetland function and the overall natural heritage system. Based on these City policies, replacement of Wetlands A1a (0.05 ha), 4a (~0.43 ha prior to disturbance in 2015/2016), and 5 (0.31 ha) is not required at a 1:1 area basis as long as function is maintained or improved. The proposed integrated corridor currently proposes to create a total of 0.75 ha of wetland pool habitat and approximately 1.5 ha of naturalized floodplain (e.g., meadow marsh) to compensate for the 0.79 ha of Wetland removed, resulting in greater than 1:1 compensation by area within the Subject Lands. An additional 0.96 ha of wetland creation is also proposed within the corridor outside the Subject Lands to the north [Figure 12]. The integrated corridor has been designed with greenspace that is intended to provide buffering functions for the wetlands.

The ecological functions of the removed wetlands will be recreated and enhanced in the corridor. Existing wildlife functions include non-significant amphibian breeding habitat and Terrestrial Crayfish SWH. The net increase in wetland area in the corridor will be designed to incorporate both Terrestrial Crayfish habitat (areas with suitable soils and a high groundwater table) and amphibian breeding pools. Relocating the Wetlands will also offer an opportunity to reduce non-native and invasive species within the Subject Lands. Invasive species currently in the Wetlands (e.g., Manitoba Maple, Smooth Brome, Reed Canary Grass, Garlic Mustard) will be removed, and the created corridor wetlands will be naturalized with native wetland plant species. This could result in a net improvement of floral quality within the wetland communities. Finally, the new wetlands will be located closer to one another and will be located within a connected system of aquatic and upland habitat. Improved linkages will facilitate movement of wildlife between habitats. The integrated corridor will provide greater ecological connectivity and habitat diversity than the current system in the Subject Lands.

Hydrological functions of the removed wetlands will also be replicated in the corridor. Currently hydrological function appears to be limited to collection of surface runoff and some tile runoff. This function can be replicated in the corridor wetlands, which will be designed to collect surface runoff and overland flood water, as well as through implementation of Low Impact Development (LID) measures within the development blocks.

Overall, a net benefit to the ecological and hydrogeological functions of Wetlands is anticipated to within the proposed integrated corridor. Indirect impacts are addressed in Section 7.2. Further details on the proposed integrated corridor are provided in Section 7.3 of this EIS.

Recommendation 1:
Create wetland habitat in the valley floodplain of the proposed integrated Tributary 12 corridor to compensate by at least 1:1 area for removal of Wetland communities 4a (MAM2), 5 (SWT2-2), and wetland inclusion A1a.

Recommendation 2:
Include wetland habitat suitable for Terrestrial Crayfish (e.g., wet meadow) and amphibian breeding (e.g., pools up to 1 m deep) within the corridor wetlands. A detailed Landscape Plan should be prepared for the corridor at detailed design.

Recommendation 3:
Replicate the hydrological function (surface runoff storage) of the wetlands to be removed through establishment of wetland pools and LID measures within the integrated corridor. Recommendations for LID measures and wetland creation are provided in the Hydrogeological Assessment.

Recommendation 4:
During detailed design, utilize the Hydrogeological Assessment and water balance calculations to establish a water balance and quality control for the created wetlands to maintain long-term ecological function.

Recommendation 5:
Once the wetlands in the corridor are constructed but prior to planting, water should be pumped to these features in order to establish appropriate wetland soils to support the wetland plant communities at the onset. Potential opportunities may come from site dewatering or redirection of overland flow during construction.

8.1.2 Significant Woodlands and Tree Removal

The small vegetation patch (FOD7, CUM1, CUT1) located along the north boundary but outside of the Subject Lands has been evaluated as a Significant Woodland and delineated by NRSI (2021). This patch is outside the property and no trees in this feature are proposed for removal as part of this Project [Figure 11].

A buffer of 10 m from the south edge of the Significant Woodland to development is proposed by the owner, as guided by the recommendations of NRSI, with residential backyards as the adjacent

land use [Figure 12]. The 10 m buffer meets the minimum width recommended in the EMGs (2007) and was supported in comments on the Initial Proposal Review (IPR). The buffer is still appropriate under the updated 2021 EMGs. The Significant Woodland patch is narrow, less than 1 ha, is isolated from other natural areas, and is partially cultural vegetation (CUT1, CUM1) that is not wooded. The 'Significant' designation was given because of the presence of the Tributary 12 flowpath through the Cultural Thicket. This seasonally wet feature will remain inside the patch and be connected to the integrated corridor for Tributary 12. As there are no identified functions that require an additional buffer width, a 10 m buffer is considered sufficient to protect this identified Significant Woodland from impacts.

Additional measures such as erosion and sediment control fencing will be discussed in Section 7.2 to address potential indirect impacts.

Several isolated trees will need to be removed from the residential area (R1). A Tree Preservation Report has been completed by MTE (2022) to address individual tree removals and protection of retained trees.

Recommendation 6:
No construction or storage of materials or equipment is permitted within the 10 m buffer for the north adjacent Significant Woodland buffer. The 10 m buffer should be marked with tree preservation fencing prior to construction and should not be removed until construction is complete.

Recommendation 7:
Naturalize the 10 m Significant Woodland buffer with a native woodland edge seed mix after construction is complete. Details should be provided on a Landscape Plan at detailed design.

Recommendation 8:
Refer to the Tree Preservation Report (MTE, 2022) that identifies which individual trees are to be removed within the Subject Lands and recommends mitigation measures for protecting retained trees from damage during construction.

Recommendation 9:
Compensation for removal of trees within the Subject Lands, as guided by the Tree Preservation Report (MTE, 2022), should be provided in the naturalized corridor.

8.1.3 Valleylands and Drainage Features

Tributary 12 is identified as a Valleyland on Map 5 of the London Plan. This flowpath is ephemeral and passes through the agricultural and residential areas of the Subject Lands, eventually flowing to Dingman Creek. The proposed integrated corridor will realign and naturalize this flowpath to create a Significant Valleyland. The proposed corridor provides a naturalized Valleyland that is 55 m wide except where the corridor is adjacent to SWM facilities (50 m wide) or in locations with larger wetlands (~60 m wide in the west and ~95 m in the centre across from the Park). The SWMF will be landscaped as green space as well. The width of this corridor has been discussed and agreed upon in principle with the City of London.

Many attributes of Significant Valleylands have been incorporated into the integrated corridor. The integrated corridor approach is expected to create a Significant Valleyland that could benefit the Natural Heritage System with a net increase in high quality aquatic and terrestrial habitat and natural linkages. This corridor will result in a defined natural landform that will restore Tributary 12 from an ephemeral flowpath through an agricultural field to a valuable natural heritage system. Preliminary details and recommendations for creation of the integrated corridor are provided in Section 7.3 of this EIS. The "Integrated Channel Corridor Functional Design Report, Colonel Talbot Road Development Area" (Stantec, 2023) also provides additional channel details.

A pathway is proposed along the outside edge and partially within the edge of the corridor. As noted in London Plan Policy 1344A, Significant Valleylands provide opportunities for the logical extension of the City's pathway systems. The proposed pathways remain along the edge of the corridor and use the SWM blocks where available. The pathways will help to formalize where the public can

enter the Significant Valleylands and limit encroachment into more sensitive areas such as the wetlands. Other methods to reduce encroachment are discussed in Section 7.2.4 and 7.2.5.

Recommendation 10:
A site-specific Hydrogeological Assessment is needed to determine surface and groundwater balances and show that these will be maintained after Tributary 12 is realigned.

Recommendation 11:
Provide a Landscape Plan for the corridor at detailed design to specify proposed native species plantings and targeted wetland and terrestrial communities. The Landscape Plan should incorporate the recommendations for wildlife habitat creation provided in this EIS.

8.1.4 Significant Wildlife Habitat

Candidate Bat Maternity Roost SWH in the adjacent FOD7 community will be retained and no impacts to this community are anticipated. Refer to Section 7.1.2 for mitigation measures for this woodland community.

As discussed in Section 7.1.1 above, Terrestrial Crayfish habitat is proposed to be created within the wetland areas of the integrated corridor. Suitable habitat areas will need soils appropriate for burrowing and a high-water table (CESCC, 2006).

Barn Swallows [SC] were confirmed to be breeding in the barn in the west Subject Lands in 2019, with 33 nests counted. However, the barn burned down in spring of 2021 through vandalism and Barn Swallow habitat is no longer present. Development of the integrated channel provides an opportunity to incorporate Barn Swallow nesting habitat into the corridor design. The road bridge (Campbell Street North) over the realigned channel could be designed to provide nesting habitat as this species frequently nests on human-made structures near or over water. This may be accomplished by adding some angle irons underneath the bridge to support nest building. If the road bridge is not suitable, wooden nest structures should be considered in the terrestrial areas of the corridor. Creation of at least 33 nests is preferred to replace the destroyed nest habitat.

Recommendation 12:
Provide Terrestrial Crayfish habitat in the corridor. Groundwater monitoring by EXP suggests there is potential for shallow groundwater conditions near the north end of the proposed channel (H. Jaggard, personal communication, February 2, 2022). A Hydrogeological Assessment should confirm that the groundwater table will be high enough to provide suitable habitat.

Recommendation 13:
Create Barn Swallow nesting habitat within the proposed corridor. Guidelines for habitat creation are provided in the *Creating Nesting Habitat for Barn Swallow, Best Practices Technical Note Version 1.0* (OMNRF, 2016). Proposed nesting habitat should be incorporated into the corridor plan at detailed design.

8.1.5 Fish Habitat

There is no direct fish habitat present within the Subject Lands, but Tributary 12 contributes base flow to fish habitat in Dingman Creek downstream. The proposed corridor will continue to contribute surface water flows to downstream systems that support fish species. Water quality measures should be incorporated to ensure no significant decrease in downstream water quality. Improvements to connectivity under Colonel Talbot Road, as well as the establishment of refuge pools within the realigned Tributary 12 channel, may also provide opportunity for fish to become established within the integrated corridor upstream of Colonel Talbot Road, resulting in a net improvement to fish habitat on site. More detailed recommendations on features to improve aquatic habitat are provided in Section 7.3.

Recommendation 14:
Incorporate water quality measures for inputs to the proposed corridor in order to prevent a significant decrease in downstream fish habitat.

Recommendation 15:
Create fish habitat within the realigned Tributary 12. Consider incorporation of deeper refuge pools (0.5 m or greater), riffle features using logs or rocks, a variety of in-stream structures (e.g., boulders along edge), and sufficient shading with vegetation to create diverse aquatic habitat and support fish habitat.

Recommendation 16:
Implement erosion and sediment control (ESC) measures (see Section 7.2.1) during construction of the corridor and surrounding subdivision to mitigate potential erosion/sedimentation impacts to downstream fish habitat.

8.1.6 Habitat of Endangered and Threatened Species

As mentioned in Section 7.1.4, potential maternity roost habitat for bats, including Little Brown Myotis, Northern Myotis, and/or Tri-coloured Bat, will be retained in the adjacent FOD7 community. The 10-metre buffer from this community and protective fencing will help prevent damage to these trees during construction.

Two potential bat maternity roost trees are likely proposed for removal within the Subject Lands as a result of this development, although one (Tree #10 in the Tree Preservation Report [MTE, 2022]) may be retained depending on grading requirements next to the SWMF. Appropriate mitigation measures are required to ensure no impacts to Little Brown Myotis, Northern Myotis, and/or Tri-coloured Bat.

Recommendation 17:
Removal of trees (>10 cm DBH) within the Subject Lands should occur between October 1 and March 31, outside of the active bat season.

Recommendation 18:
One rocket-style bat box should be installed in the north adjacent Significant Woodland buffer or within the proposed integrated corridor to compensate for removal of potential habitat. The locations of the bat box should be incorporated into the landscape plan and installation should be guided by a qualified biologist.

8.1.7 Water Resource Systems

The west Subject Lands are located in a significant groundwater recharge zone (SGRA) and highly vulnerable aquifer (HVA) (TSRSPC, 2025). These areas help to maintain the quantity and quality of groundwater resource and ensure hydrological contributions to aquifers are maintained, which is vital for the ecological health of aquatic systems (Aquafor Beech Ltd., 2020). It is important that water quality degradation is avoided during any proposed development. Recommendations from the Hydrogeological Assessment (EXP, 2023) should be implemented.

Recommendation 19:
A Best Management Practice (BMP) and spill contingency plan (including a spill action response plan) should be in place for fuel handling, storage and onsite equipment maintenance activities to minimize the risk of contaminant releases as a result of the proposed construction activities. Contractors working at the site should ensure that construction equipment is in good working order. Equipment operators should have spill-prevention kits, where appropriate.

Recommendation 20:
Limit the use of commercial fertilizers and other chemical applications within the Subject Lands. Consideration may be given to using grass varieties which are heartier and require less extensive watering or fertilizers.

Recommendation 21:
Limit the use of salts or other additives for ice and snow control on the roadways.

Recommendation 22:
Implement additional recommended mitigation measures from the Hydrogeological Assessment (EXP, 2023) to avoid impacts to the quality and quantity of groundwater resources.

8.1.8 Migratory Birds and Wildlife

Nesting migratory birds are protected under the *Migratory Birds Convention Act* (*MBCA*), 1994. No work is permitted to proceed that would result in the destruction of active nests (nests with eggs or young birds), or the wounding or killing of birds, of species protected under the *Migratory Birds Convention Act*, 1994 and/or Regulations under that Act. Some MBCA-protected species, such as Killdeer, may make use of un-maintained areas as they frequently make nests on the ground in construction sites and other disturbed areas.

Wildlife may also experience disturbance during construction when crossing roads or moving through active construction areas. Timing restrictions on vegetation removal are recommended to avoid disturbance to wildlife that may be using natural areas on the site, including breeding birds and reptiles.

Recommendation 23:
Avoid vegetation clearing and site disturbance during migratory bird breeding season (April 1 to August 31) to ensure that no active nests are removed or disturbed, in accordance with the Migratory Birds Convention Act and/or Regulations under that Act. If works are proposed within the breeding season, the area should be checked for nesting birds by a qualified person prior to any vegetation removal or ground disturbance. If nesting birds are present, works in the area should not proceed until after August 31 or until the nest has been confirmed inactive (e.g., young have fledged).

Recommendation 24:
Plan major site grading activities to avoid breeding and migration periods of amphibians (generally April 1 to September 31). Site personnel should be advised to take particular care when working in this active period for wildlife and instructed how to respond appropriately to wildlife encounters.

Recommendation 25:
Make workers aware of potential incidental encounters with wildlife and the necessary protections. If an animal enters the work site, work at that location should stop and the animal should be permitted to leave without being harassed. If there are repeat observations of wildlife in the work area, barrier fencing may be used to direct wildlife away from active construction and toward natural areas.

Recommendation 26:
No Bank Swallow [THR] were observed within or adjacent to the Subject Lands, however creation of suitable habitat (e.g., soil stockpiles) during construction should be avoided. Best management practices for deterring nesting during construction activities should be implemented (OMNRF, 2017). These measures should include stockpile slope management (i.e., grading stockpiles, eliminating vertical extraction faces, reducing slopes to 70 degrees or less) until at least July 15.

8.2 Indirect Impacts and Mitigation

8.2.1 Sediment and Erosion Control Measures

A critical time for the protection of natural heritage features is during the construction phase. For all works and especially those within 30 m of adjacent natural heritage features, substantial sediment and erosion control measures will be required to ensure that indirect impacts to the adjacent Significant Woodlands and the other natural heritage features identified in this report are avoided or mitigated.

Recommendation 27:
A detailed interim stormwater management plan is needed to guide the construction phase and protect the wetland features. Stormwater must be discharged away from existing surface water features and the adjacent Significant Woodland. This should be provided along with LID measures at detailed design.

Recommendation 28:
A multi-barrier approach for sediment and erosion control should be used for this development. Prior to works on site, robust sediment and erosion control fencing should be installed around the development limits, as well as implementing the use of sediment control basins where needed. The fence can act as a barrier to keep construction equipment and spoil away from the vegetation to remain and prevent erosion and sedimentation of the adjacent Significant Woodland and downstream water system.

Recommendation 29:
Sediment and erosion control fencing should be installed according to the City of London Design Specifications and Requirements Manual specifications (2019b) and The Erosion and Sediment Control Guide for Urban Construction (TRCA, 2019). During construction, the lands between the sediment and erosion control fencing should be maintained.

Recommendation 30:
Soil stockpiles should be established in locations where natural drainage is away from the adjacent Significant Woodland and downstream water system. No soil should be stockpiled in close proximity to the Wetlands. If this is not possible and there is a possibility of any stockpile slumping and moving toward the edge of these natural heritage features, the stockpiles should be protected with robust sediment and erosion control. Access to the stockpile should be confined to the up-gradient side. The stockpile locations should be determined at detailed design.

Recommendation 31:
Sediment and erosion control fencing should be inspected prior to construction to ensure it was installed correctly and during construction to ensure that the fencing is being maintained and functioning properly. Any issues that are identified should be resolved as quickly as possible, ideally the same day.

Recommendation 32:
Sediment and erosion control fencing should not be removed until adequate re-vegetation and site stabilization has occurred. Additional re-vegetation plantings and/or more time for vegetation to establish may be required; however, two growing seasons are typically sufficient to stabilize most sites.

Recommendation 33:
All disturbed areas should be re-seeded as soon as possible to maximize erosion protection and to minimize volunteer populations of invasive species which may spread to the adjacent feature.

Recommendation 34:
Roof runoff to bare ground can generate considerable sediment movement beyond the construction limits. Until the grounds have been vegetated and stable for housing and development adjacent to vegetation, roof leaders should be directed to the streets or nearby stabilized vegetated areas.

8.2.2 Construction Site Management

Recommendation 35:
Regular cleanup of the Subject Lands must be completed during construction and post-construction to ensure the adjacent natural heritage features are not degraded.

Recommendation 36:
Equipment should be cleaned prior to arrival on site including tires, undercarriage, and any part of the equipment that may transport invasive seeds to the site. Clean equipment protocols are

provided by London's Invasive Plant Management Strategy (2017) and should be followed where appropriate.

8.2.3 Lighting and Noise

Residential noise is managed through existing By-laws which restrict excessive noise, and wildlife using the Subject Lands are already subject to some noise disturbance by agricultural activities, neighbouring residents, and traffic. Consequently, no impacts resulting from noise are anticipated as a result of development. Lighting impacts could result from the poor placement or shading of exterior fixtures which could cast unnecessary sky glare.

Recommendation 37:
Noise disturbance during construction should be limited to allowable hours per City of London By-law. Where possible, construction noise from heavy machinery should be avoided within 10 m of the north woodlands during the migratory bird breeding period, defined as April 1 to August 31, to avoid disturbance of birds nesting within or adjacent to the Subject Lands.

Recommendation 38:
Exterior lighting within the development area should be fully shielded and pointed downward to minimize skyglow, glare, and unnecessary light trespass into the adjacent natural feature post-construction.

8.2.4 Long-term Land Conservation

Recommendation 39:
Installation of permanent fencing feature is recommended where any private lots back onto natural areas, the integrated corridor, or buffers. Consult with the City of London to determine the height and material of fencing required.

Recommendation 40:
Installation of boundary markers (e.g., posts, bollards) is recommended for the boundary of the proposed future constructed valleyland corridor. Boundary markers can mark the edge of the valleyland to discourage entry by the public, and, unlike a chain link fence, allow unhindered passage of wildlife species.

8.2.5 Landowner(s) Education

Recommendation 41:
Provide homeowners with the "Living with Natural Areas" brochure published by UTRCA in 2005 [Appendix J]. This should help educate the future residents on appropriate ways to interact with natural areas and discourage damaging encroachment activities such as dumping landscape waste, using chemicals on lawns, mowing past residential boundaries, and trampling natural areas. Some studies show the public are more likely to avoid damaging activities (ex: littering, trampling plants, dumping landscape waste) if they are aware of the link between their actions and the subsequent negative impacts, and if they feel they are responsible for the stewardship of a natural area (Gamman et al., 1995; Johnson and Van de Kamp, 1996).

8.3 Integrated Corridor Plan

The integrated corridor proposed in the Sunset Creek development aims to realign Tributary 12, which is currently a seasonally wet flowpath travelling through the disturbed Subject Lands. The proposed realignment of Tributary 12 provides an opportunity to enhance this drainage feature into a more diverse watercourse with increased hydrological and ecological functions. The integrated corridor concept promotes the use of Low Impact Development (LID) SWM controls with large SWM quantity storage adjacent to natural creek systems (City of London, 2021b). This approach would create a Significant Valleyland corridor that will benefit the Natural Heritage System by creating a net increase in high quality aquatic and terrestrial habitat structure and diversity and facilitating

natural linkages. The integrated corridor involves creating a Significant Valleyland that incorporates ecological, hydrological, and recreational functions to benefit both wildlife and residents. The corridor will:

- Establish a Significant Valleyland for terrestrial and aquatic habitat with improved habitat linkages to the rest of the corridor.
- Include stormwater controls; and
- Incorporate public amenity space through a recreational/maintenance pathway network along the outer edge of the corridor.

The Tributary 12 channel is proposed to be designed to create terrestrial habitat features and enhance aquatic habitat quality and diversity on the Subject Lands. Some of these habitat improvements were discussed previously in Section 7.1 of this EIS in the context of compensation for significant feature impacts. A more contiguous system of wetlands is expected to be created with greater connectivity and structural diversity than the current system of small, isolated wetlands. More permanent wetlands may also benefit amphibian breeding by providing diverse wetland habitat that remains wet the full breeding season. Aquatic habitat features in the corridor should include:

- A meandering watercourse stabilized by bank vegetation
- Sequences of step pools providing a range of water velocities and establishing natural sediment transport processes
- Deeper refuge pools (>0.5 m depth) which may retain water during periods of low flow and may support turtle overwintering
- Riffle features constructed using logs or rocks for fish and benthic organisms
- A variety of in-stream structures, such as boulders along the stream edge
- Meadow marsh and wetland pools to support amphibian breeding
- A floodplain connection through overflow into meadow marsh and wetland pools during high flow events

Terrestrial habitat features should also be incorporated to compensate for significant and non-significant habitat removal and provide an overall benefit for wildlife species. Opportunities for terrestrial wildlife habitat features may include:

- Brush/rock piles as cover objects for a variety of small wildlife species
- Bird nesting boxes
- Barn Swallow habitat replacement structures either under the Campbell Street North bridge or in artificial nesting structures along the corridor
- Bat roosting boxes
- Turtle nesting beds

The exact type and number of terrestrial habitat features should be determined at detailed design and incorporated into the corridor Landscape Plan.

The corridor is also proposed to be naturalized with wetland and upland native species. Shade over the low-flow channel can be achieved through shrub and tree planting. All plant species selected for the natural corridor and enhancement areas should be native to the Ecoregion (7E) and, preferably, included in the UTRCA recommended plant lists (UTRCA, 2021b). Common Milkweed and Swamp Milkweed should be added to the seed mixes in low percentages (1%) or as plugs (500 plugs/ha) to provide egg-laying and caterpillar foraging habitat for Monarch. A diversity of flowering plants in the seed mix will provide nectaring habitat for adult Monarch butterflies. Woody plant selection should consider how the species are adapted to the site conditions, including soil type, moisture, slope and sun exposure, as well as additional wildlife benefits (e.g., berry production).

Groupings of wetland shrubs should be introduced within the floodplain as live stakes or small potted stock. Upland tree and shrub planting along valley walls and within the upland buffer can help stabilize the valley as well as improve the structural and ecological diversity of the feature.

Upland tree and shrub plantings are also proposed to provide an ecological buffer between the proposed recreational trail system and the natural corridor.

The recommendations provided in this EIS should be incorporated into the more detailed corridor plan to be provided at detailed design.

8.4 Invasive Species Management

Garlic Mustard is an invasive plant species of concern from the City of London Invasive Plant Management Strategy that has been identified on the Subject Lands. Other non-native species present in the Subject Lands include Manitoba Maple, Smooth Brome, Dame's Rocket, White Sweet Clover, and Reed Canary Grass. Policy 1417 of the London Plan states that management of invasive plant species will focus on key components of the natural heritage system, including Valleylands and Wetlands. As such, an invasive species management strategy should be developed for the Subject Lands, particularly in the area of the proposed corridor.

Removal and control of invasive species should follow published Best Management Practices, such as those published by the Ontario Invasive Plant Council (2020). Once invasive species are controlled, restoration using native species as well as quick-establishing cover crops in disturbed lands adjacent to the constructed corridor should be undertaken to avoid re-establishment of invasives or other nuisance plant species. Monitoring and management of invasive species within the corridor should be included in the monitoring plan.

8.5 Monitoring Plan

Recommendations in this EIS aim to minimize and compensate for direct and indirect impacts to significant natural heritage features and functions. The monitoring plan is recommended to document the implementation of the mitigation and compensation measures during construction and post-construction.

The monitoring plan is recommended to be 2-phase and should consist of a construction monitoring plan and a long-term post-construction plan. The construction monitoring plan is intended to monitor for construction-related impacts, document successes or deficiencies of the implemented mitigation measures and provide guidance on remedial actions for circumstances when mitigation is not successful [e.g., Erosion and Sedimentation Control (ESC) measures]. This plan should continue from clearing and grubbing through to house and corridor construction until grounds adjacent to natural features are vegetated and stabilized. Reports should be made available to the UTRCA and Planning and Economic Development Staff.

Long-term post-construction monitoring should evaluate the success of the proposed active naturalization efforts and planting compensation. Monitoring should be undertaken at Year 1 of corridor naturalization (e.g., plant warranty) to document survivorship or replacements, and at Year 3 to document plant establishment and growth. Remedial actions are triggered if effects exceed pre-determined thresholds (e.g., supplemental plantings if survival rates are low, invasive species management). Wildlife monitoring is also recommended in Years 1 and 3 to document use of the corridor by wildlife. Recommendations for monitoring are outlined below.

The monitoring report for each year of the program should be provided to Development Services by the proponent's consultant, unless otherwise directed in writing by the City Engineer or City Planner. This report will likely be provided by email, unless otherwise requested.

Monitoring requirements are also restated in the Environmental Management Plan [Appendix K]. The monitoring requirements may be updated in the EMP once corridor implementation plans are determined at detailed design.

8.5.1 Encroachment Monitoring

- Once the development is at 80% build-out, annual reporting on encroachment into the adjacent Significant Woodland and the created corridor should be provided to the City of London for two years (Years 1 and 3).
- Monitoring should include looking for litter in natural features, informal trail creation, dumping of yard waste, and other impacts.
- Additional strategies should be implemented if required. Additional strategies should be tailored to the encroachment issue, but may include the addition of signage, adding or repairing fences, additional homeowner awareness, or other strategies.

8.5.2 Corridor Vegetation Monitoring

- Consistent with the documentation prepared in support of Application #160-19, monitoring of the implemented compensation plan (Tributary 12 realignment) should be undertaken post-construction of the naturalized corridor for a period of at least three (3) years. The UTRCA must be advised of any deficiencies or any mitigative measures undertaken to ensure compliance with the relocation plan.
- If the wetland plants in the corridor are planted in the spring, the vegetation should be checked in the fall of the same year, and in the summer of the following year. This is standard practice and should be indicated in the final landscape plan.
- Long-term vegetation monitoring should be completed in Year 1 and 3 after planting to document compliance with the plans and establishment of planted material. Monitoring in Year 1 (e.g., plant warranty) should document success of seed germination/cover and confirm the correct seed mix and/or species were used. Monitoring in Year 3 should document plant establishment and growth. This should be in coordination with the assumption of the corridor lands by the City of London.
- Vegetation monitoring should include a comprehensive plant list based on at least two visits each monitoring year (late spring/early summer and fall) by a qualified professional during the growing season. Approximate species abundance should also be noted. ELC assessments should be completed once vegetation is established to identify the developing communities and confirm appropriate riparian and wetland habitats are provided.
- If present, inventory and map areas of prominent invasive plants throughout the ecological monitoring period. This should include identification of invasive species type, location, and abundance within the corridor, as well as recommended and/or completed management strategies.
- Implement adaptive management strategies where needed. Adaptive management may be triggered by poor survival of planted material (triggered at <80% survival), insufficient vegetation cover, and the presence of unacceptable invasive species (80% native/non-invasive groundcover is target).
- Adaptive management strategies within the naturalized buffer will depend on the problem encountered, but may include:
    - Removal of invasive species, with the method to be species-specific. Refer to the Best Management Practices (BMPs) from the Ontario Invasive Plant Council for the appropriate biological, physical/mechanical, or chemical management strategy;
    - Re-seeding with the target seed mix; or
    - Increased frequency of monitoring (e.g., if adaptive management is required in Year 1, an additional monitoring survey may be completed in Year 2 instead of waiting until Year 3).

8.5.3 Corridor Wildlife Monitoring

- Consistent with the documentation prepared in support of Application #160-19, monitoring of the implemented compensation plan (Tributary 12 realignment) should be undertaken post-construction of the naturalized corridor for a period of at least three (3) years. The UTRCA must be advised of any deficiencies or any mitigative measures undertaken to ensure compliance with the relocation plan.
- Complete wildlife monitoring in Years 1 and 3 following construction and planting of the naturalized corridor to determine success of the habitat creation measures. Wildlife monitoring is recommended to include:
    - Amphibian breeding surveys (April, May, June);
    - If artificial nesting structures are installed, search for Barn Swallow use (one visit between late May and early August);
    - Visual search along 10 m transects for Terrestrial Crayfish chimneys in/around the created wetlands (one visit between April and August); and
    - Incidental wildlife observations during all visits.
- It can be re-evaluated in Year 3 based on wildlife monitoring results whether wildlife habitat creation was successful and if changes or additional monitoring is needed. Pre-development wildlife habitat within the Subject Lands should be used as a baseline to compare the success of habitat creation within the corridor.

8.6 UTRCA Regulation

UTRCA regulates a portion of the Subject Lands under Ontario Regulation 157/06. The regulation area is mainly associated with the flooding hazard from Tributary 12 and a small erosion hazard. A Section 28 permit application and approval should be obtained from the UTRCA for the development of lands within the proposed plan of subdivision which are situated within areas regulated for flood and erosion hazards.

8.7 Net Effects

Table 8, below, summarizes potential impacts to natural heritage features and functions as well as proposed mitigation, compensation, and enhancement measures.

Table 8: Net Effects

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
Artificial Lighting	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected - residential lights	10 m naturalized buffer for Significant Woodlands; exterior lighting within the development area should be fully shielded and pointed downward to minimize skyglow, glare, and light trespass into the Significant Valleyland feature post-construction	No net effect	None
Litter and Garbage	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected - garbage/litter from residents	Garbage bins along sidewalks and multi-use pathways; public education communications [Appendix J] to educate about the importance about the adjacent natural features	No net effect	Public garbage bins should be readily available and emptied regularly. On-going education.
Increased access to sensitive area	Significant Woodland; Significant Valleyland, Wetlands	Medium impacts expected - vegetation could get trampled	Educational materials [Appendix J] to discourage off-path wandering; 10 m Significant Woodland buffer; pathway and boundary markers along Significant Valleyland to discourage entry	No net effect	Encroachment monitoring and ongoing education.
Creation of new trails	Significant Woodland; Significant Valleyland, Wetlands	Medium impacts expected - ad-hoc trails may trample ground cover, transport invasive species	Educational materials [Appendix J] to discourage off-path wandering; 10 m Significant Woodland buffer; pathway and boundary markers along Significant Valleyland to discourage entry	No net effect	Encroachment monitoring and ongoing education.
Tree damage	Significant Woodland	Low impacts expected - machinery too close to trees can break branches or wound trunks	10 m buffer; Tree Preservation Report mitigation measures (MTE, 2022); any issues with fencing should be resolved the same day	No net effect	Regular monitoring during construction to ensure tree protection fencing and sediment and erosion control fencing is functioning. Post-construction monitoring to ensure

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
					tree protection measures were successful.
Increased noise	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected - only common species present	Low level noise from adjacent residential homes will not impact common species; noise disturbance during construction should be limited to allowable hours per City of London By-law; noise from heavy machinery should be avoided where possible during the migratory bird breeding period (April 1-August 31) to avoid disturbance of birds nesting	No net effect	Residential by-laws restrict excessive noise.
Disturbance to wildlife during construction	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected - disruption to activities of nearby wildlife will be temporary	Restrict timing of habitat and vegetation removal to outside breeding and sensitive periods for birds and other wildlife; make workers aware of potential incidental encounters and necessary protections; if an animal enters the work site, work at that location will stop and the animal should be permitted to leave unharassed; if there are repeat observations of wildlife in the work area, barrier fencing may be used to direct wildlife away from active construction and toward natural areas	No net effect	Disturbance is temporary and minimal for species within the surrounding lands. Monitoring and reporting protocols for incidental wildlife encounters should be followed.
Decreased infiltration and increased run-off	Wetlands, Significant Valleyland	Low to medium impacts expected - impervious surfaces decrease infiltration	Sediment and erosion control fencing at edge of development should remain until the area is serviced by storm sewers and disturbed areas are seeded; all issues with sediment and erosion control measures should be resolved the same day; refer additional measures in the EXP Hydrogeological Assessment once it is complete	No net effect	Refer to the EXP Hydrogeological Assessment once it is complete.
Increased erosion	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected	Sediment and erosion control fencing and sediment basins installed at development limit; fencing should remain until the area is serviced by storm sewers and disturbed areas are seeded; all issues with sediment and erosion control measures should be resolved the same day	No net effect	Monitor sediment and erosion control fencing.

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
Increased nutrient, pesticide, chemicals, and sediment	Significant Valleyland, Wetlands	Low impacts expected - The watercourse may receive seasonal nutrient and sediment loads post-construction	Stormwater management system; sediment and erosion control plan during construction; ban on cosmetic pesticides; limit the use of commercial fertilizers and other chemical applications; consider the use of grass varieties which are heartier and require less extensive watering or fertilizers; limit the use of salts or other additives for ice and snow control on the roadways	No net effect	Monitor sediment and erosion control fencing.
Visual intrusion	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected - buildings are not visually intrusive along the corridor	Subject Lands are currently mostly agricultural or rural residential, so no significant decrease in visual appeal is anticipated	No net effect	None
Domestic animals	Significant Woodland; Significant Valleyland, Wetlands	Medium impacts expected - off-leash dogs can trample plants - outdoor cats kill small wildlife (birds, frogs, mammals)	Educational materials provided in the “Living with Natural Areas” brochure from UTRCA [Appendix J]	No net effect	Ongoing education.
Introduced invasive plants	Significant Woodland; Significant Valleyland, Wetlands	Low impacts expected - inappropriate disposal of lawn/gardening waste	Active invasive species management plan; native wetland and upland plantings within the Significant Valleyland; 10 m naturalized buffer for Significant Woodlands	Positive net effect	Ongoing education. Monitor the success of invasive species management and establishment of native species.
Air pollution	Significant Woodland;	No impacts expected	The residential subdivision will not generate substantial air pollution	No net effect	

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
	Significant Valleyland, Wetlands				
Fire Hazards	Significant Woodland	Low impacts expected - potential for recreational gatherings	Educational materials provided in the “Living with Natural Areas” brochure from UTRCA [Appendix J]; 10 m Significant Woodland buffer	No net effect	Ongoing education.
Use of heavy machinery – soil compaction	Significant Woodland	Low impacts expected - machinery too close to retained trees can compact soils over vital tree roots	10 m buffer from Significant Woodland; tree protection fencing; all issues with fencing should be resolved the same day	No net effect	Regular monitoring during construction to ensure tree protection fencing and sediment and erosion control fencing is functioning. Post-construction monitoring to ensure tree protection measures were successful.
Use of heavy machinery – oil, gasoline, grease spill	Significant Valleyland, Wetlands	Medium impacts expected - machinery can leak or refueling can generate spills	Establish storage/refueling area away from surface water features; BMPs and a spill contingency plan (including a spill action response plan) should be in place for fuel handling, storage and onsite equipment maintenance activities to minimize the risk of contaminant releases as a result of the proposed construction activities; contractors working at the site should ensure that construction equipment is in good working order; equipment operators should have spill-prevention kits, where appropriate	No net effect	Containment of spills should be included in plan.
Changes in soil grade	Significant Woodland	Medium impacts expected - raising the grades may	10 m buffer from Significant Woodland; tree protection fencing; all issues with fencing should be resolved the same day	No net effect	Regular monitoring during construction to ensure tree protection fencing and sediment and erosion control

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
		result in root suffocation - lowering grade may result in removal of tree roots			fencing is functioning. Post-construction monitoring to ensure tree protection measures were successful.

9.0 Summary and Conclusions

York Developments, on behalf of W3 Lambeth Farms Inc., has initiated the Draft Plan of Subdivision approval process for a residential subdivision development at 3680 and 3700 Colonel Talbot Road in London, ON.

The proposed development avoids direct impacts to the adjacent Significant Woodland and candidate SWH by providing a 10 m buffer as previously approved by the City of London.

Tributary 12 and several small Wetlands and their associated habitats will be removed as part of this development and replicated and enhanced within the proposed integrated corridor. This will result in greater than 1:1 area compensation and a net benefit for ecological, hydrological, and recreational value within the Subject Lands. The integrated corridor is proposed to be a Significant Valleyland averaging 55 m in width (plus adjacent landscaped SWMF) with a realigned and restored Tributary 12, providing a net increase in terrestrial and aquatic habitat and natural linkages. This EIS has provided recommendations for the creation of this integrated corridor, and these should be incorporated into a Landscape Plan at detailed design. The EIS has also set out recommendations to protect the adjacent significant natural heritage features from indirect impacts, such as erosion and sediment control measures and homeowner education.

Provided the recommendations in this EIS and the related technical reports supporting the proposed corridor plan are followed, it is our opinion that the proposed development can proceed. Detailed design phases of the development application can be assessed through an Environmental Implementation review document. This EIS does not need to be updated once Draft Plan approval has been obtained.

MTE seeks comments from the City of London and the UTRCA with respect to the contents of the EIS. Formal comments can be submitted in writing to MTE of behalf of the client. Should you wish to clarify any questions or require additional information as part of the review of this EIS, do not hesitate to contact us.

All of which is respectfully submitted,

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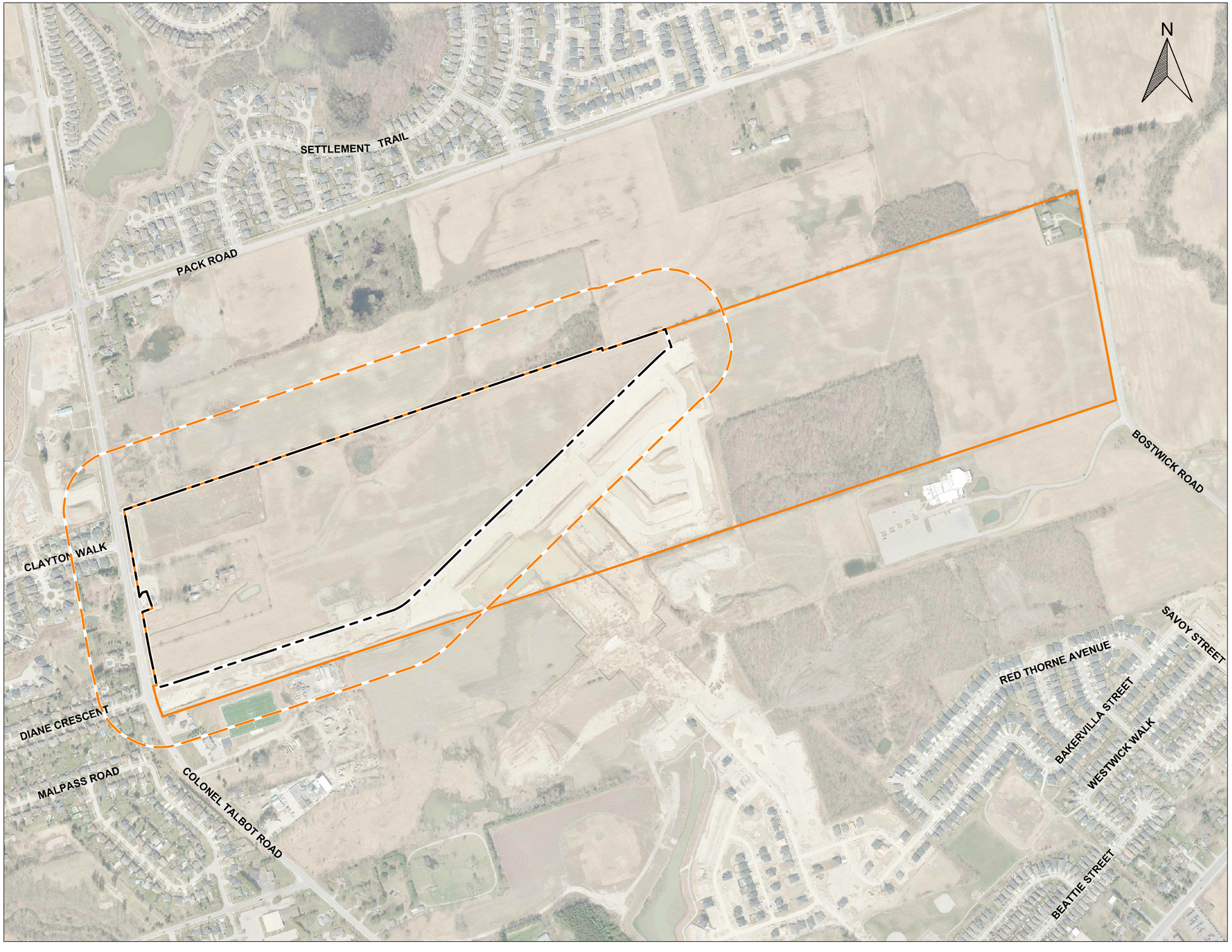
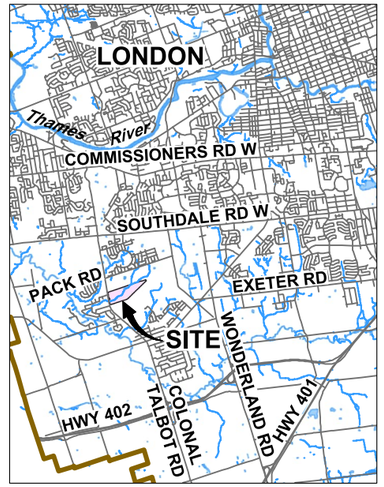
Figures





KEY PLAN (nts)

LEGEND

- SUBJECT LANDS
- STUDY AREA (120m from Subject Lands)
- LEGAL PARCEL

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD AND WATER NETWORK (key plan), OPEN DATA SET; AND
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 150 300m
1:7,500

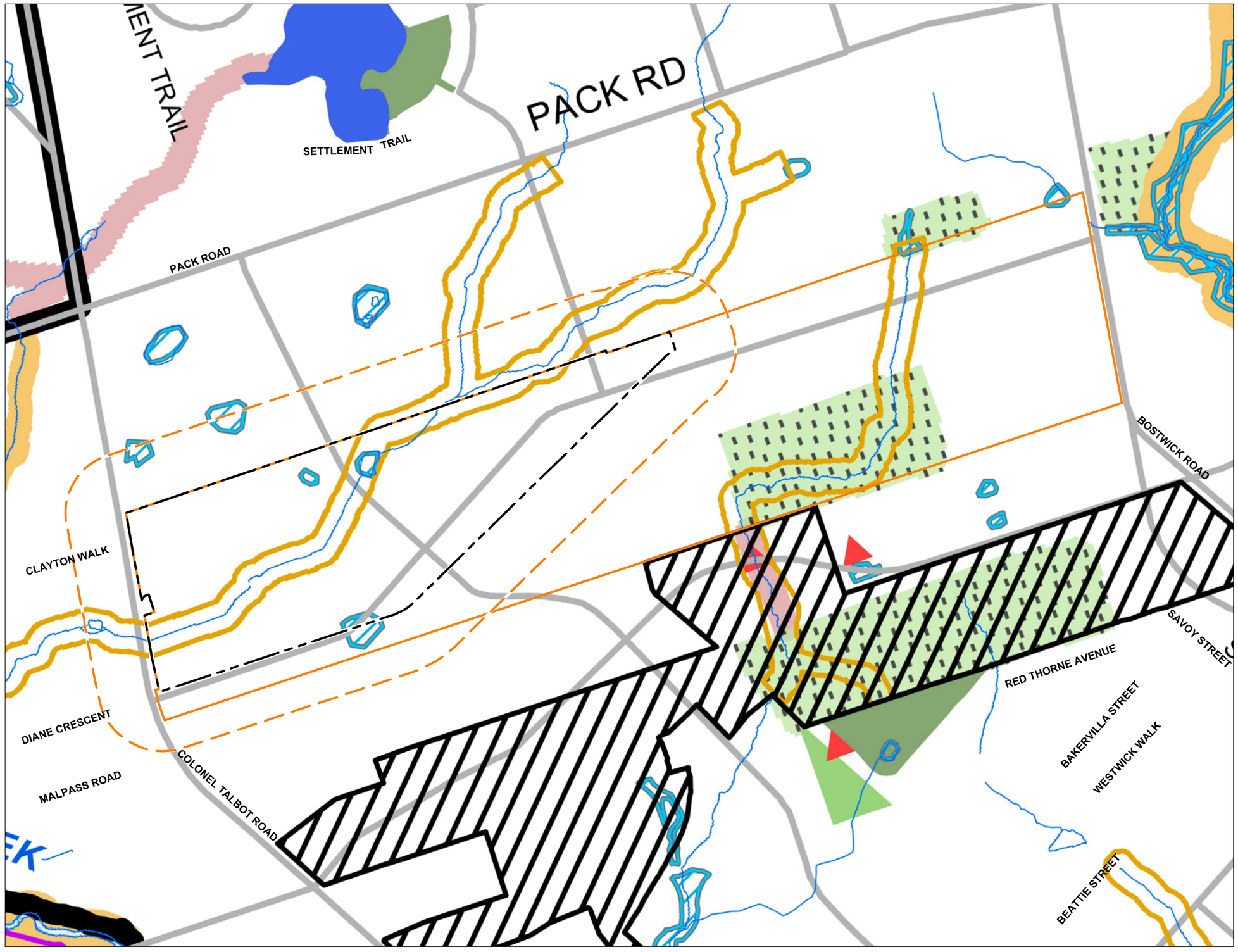
MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
PROJECT LOCATION

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 45598-101
Date: Dec 12/23	Rev No.: 0

FIGURE 1



N

LEGEND

- SUBJECT LANDS
- STUDY AREA (120m from Subject Lands)
- LEGAL PARCEL
- POTENTIAL NATURALIZATION AREA
- SIGNIFICANT VALLEYLAND
- SIGNIFICANT WOODLAND
- STREET
- SUBJECT TO SITE SPECIFIC APPEALS (LPAT APPEAL PL170100)
- UNEVALUATED VEGETATION PATCH
- UNEVALUATED WETLAND
- UPLAND CORRIDOR
- URBAN GROWTH BOUNDARY
- WATERCOURSE/POND
- WOODLAND

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
CITY OF LONDON, MAP 5 - NATURAL HERITAGE, MAY 28 - 2021.

NOTES

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0 150 300m
1:7,500

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3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
NATURAL HERITAGE

Drawn DCH	Scale AS SHOWN
Checked	Project No. 45598-101
Date Dec 12/23	Rev No. 0

FIGURE 2

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LEGEND

- SUBJECT LANDS
- STUDY AREA (120m from Subject Lands)
- LEGAL PARCEL
- ENVIRONMENTAL REVIEW
- FARMLAND
- GREEN SPACE
- NEIGHBOURHOOD
- STREET
- URBAN GROWTH BOUNDARY

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
CITY OF LONDON, MAP 1 - PLACE TYPES, MAY 25 - 2022.

NOTES

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SCALE IN METRES
0 150 300m
1:7,500

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ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
PLACE TYPES

Drawn DCH	Scale AS SHOWN	**FIGURE 3**
Checked	Project No. 45598-101	
Date Dec 12/23	Rev No. 0	

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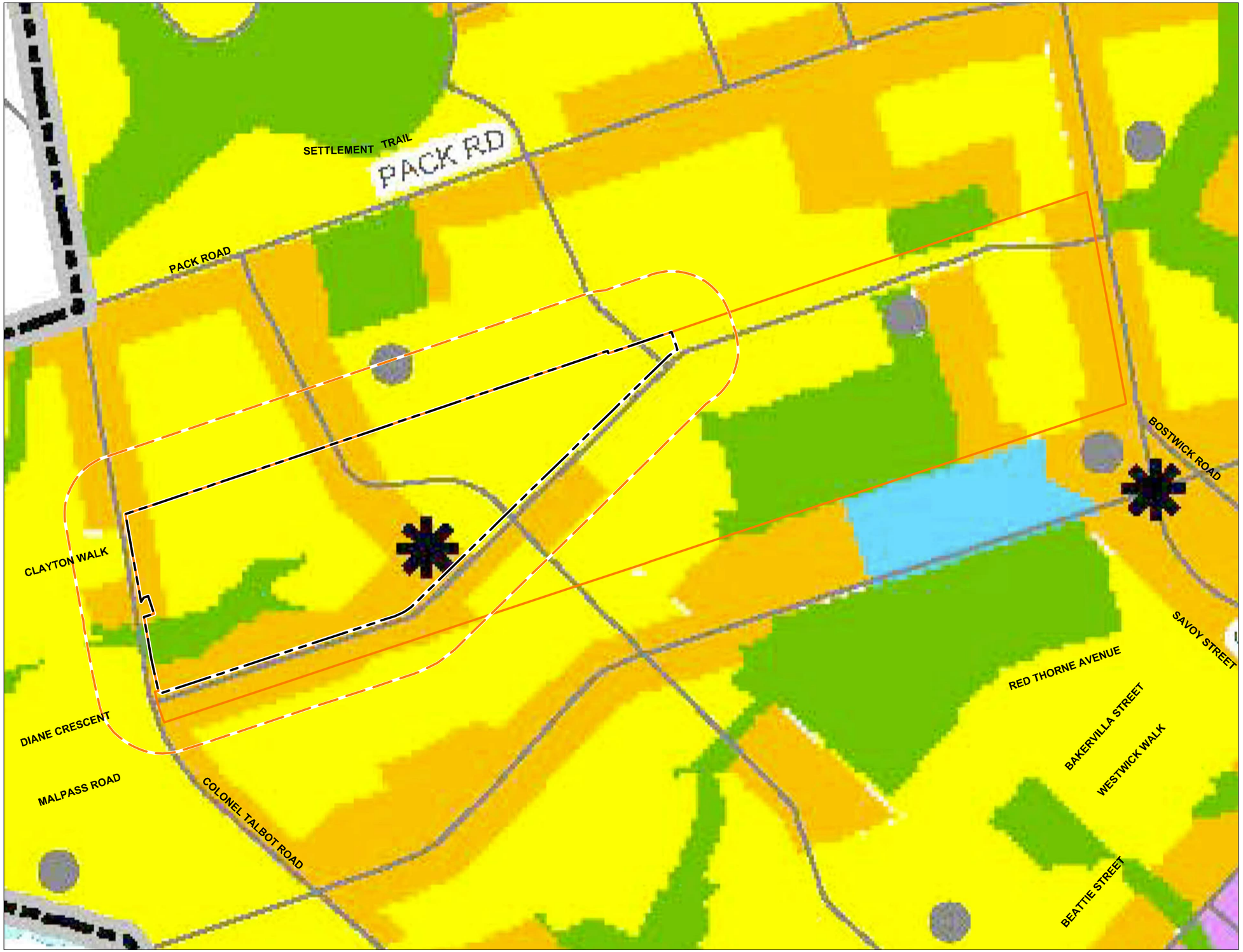

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LEGEND

- SUBJECT LANDS
- STUDY AREA (120m from Subject Lands)
- LEGAL PARCEL
- COMMERCIAL
- INSTITUTIONAL
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- OPEN SPACE and ENVIRONMENTAL REVIEW
- NEIGHBOURHOOD CENTRAL ACTIVITY NODE
- PARKS (Existing and Proposed)

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
CITY OF LONDON, SCHEDULE 4, SOUTHWEST AREA LAND USE PLAN.

NOTES

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ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 150 300m
1:7,500

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ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
SOUTHWEST AREA PLAN (SWAP) LAND USE

Drawn DCH	Scale AS SHOWN	**FIGURE 4**
Checked	Project No. 45598-101	
Date Dec 12/23	Rev No. 0	

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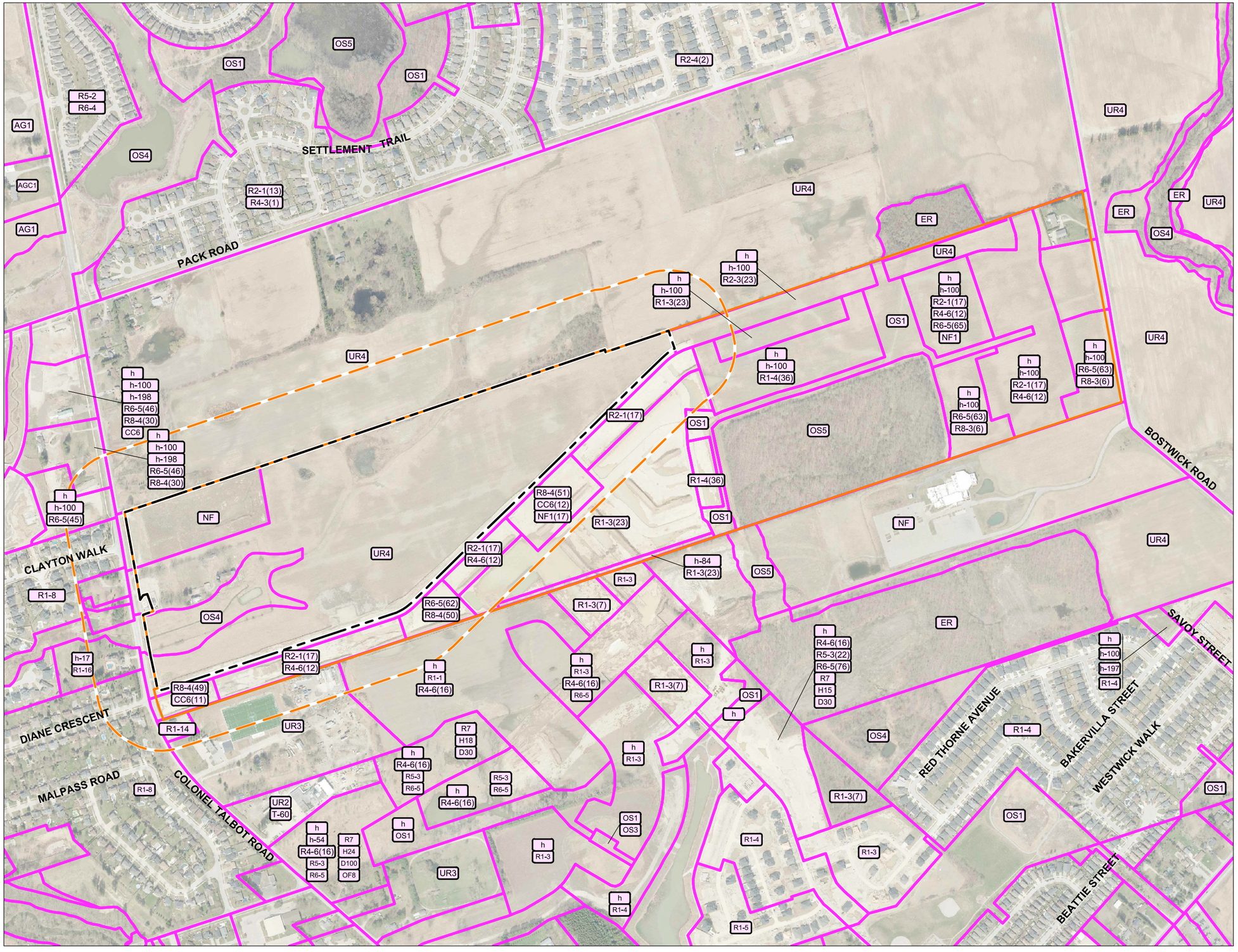

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LEGEND

- SUBJECT LANDS
- STUDY AREA (120m from Subject Lands)
- LEGAL PARCEL

- AG AGRICULTURAL ZONE
- AGC AGRICULTURAL COMMERICAL ZONE
- CC CONVENIENCE COMMERCIAL ZONE
- D DENSITY UNITS/HECTARE
- ER ENVIRONMENTAL REVIEW ZONE
- h HOLDING ZONE PROVISION
- H HEIGHT MAXIMUM
- NF NEIGHBOURHOOD FACILITY ZONE
- R RESIDENTIAL ZONE
- OS OPEN SPACE ZONE
- T TEMPORARY ZONE
- UR URBAN RESERVE ZONE

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
CITY OF LONDON INTERACTIVE ZONING MAP.

NOTES

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ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 150 300m
1:7,500

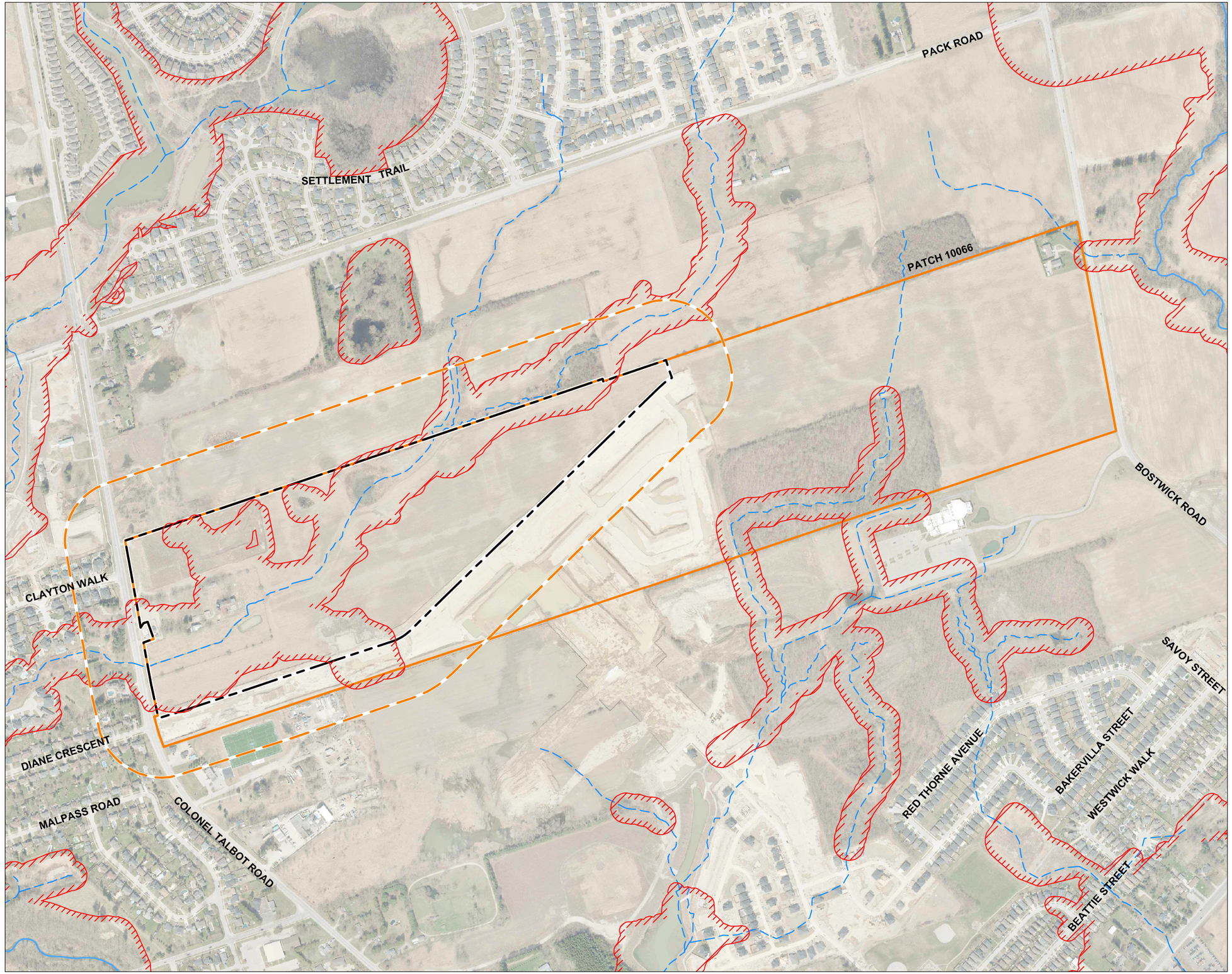
MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
ZONING

Drawn DCH	Scale AS SHOWN
Checked	Project No. 45598-101
Date Dec 12/23	Rev No. 0

FIGURE 5



N

LEGEND

- SUBJECT LANDS
- STUDY AREA (120m from Subject Lands)
- LEGAL PARCEL

WATERCOURSE (UTRCA)
- PERMANENT
- INTERMITTENT/EPHEMERAL

- UTRCA SCREENING AREA

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
UPPER THAMES CONSERVATION AUTHORITY (UTRCA) REGULATED SCREENING AREAS AND WATER NETWORK.

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 150 300m
1:7,500

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
UTRCA REGULATION SCREENING AREA

Drawn: DCH	Scale: AS SHOWN	**FIGURE 6**
Checked	Project No.: 45598-101	
Date: Dec 12/23	Rev No.: 0	

Client: W3 Farms Inc.
Plot Date: 12 December 2023 Time:12:04:23
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Photograph C: Looking Northeast

Photograph E: Northeast

ELC NUMBER	ELC CODE	Description
3	CUM1	Mineral Cultural Meadow (0.70ha)
4	CUT1	Mineral Cultural Thicket (0.56ha)
4a	MAM2	Mineral Meadow Marsh Inclusion (0.12ha)
5	SWT2-2	Feature Removed as Part of Prior Approval
6	FOD7	Fresh-Moist Deciduous Lowland Forest - Basswood dominant (0.38ha)
6a	CUM1	Mineral Cultural Meadow Inclusion (0.06ha)
7	CUT1	Mineral Cultural Thicket (0.59ha)
8	FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest Type (7.7 ha)
9	MAM2	Mineral Meadow Marsh (1.38ha)
A1		Agricultural Field (49.58ha)
A1a		Wetland Inclusion (0.05ha)
R1		Residential (3.83ha)
R2		Residential (18.98ha)

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

WATERCOURSE
- PERMANENT
- INTERMITTENT/EPHEMERAL

- (3) VEGETATION COMMUNITY
- FEATURE REMOVED AS PART OF PRIOR APPROVAL (Draft Plan 1)
- (1) PHOTOGRAPH (Location and Viewing Direction)

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
UPPER THAMES CONSERVATION AUTHORITY (UTRCA) WATER NETWORK.

NOTES

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ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 100 200m
1:5,000

Photograph A: Looking West-northwest

Photograph B: Looking North-northeast

Photograph D: Looking Southwest

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
VEGETATION COMMUNITIES

Drawn	DCH	Scale	AS SHOWN
Checked		Project No.	45598-101
Date	Dec 12/23	Rev No.	0

FIGURE 7

ELC NUMBER	ELC CODE	Description
3	CUM1	Mineral Cultural Meadow (0.70ha)
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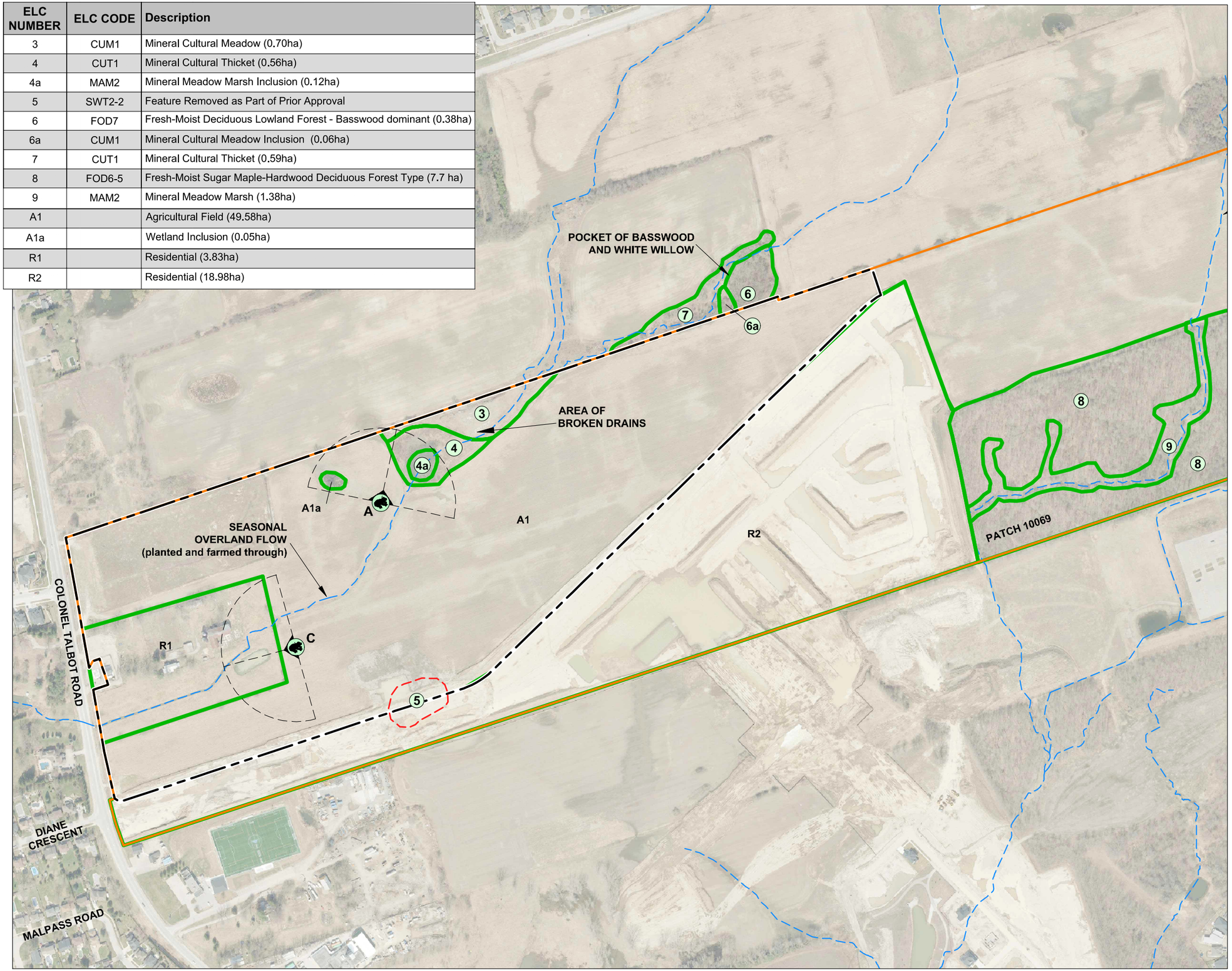

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

WATERCOURSE
- PERMANENT
- INTERMITTENT/EPHEMERAL

- 3 VEGETATION COMMUNITY
- FEATURE REMOVED AS PART OF PRIOR APPROVAL (Draft Plan 1)

AMPHIBIAN SURVEY STATION (100m RADII SHOWN)

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022; AND
UPPER THAMES CONSERVATION AUTHORITY (UTRCA) WATER NETWORK.

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SCALE IN METRES
0 100 200m
1:5,000

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
WILDLIFE SURVEY LOCATIONS

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 45598-101
Date: Dec 12/23	Rev No.: 0

FIGURE 8

ELC NUMBER	ELC CODE	Description
3	CUM1	Mineral Cultural Meadow (0.70ha)
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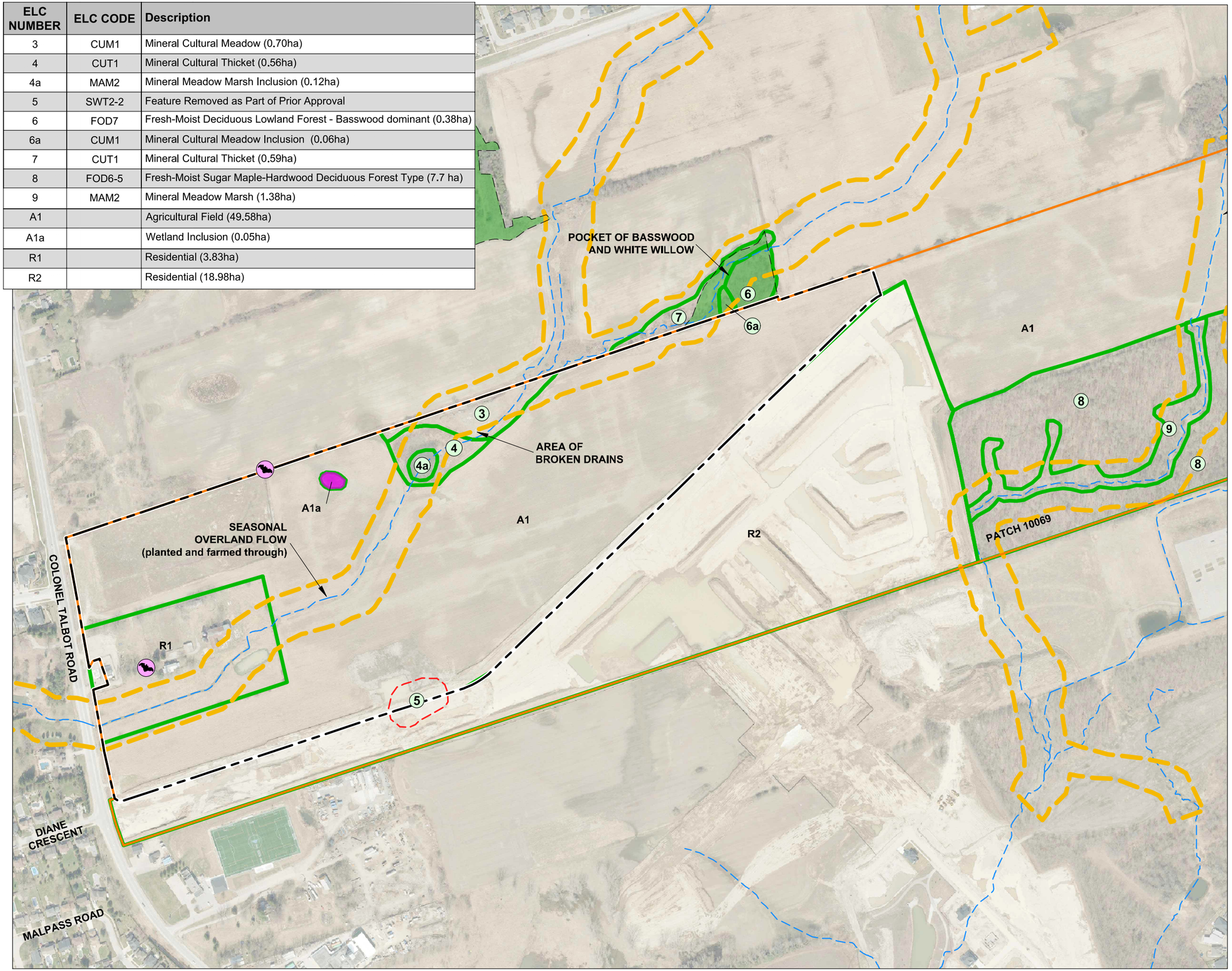

N

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

WATERCOURSE
- PERMANENT
- INTERMITTENT/EPHEMERAL

- 3 VEGETATION COMMUNITY
- FEATURE REMOVED AS PART OF PRIOR APPROVAL (Draft Plan 1)
- TERRESTRIAL CRAYFISH SWH
- SIGNIFICANT WOODLAND (NRSI)
- VALLEY LAND (City of London - Map 5)
- CANDIDATE BAT MATERNITY ROOST TREE

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', OCTOBER 25 - 2022;
CITY OF LONDON, MAP 5 - NATURAL HERITAGE, MAY 28 - 2021; AND
UPPER THAMES CONSERVATION AUTHORITY (UTRCA) WATER NETWORK.

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0 100 200m
1:5,000

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
SIGNIFICANT NATURAL HERITAGE FEATURES AND KEY FINDINGS

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 45598-101
Date: Dec 12/23	Rev No.: 0

FIGURE 9

Client: W3 Farms Inc.
Plot Date: 12 December 2023 Time:12:09:42
CAD: P:\45598\101\2_PROD\45598-101-R02 ENVIRONMENTAL IMPACT STUDY\45598-101-R02009.DWG
Original Format in Tabloid (279mm x 432mm; 11" x 17")
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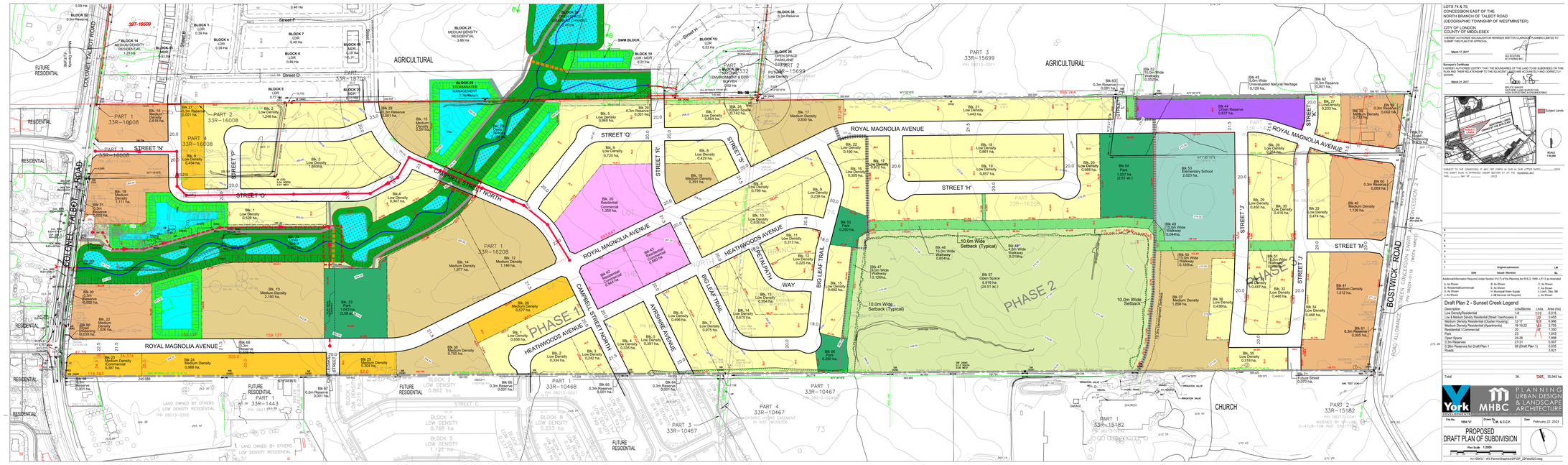
Figure 10 - Development Plan (MHBC, 2023)



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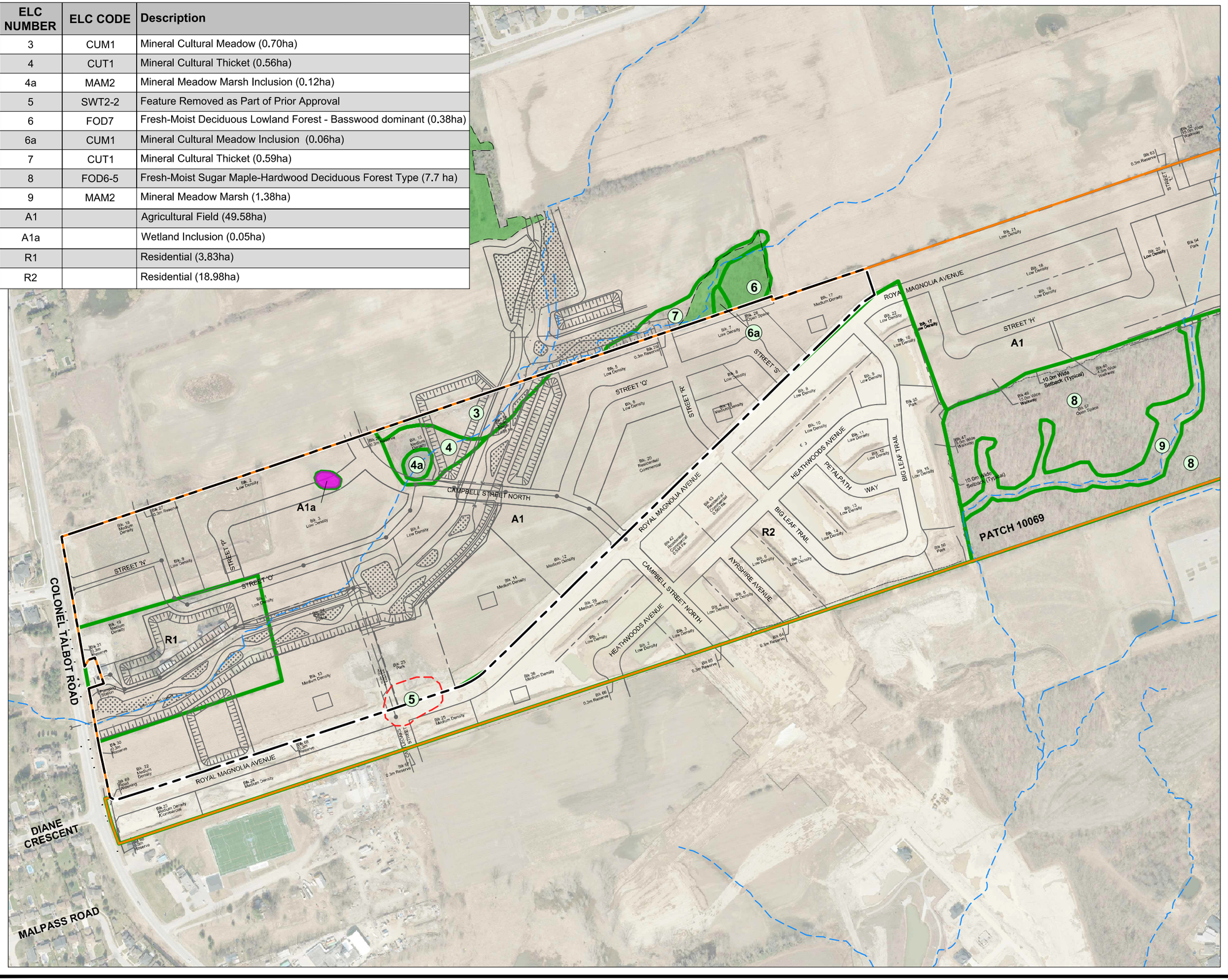

N

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

WATERCOURSE
- PERMANENT
- INTERMITTENT/EPHEMERAL

- VEGETATION COMMUNITY
- FEATURE REMOVED AS PART OF PRIOR APPROVAL (Draft Plan 1)
- TERRESTRIAL CRAYFISH SWH
- SIGNIFICANT WOODLAND

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD),
OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U',
FEBRUARY 22 - 2023;
CITY OF LONDON, MAP 5 - NATURAL HERITAGE, MAY 28 - 2021; AND
UPPER THAMES CONSERVATION AUTHORITY (UTRCA) WATER NETWORK.

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SCALE IN METRES
0 100 200m
1:5,000

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
DEVELOPMENT OVERLAY

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 45598-101
Date: Dec 12/23	Rev No.: 0

FIGURE 11

Client: W3 Farms Inc.
Plot Date: 12 December 2023 Time:12:10:51
CAD: P:\45598\101\2_PROD\45598-101-R02 ENVIRONMENTAL IMPACT STUDY\45598-101-R02011.DWG
25mm Original Format in Tabloid (279mm x 432mm; 11" x 17")
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ELC NUMBER	ELC CODE	Description
3	CUM1	Mineral Cultural Meadow (0.70ha)
4	CUT1	Mineral Cultural Thicket (0.56ha)
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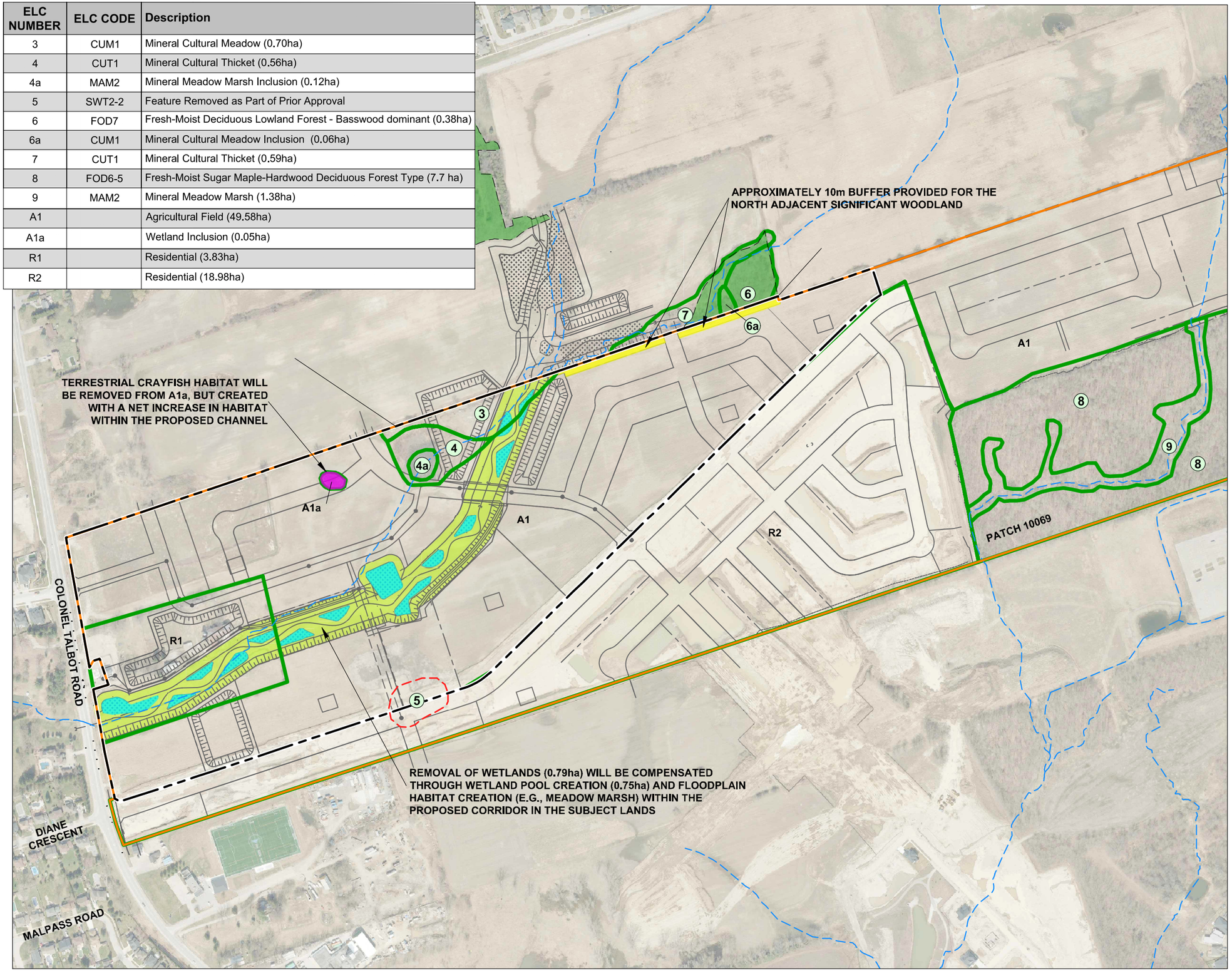

N

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

WATERCOURSE
- PERMANENT
- INTERMITTENT/EPHEMERAL

- (1) VEGETATION COMMUNITY
- FEATURE REMOVED AS PART OF PRIOR APPROVAL (Draft Plan 1)
- TERRESTRIAL CRAYFISH SWH
- SIGNIFICANT WOODLAND
- WETLAND CREATION AREA
- 10m BUFFER FROM SIGNIFICANT WOODLAND
- NATURALIZED CORRIDOR AREA

REFERENCES

CITY OF 2021 LONDON PARCEL AND AERIAL IMAGERY, CITY OF LONDON ROAD), OPEN DATA SET;
MHBC, PROPOSED DRAFT PLAN OF SUBDIVISION, FILE No. 1094 'U', FEBRUARY 22 - 2023;
CITY OF LONDON, MAP 5 - NATURAL HERITAGE, MAY 28 - 2021; AND
UPPER THAMES CONSERVATION AUTHORITY (UTRCA) WATER NETWORK.

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SCALE IN METRES
0 100 200m
1:5,000

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
3680 and 3700 COLONEL TALBOT ROAD
LONDON, ONTARIO

TITLE
MITIGATION MEASURES

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 45598-101
Date: Dec 12/23	Rev No.: 0

FIGURE 12

Client: W3 Farms Inc.
Plot Date: 12 December 2023 Time:12:11:50
CAD: P:\P\45598\101\2_PROD\45598-101-R02 ENVIRONMENTAL IMPACT STUDY\45598-101-R02012.DWG
Original Format in Tabloid (279mm x 432mm; 11" x 17")
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Appendix A

IPR Summary (August, 2021)

PROPOSAL REVIEW MEETING SUMMARY &
RECORD OF CONSULTATION

Date: August 6, 2021

Subject: Proposal Review Meeting
3680-3700 Colonel Talbot Road
Meeting Date: July 14, 2021 (Online Zoom meeting)

Meeting Participants:

R. Carnegie (Coordinator)	Planning and Development
B. Page	Planning and Development – Subdivision
M. Feldberg	Planning and Development – Subdivision
L. Mottram	Planning and Development – Planning
A. Curtis	Planning and Development – Planning
P. Kavcic	Planning and Development – Engineering
M. Almusawi	Planning and Development – Engineering
J. MacKay	Planning and Development – Ecologist
C. Smith	Parks & Recreation Services
G. LaForge	Development Finance
J. Chamorro	E.E.S. – Transportation
S. Chambers	E.E.S. – Stormwater Management
A. Sones	E.E.S. – Stormwater Management
M. Schaum	E.E.S. – Wastewater & Drainage Engineering
K. Graham	E.E.S. – Wastewater & Drainage Engineering
J. Robinson	E.E.S. – Water Engineering
W. Rotteau	Urban Design
P. Varughese	Urban Design
L. Dent	Heritage Planning
S. Pratt	Upper Thames River Conservation Authority
C. Creighton	Upper Thames River Conservation Authority

Proposed Draft Plan of Subdivision
Applicant: W3 Lambeth Farms Inc.
Authorized Agent: MHBC Planning Limited c/o Scott Allen
File Reference: File #TS2021-009
Type of Application: Proposed Draft Plan of Subdivision
Location: 3680 and 3700 Colonel Talbot Road
File Manager: Bruce Page
Planner: Larry Mottram

DEPARTMENT & AGENCY COMMENTS

The following is a summary of the comments as reported by the respective service areas/agencies in response to the proposal. It is noted that these comments do not necessarily reflect the final planning recommendation on the proposal.

DEVELOPMENT PLANNING:

Bruce Page *Manager, Planning and Development*
Larry Mottram *Senior Planner*

- The IPR was well prepared and provides a comprehensive overview of the applicable policies from the PPS, 1989 Official Plan, The London Plan, and SWAP.
- The discussion under Section 5.2 Proposed Zoning makes references to special provisions reflecting those associated with the proposed R1-3( ) Zone which may not be appropriate for all residential zones being proposed (ie. R4-6( ) and R6-5( )).
- The proponent is encouraged to meet with P&D staff prior to submitting the draft plan, OPA and ZBA application to review the proposed zones and special provisions.
- Discussion under Section 7.1 Existing Services appears to be referring to municipal services for another nearby development proposal within the SWAP (3080 Bostwick Road).

PLANNING AND DEVELOPMENT - URBAN DESIGN:

Prasanth Varughese *Urban Design Technician*

These lands are located within the Council approved North Lambeth Neighbourhoods of the South West Area Secondary Plan (SWAP) area. In accordance with the policies in SWAP, the following built form and site layout policies apply:

General comments:

- Provide for a modified grid network of streets with increased north-south connectivity, that disperses vehicle and pedestrian traffic, and allows for safe and direct routes to transit, arterial roads, and adjacent neighbourhoods [SWASP 20.5.2 i; 20.5.3.9 c & j].
    - Avoid cul-de-sacs, bulb outs and crescents in favour of through streets in order to promote way-finding and direct vehicle and pedestrian connections.
    - Consolidate 'Street 'N and 'Street P' together to form one street connecting Colonel Talbot Road and Campbell Street North.
    - Extend 'Street B' further south to meet Royal Magnolia Avenue.
    - Extend 'Street Q' further north to meet 'Street O'.
    - Provide sidewalks on both sides of the streets to allow for safe and accessible pedestrian access throughout the neighbourhood.
- Wide pedestrian mid-block connections are acceptable as an alternative to vehicular connections, providing there is a minimum 50% built edge and active uses are oriented to the mid-block connection [SWASP 20.5.3.8 f, 20.5.3.9 i]
- Explore opportunities for public streets and street-oriented mid-rise forms as opposed to condo blocks to ensure connectivity among different blocks.
- Include a window street along a minimum of 50% of the open space blocks. Ensure the lots are oriented to the open space Avoid rear-lotting along any open space and park blocks by providing window streets along those blocks [SWASP20.5.1.4 iv d & e].
- Consider more variety in the size and configuration of the lots to allow for an assortment of housing forms;
- Appropriately size any corner lots to provide enhanced facades on street-flanking elevations.
- Provide a larger and adequate park or park block in a more visible and accessible location, preferably at an intersection.
- Strategically locate street terminuses, single loaded roads, and open spaces to provide open views, access to parks and other open space areas within the development;
- Include adequately sized walkway blocks that provide access to any parks and/or open space blocks;
- Direct medium density uses adjacent to and oriented towards arterial roads as well as main collector roads with lower intensity uses located internal to the neighbourhood to provide transition.
    - Ensure more dense forms along Colonel Talbot Road, Royal Magnolia Avenue and Campbell Street North.
- In order to be in keeping with the form policies of the Neighbourhood Place Type, the maximum height of any buildings proposed on this block would be 6-storeys, with bonus;

Zoning comments:

- Ensure the proposed zoning for each block implements the policies of the Southwest Area Secondary Plan (SWASP). This may include, but is not limited to: setbacks, orientation, garage maximum widths, minimum and maximum densities, etc.;
    - Garages shall not project beyond the front face of dwelling or the façade of any porch, and not occupy more than 50% of the lot frontage [SWASP 20.5.3.9 iii, e]. Ensure the lots are large enough to accommodate this policy.
    - Ensure that the proposed building/built form is oriented to street frontages and establishes a pedestrian-oriented built edge with street oriented units.[SWASP 20.5.3.9 i a].
    - Remove any parking proposed along street frontages.
- Include either a holding provision or special provision in the zoning for all medium, high-density and mixed-use blocks to ensure orientation to the street, park, or open-space frontages.

Required for a complete application:

- Provide a conceptual site plan for each of the proposed commercial and medium density blocks. Further comments may follow upon receipt of the concepts;
    - Ensure any proposed commercial uses are oriented to their respective street frontage with any surface parking located behind the building [SWASP 20.5.3.9 iii, b].
    - Ensure that the proposed building(s) have regard for its corner location. The massing/ articulation or other architectural features should emphasize the intersection(s)[SWASP 20.5.3.9 iii c].
        - Buildings located at the corner of Royal Magnolia Line & Colonel Talbot Rd and also Campbell street north should be located and massed toward the intersection.
- Submit an urban design brief with a component that established the vision and character of the proposed subdivision, as required in Policy 198 of The London Plan.
- If any blocks are proposing zoning for buildings taller than 4-storeys, they are required to attend the Urban Design Peer Review Panel (UDPRP):
    - UDPRP meetings take place on the third Wednesday of every month. Once an Urban Design Brief is submitted as part of a complete application the application will be

scheduled for an upcoming meeting and the assigned planner as well as the applicant's agent will be notified. If you have any questions relating to the UDPRP or the Urban Design Briefs, please contact Wyatt Rotteau at 519.661.2500 x7545 or by email at wrotteau@london.ca

PLANNING AND DEVELOPMENT - HERITAGE PLANNING:

Laura Dent *Heritage Planner*

Major issues identified

- 3700 Colonel Talbot Road is a LISTED property on the City's Register of Cultural Heritage Resources and contains cultural heritage resources in the form of an existing mid-19th century farmstead. The property is also adjacent to 3800/3808 Colonel Talbot Rd, another LISTED property on the City's Register. Per Policy 565_of the London Plan:
    - "[n]ew development, redevelopment, and all civic works and projects on and adjacent to heritage designated properties and properties listed on the Register will be designed to conserve the heritage attributes and character of those resources and to minimize visual and physical impact on these resources. A heritage impact assessment will be required for new development, redevelopment, and civic works and projects on, and adjacent to, heritage designated properties and properties listed on the Register to assess potential impacts and explore alternative development approaches and mitigation measures to address any impact to the cultural heritage resource and its heritage attributes."
- The IPR indicates that a Heritage Impact Assessment (HIA) will be conducted in conjunction with this proposal to evaluate the potential heritage impacts of the proposed development on identified heritage properties within, and proximate to, the Site. (p42)
- Further note that an archaeological assessment was prepared and registered with the Ministry for the whole of 3700 Colonel Talbot Road (with the exception of an open space, Block 53) as a requirement of 39T-17503 (Bluestone Research Inc., Feb 2016, PIF P344-0065-2015). Findings from the assessment indicated that "no archaeological resources were identified during the Stage 2 archaeological assessment of the study area, and as such no further archaeological assessment of the property is recommended. (p ii)
- The IPR indicates that an archaeological assessment for the balance of the Site (3680 Colonel Talbot Road) has been carried out for the subject lands and will be submitted as part of the Draft Plan application for TS2021-009. (p43)
- Finally, note that demolition of the cultural heritage resources comprising the farmstead buildings at 3700 will require Council approval.

Heritage planning – conditions of draft plan of subdivision

- A Heritage Impact Assessment (HIA)

Notes

Heritage Impact Assessment (HIA)

- This assessment should respond to information requirements in the Ministry's InfoSheet #5.
- Conclusions and recommendations from the HIA may have impacts on the subdivision design/layout.
- A Cultural Heritage Impact Assessment of the subject properties and adjacent ones LISTED on the Register should be a component of the HIA (using 9/06 Regulation criteria).
- Heritage Impact Assessments should be prepared by heritage planner, heritage consultant and or a member of the Canadian Association of Heritage Professionals (CAHP).
- Resumes of those involved in the preparation of the HIA should be included in the appendix.

Archaeological Assessment

- The IPR indicates that an archaeological assessment for the balance of the Site (3680 Colonel Talbot Road) has been carried out for the subject lands and will be submitted as part of the Draft Plan application. (p42)

PLANNING AND DEVELOPMENT - NATURAL HERITAGE:

James MacKay *Ecologist*

- Follow-up EIS/SLSR for this portion of the lands was left out of Phase 1, this will need to be completed.
- The initial concept plan does not meet the target minimum corridor width of 60m. While some pinch points could potentially be justified, maintaining the target 60m minimum corridor width was expected.

- Multiple wetlands were identified on the subject lands across the various phases that were acknowledged required compensation within the corridor. It does not appear that the corridor has been designed to accommodate those features. While some could be located within the 60m corridor given their relatively small size, at least one larger wetland would likely require a bump out to accommodate the size of the feature and required buffers.
- A park has been proposed directly within the corridor, how would this be integrated as part of the ecological feature? How would this park functions as part of the corridor with active use? How would this area be naturalized and maintained in that state while still counting as a park? An active park should be integrated along the corridor but not within it.
- The 10m buffer provided to the Significant Woodland on the adjacent property to the north meets the minimum buffer requirement according to the EMG.

PARKS AND RECREATION:

Craig Smith *Senior Planner*

- Parkland dedication for this development is expected to be calculated at 1ha per 300 residential units. Using the submitted IPR plans the required dedication is calculated to be 4.75 Ha of tableland parkland.
- Consistent with Trib. 12 complete corridor EA and memo/x-sections previously provided to York by City, a 9.2m pathway corridor is required along the length of the corridor (Block 28, 29, 30, 31).
- The complete corridor will be acquired through SWM Development Charge processes and will not be acquired using parkland dedication (CP-9).
- The current IPR shows a 50-meter wide complete corridor. This does not reflect x-sections previously provided to York which suggested a 60-meter minimum width. PP&D note that accommodation of the hazard lands in a 50m corridor should not impact or negate from the required 9.2m pathway corridor (as per previously provided x-sections).
- The proposed park Block 27 is not sufficiently sized to accommodate neighbourhood park use. PP&D request a minimum of 1.5ha to 2ha to accommodate the park use. The balance of the required parkland will be provided as cash in lieu.
- The proposed park Block 27 is bisected by the proposed 50m open space corridor. The open space corridor consists of hazard lands and natural heritage features and would not be able to accommodate active park uses. The remaining lands on the north and south are not sufficient to accommodate the neighbourhood park uses.
- PP&D request that Block 16, with a connecting park from street “Q” to street “O”, be considered as the appropriate location of the required parkland. The City will fund construction of this neighbourhood park from existing/planned development charges. The design of this park block shall be completed through the upcoming subdivision engineering review process and as per City standards.
- The PP&D Section request that a pedestrian crossing of the 50m open space corridor be considered and planned to link the park block from street “O” to street “Q”.
- It is noted that sewer infrastructure is proposed to be located in park Block 27. All infrastructure would be required and designed that it does not negatively affect the park amenities.
- A pedestrian crossing of Campbell Street shall be planned and designed, with input from City Transportation Division, where the open space/complete corridor intersect. A pedestrian crossing of Colonel Talbot Road (linking pathways east and west) shall also be planned and designed in conjunction with any required upsizing of existing road culvert.
- The City will require fencing as per SPO 4.8 on all lots backing onto future parkland.
- Staff would appreciate meeting with the applicant prior to the submission of the Final Proposal Review to discuss comments provided.

WASTEWATER & DRAINAGE ENGINEERING:

Marcus Schaum *Senior Technologist*

- The subject lands are within the Southwest Area Sanitary Servicing Master Plan (2014) study area to be tributary to the Oxford Wastewater Treatment Plant and the Colonel Talbot Pumping station. The submission of this IPR will need to reflect the outcome of the EA, including any possible adjustments to the service area of the Colonel Talbot pumping station.
- This IPR identifies possible arrangement with lands to the north (Hudson/Sifton) that was never intended to be routed through W3 to the Colonel Talbot PS. Please show the proposed areas and population and any rationale and grades that make this a more reasonable alternative.
- The revised IPR is to also reflect and include all external land including maximum population and areas consistent with the earlier Phase 1 W3 Farms draft plan that discussed what is anticipated to be directed and redirected by gravity to Colonel Talbot PS under ultimate conditions including the redirected areas from Phase 1 and lands along Bostwick Rd. (Former IPR Figure referred to it as Areas B,C and D)

- As proposed routing of the future trunk sewer SS15B through a proposed Park is new information never previously discussed or contemplated. As it was never contemplated it would be routed through a park block SED would ask for clarification how that was settled on and in addition how this meets with the EA objectives and at minimum should describe how this would look and how it will impact MH spacing and future maintenance access. This routing also suggests will require easements through a future condominium north of Colonel Talbot PS. Additionally it should be clarified where the actual connection to the PS is being planned and located now that there is no longer a driveway and street proposed north of the PS.
- Revise section 7.1.1 as it is not associated with this area.
- The timing, availability and extension of the sanitary sewer SS15A and SS15B as outlets is presently established by the Colonel Talbot Pumping Station Environmental Assessment and more recently through the City's GMIS. The IPR did not discuss the timing, expectations and extension of SS15A – Stage 2, that is already designed by Stantec and is pending construction, in any detail. These same conditions also apply to SS15B. Prior to the FPR submission, the Applicant is to address the need to obtain easements for portions of SS15A – Stage 2 downstream of this proposed Draft Plan and how/whether the Applicant intends to construct this trunk sanitary sewer. In addition, the applicant should address whether the current GMIS timing of SS15B is appropriate given that the trunk sewers were expected to have been constructed through greenfield undeveloped lands within easements and not constructed after local sewers and roads and parks and condominiums are constructed. Scoped design studies may be recommended. In addition the Applicants engineer is to provide their cost estimates for both sections of the trunk sewer (SS15A – Phase 2 and SS15B) in order to determine whether it is feasible to be construct both sections under a single tender.

WATER ENGINEERING:

Josh Robinson *Technologist II*

- Water is available via the future low level 300mm watermain on Royal Magnolia Avenue and the future watermain within the subdivision to the north. This watermain is part of the low-level system which has a hydraulic grade line of 301.8m.
- A watermain connection to the truck 600mm watermain on Street 'N' shall be avoided to reduce the number of connections to the truck watermain on Colonel Talbot Road (connection on Royal Magnolia Avenue and future connection in the subdivision to the north). If during Detailed Design / Design Studies, Water Engineering determines it necessary to have this connection to provide the overall development area with adequate flows, then a connection to the truck watermain can be permitted.
- If it is determined a connection to the truck watermain on Colonel Talbot is required, a splitter valve will be required between the looped connections to both the north and south subdivisions.
- Water Servicing for Blocks fronting Royal Magnolia Avenue are to be included in the watermain design for the Subdivision to the South (W3). The water servicing report for W3 will need to be revised to ensure the watermain has capacity for the proposed medium density and mixed-use blocks.
- Ensure sections 7.1 of the Report addressing existing services to this project (mentions Wonderland Road area).

STORMWATER MANAGEMENT:

Adrienne Sones *Environmental Services Engineer*

General Comments/Information – Stormwater Management (SWM)

- The site is located within the Dingman Creek Subwatershed. Stormwater management works for the site are anticipated to follow the requirements of the recently completed Dingman EA Stage 1. The final Dingman Creek Subwatershed EA is available on the City's Get Involved website at https://getinvolved.london.ca/dingmancreek. The subject lands are traversed by the North Lambeth Tributary 12 (reach 2 in the Dingman Creek EA Stage 1) and therefore the Tributary 12 Complete Corridor is to be designed and constructed by the Owner.
- The Developer shall coordinate with other landowners to the north (lands traversed by Tributary 12) the design of the Tributary 12 Complete Corridor within the limits of this Draft Plan. The complete corridor within the site shall incorporate SWM controls, natural heritage features including any compensation / mitigation works, and a multiuse pathway system and shall be fully constructed as part of the first phase of development.
- Further to the point 2 above and as per the Dingman EA Stage 1, a coordinated approach to develop and design the complete corridor requirements and layout will be required by the developer, the City, and UTRCA. This complete corridor will integrate stormwater management for all lands tributary to the former North Lambeth P7 and P8, recreation, and natural heritage components along the Tributary 12 (reach 2). The Developer will prepare a block plan study that will facilitate the complete corridor design within the limits of this Draft

Plan to address stormwater management, recreation, and natural heritage needs, etc. If the block plan study is developed for a 50m wide corridor then acceptance by the City and UTRCA will be required in advance of Draft Plan approval to establish corridor system limits and features, including the location of the quantity SWM control facility P8. Alternatively, if the block plan study shows a 60m corridor, then acceptance by the City and UTRCA can be deferred to detailed design stage. For the preparation of the selected alternative (i.e., 50m or 60m corridor), please refer to the attached Implementation Guidance for Creating a New Complete Corridor in Development Lands provided by SWED on April 15, 2021 (version subject to UTRCA acceptance).

- The quantity SWM control facilities P7 and P8 are to be designed as dry pond(s). Quantity SWM control facility P8 is to be constructed by the Owner during the development of the first phase of this Draft Plan.
- The City will include as part of the Tributary 12 work west of Colonel Talbot Road a culvert crossing assessment and, if needed, a culvert replacement/upsizing that will be incorporated for construction in the 2023 Colonel Talbot Road upgrades. The Owner is to coordinate subdivision design timing with the 2023 City project to ensure consistency between the crossing and the complete corridor design.
- As per the Dingman EA, runoff volume control hierarchy is applied to a 25 mm rainfall event whereby retention via LID technologies which utilize the mechanisms of infiltration, evapotranspiration and or re-use are preferred, to achieve water balance and erosion control requirements. The runoff volume control hierarchy strategy will include the design and implementation of Dingman EA objectives and targets during each phase of development/buildout and post-construction.
- A functional Stormwater Servicing Report in support of the Block Plan Study developed in accordance with the Implementation Guidance for Creating a New Complete Corridor in Development Lands as approved by UTRCA shall be provided as part of the complete application for Draft Plan approval. Through detailed design, an updated functional Stormwater Servicing Report is to be submitted to reflect refinements made through detailed design. The functional Stormwater Servicing Report shall include, but not be limited to:
    - Detailed design of the Tributary 12 Complete Corridor following the block plan study.
    - Detailed design of the dry SWM Facility P8 following the Stormwater Management Design Specifications and Requirements Manual and Design and Construction of Storm Water Management Facilities policies and processes identified in Appendix ‘B-1’ and ‘B-2’ Stormwater Management Facility “Just in Time” Design and Construction Process adopted by Council on July 30, 2013 as part of the Development Charges Policy Review: Major Policies Covering Report.
    - How the proposed development will meet City of London water quality and quantity SWM design criteria (as per Stormwater Management Design Specifications and Requirements Manual) and the Dingman Creek Subwatershed EA for all lands tributary to both PPS and Municipal Stormwater systems. The SWM report shall include SWM design targets requirements for each block in accordance with the Dingman EA and Stormwater Management Design Specifications and Requirements Manual. It is expected that Low Impact Development measures will meet the 25mm infiltration target. Linear LIDs constructed within the municipal ROW may be eligible for the LID Subsidy.
    - Identify how interim and ultimate, major (100 & 250 year) flows (including external flows to this Draft Plan) can be contained within the municipal right-of-way throughout the subdivision and be safely conveyed to the ultimate outlet. Impacts of traffic calming, if any, shall be evaluated as part of the major flow evaluation. Additional quantity storage may be required within the limits of this Draft Plan. The City’s updated Stormwater Management Design Specifications and Requirements Manual should be followed in the development and evaluation of the major conveyance system.
    - Consideration and integration of other related supporting studies including:
        - A scoping meeting with UTRCA and City staff should be completed to determine hydrogeological, ecological, and other supporting studies or assessments as required to demonstrate mitigation and compensation and requirements of a SLSR and EIS and Environmental Management Plan (EMP). The findings of the any supporting studies should be incorporated into the SWM Report.
        - Geotechnical report.
    - Identify whether and how any environmental features and/or water balance are to be maintained or enhanced via drainage designs during development/buildout and post-construction. Conveyance of stormwater to natural features shall consider the hydrological impacts such as, but not limited to peak flows; total runoff volumes and annual water balance conditions and requirements supported by the applicable EIS and hydrogeological investigations as scoped by the City and UTRCA staff. The hydrological impacts and mitigations measures shall be clearly detailed in the Stormwater Management Report. A monitoring program may be required during and

post construction to verify water balance targets or other targets determined through the background studies.
    - Include a representative lot level runoff coefficient value including all anticipated impervious surfaces such as buildings and hardscaping to verify the proposed development meets approved “C” runoff coefficients.
    - SWM control targets and requirements for any Medium Density block where PPS stormwater controls will be subject to a future site plan application. If freehold lots are proposed within a Medium Density block, a municipal stormwater strategy shall accommodate the future freehold lots and be included in the functional Stormwater Servicing Report.
    - Once the final Draft Plan is established further evaluation will be required, likely at the detailed design stage, which may include but may not necessarily be limited to the following:
        - Details and discussion regarding LID considerations proposed for the development.
        - Discussions related to the water taking requirements to facilitate construction (i.e., PTTW or EASR be required to facilitate construction), including sediment and erosion control measure and dewatering discharge locations.
        - Evaluation of construction related impacts, and their potential effects on the shallow groundwater system.
        - Discussion regarding mitigation measures associated with construction activities specific to the development (e.g., specific construction activities related to dewatering).
        - Development of appropriate short-term and long-term monitoring plans (if applicable) to address:
            - Assumption requirements for SWM control features (as per Chapter 19).
            - Demonstration that surface and groundwater requirements and/or targets are met during construction and build out phases, as noted in an associated or supplemental report such as EIS or hydrogeological study and as per the City’s Environmental Management Guidelines (EMGs).
            - Confirmation that impacts to adjacent natural heritage feature(s) following completion of new development works is within a range of acceptable impacts.
            - Post-construction viability of the complete corridor.
        - Development of appropriate contingency plans (if applicable), in the event of groundwater interference related to construction.

TRANSPORTATION PLANNING & DESIGN:

Juan Chamorro *Transportation Technologist*

- The applicant is to have regard for and implement through this plan of subdivision Complete Streets (which includes such things as barrier curb, sidewalk on both sides, asphalt width, and ROW width). Council recently approved the Complete Streets Design Manual, the complete streets design manual contains information and design guidance for the construction of a complete street, this guide should be followed for all street design within the subdivision;
- The owner shall install curb in the subdivision to be 600.040 barrier curb as per the City of London DSRM;
- The owner shall provide a road layout and concept plan as part of Design Studies showing all centre line radii, bends, and tapers to the satisfaction of the City Engineer;
- The bump outs as shown on street bends are not acceptable, consistent pavement width shall be provided to City standards.
- Street ‘Q’ cul-de-sac shall be design as per City Standards.
- Street ‘N’ connection to Colonel Talbot shall be design as per DSRM for a gateway entrance. No accesses shall be provided off of Street ‘N’ or Royal Magnolia Ave within 60m of Colonel Talbot Rd or within the limits of auxiliary lanes.
- On-street parking shall be provided adjacent to the Park on Street ‘O’;
- The owner shall establish and maintain a Traffic Management Plan (TMP) in conformance with City guidelines and to the satisfaction of the City Engineer for any construction activity that will occur on existing arterial roadways needed to provide services for this plan of subdivision. The owner’s contractor(s) shall undertake the work within the prescribed operational constraints of the TMP. The TMP will be submitted and become a requirement of the subdivision servicing drawings process for this plan of subdivision;
- The owner shall provide sidewalk connectivity to all City Streets as per City standards;
- Sidewalks to be constructed on both sides of all streets. A 2m boulevard shall be provided in between the curb and sidewalks as per Complete
- PXO shall be provided on Campbell where the pathway is proposed.
- Right of way dedication of 24.0m from centre line required on Colonel Talbot Road;

- Ensure 6.0mx6.0m daylight triangles at all intersections;
- Provide a 1ft reserve along Colonel Talbot Road;
- Neighborhood Connectors (Collectors) shall be designed and built to Municipal standard, as per the DSRM and City of London Complete Streets Design Manual, with 23.0m wide Right-of-ways (ROW) and asphalt widths of 6.0m;
- Campbell Street shall include bike lanes as per the Cycling Master Plan and designed as per Complete Streets Design Manual;
- Neighborhood Streets (Locals) shall be designed and built to Municipal standard, as per the DSRM and City of London Complete Streets Design Manual, with 20.0m wide Right-of-ways (ROW) and asphalt widths of 7.5m;
- Traffic Calming shall be provided on Campbell Street to the satisfaction of the City Engineering and may include speed cushions with a physical barrier in between the through lanes and the cycle lanes, to the satisfaction of the City Engineer.
- Traffic Calming measures shall also include raised intersections at locations to be confirmed by Transportation as per City standards. Other traffic calming measures including speed cushion locations to be confirmed by Transportation.
- As part of a complete application provide a road layout and concept plan showing all bends tapers and centre line radii comply with City standards, ensure all through streets align opposite each other and streets intersect perpendicular to each other if minimum City standards are not met changes to the draft plan will be required. Street “N” to be perpendicular to Colonel Talbot Road;
- As part of a complete application a Transportation Impact Assessment (TIA) will be required, the TIA will evaluate the impact the development will have on the transportation infrastructure in the area and provide recommendations for any mitigation measures. The TIA should clearly state which is the proposed classification of each street (i.e. neighbourhood connector and neighbourhood street), and include improvements to Colonel Talbot to the satisfaction of the City Engineer and shall be constructed by the applicant at no cost to the City. The TIA will need to be scoped with City staff prior to undertaking and be undertaken in general conformance with the City’s TIA guidelines;
- A maximum of 80 units can be occupied with only one access to the subdivision. Phasing of works shall be considered in conjunction with adjacent developments.
- The applicant shall have regard for the Southwest Secondary Plan.
- Temporary street lighting may be required at the intersection of Colonel Talbot Road at Street “N”.

DEVELOPMENT FINANCE:

Greg LaForge *Specialist, Development Finance*

These comments are based on the 2021 DC Background Study and By-law. Development Finance has reviewed the IPR documents provided and based on this information provide the following:

Water

- There are no anticipated claims for subsidy on oversized watermains (300mm diameter or greater) which service external areas. Local, temporary or private watermains and connections are to be constructed at the Owner’s cost.

Wastewater

- The SS15B Trunk Sanitary Sewer (DC14WW0010) is currently scheduled for construction in 2025. Portions of the SS15A Trunk Sanitary Sewer (DC14WW0005) have been constructed with the balance of DC funds available for the remaining sections to be constructed pending the build out of adjacent developments. If these claimable trunk sanitary sewers are constructed by the Owner in conjunction with the subdivision servicing, the extent of DC eligibility would be subject to Work Plan approval.
- If sanitary sewers are identified through the design process that are 300mm in diameter or greater and service external areas, these would be eligible for oversizing subsidy. All local, temporary or private sanitary sewer works and connections are to be constructed at the Owner’s cost.

Stormwater Management

- The City led North Lambeth Tributary 12 Downstream Channel Reconstruction project (Southwinds Channel DC21MS0003) is currently scheduled for 2021.
- As part of the Dingman EA, the former North Lambeth P7 and P8 Stormwater Management Facilities (DC14MS0023 & DC14MS0024) have been replaced by the Tributary 12 (Southwinds Channel) complete corridor solution. This upstream Southwinds Channel complete corridor will be designed and constructed by the Owner in conjunction with the subdivision servicing and is considered DC eligible under the former North Lambeth P7 and P8 DC projects. Land required for Regional Stormwater Management Facilities is claimable in accordance with the DC By-law’s SWMF Land Policies. Natural environment mitigation or compensation works are considered an Owner cost. The extent of DC eligibility will be subject to the review and approval of a Work Plan.
- As noted in the IPR, if LIDs are accepted through the subdivision design process that improve water quality or water balance in conjunction with local stormwater servicing on City-owned lands or within a dedicated Municipal easement, these would be eligible for subsidy. LIDs constructed within a site plan are not eligible for subsidy.

- If storm sewers are identified through the design process that are 1200mm in diameter or greater and service external areas, these would be eligible for oversizing subsidy. All local, temporary or private sewers and connections will be installed at the Owner's cost.

Transportation

- The City led two lane arterial upgrade to Colonel Talbot Road from 300m south of Southdale to James (DC14RS0212) is scheduled for construction in 2023. Temporary external roadworks required in advance of this major project would be an Owner cost.
- If Owner led DC eligible Minor Road Works are identified through the subdivision design process (i.e. internal road oversizing, active transportation), these works would be subject to Work Plan approval.
- All other internal roadworks up to and including Neighbourhood Connectors, temporary external road works and connections are to be constructed at the Owner's cost.

Parks

- If Owner led DC eligible parkland infrastructure is identified through the subdivision design process, these works would be subject to Work Plan approval.

DEVELOPMENT ENGINEERING:

Peter Kavcic	*Manager, Development Engineering*
Blair Hammond	*Senior Engineering Technologist*
Mustafa Almusawi	*Senior Engineering Technologist*
Bryn Williams	*Engineering Technologist*

The following Development Services (Engineering) comments are to be included in the meeting minutes for the Proposal Review Meeting to be held on July 14, 2021 with respect to the Initial Proposal Report for the proposed Draft Plan of Subdivision by MacNaughton Hermson Britton Clarkson Planning Limited. in regards to the subject lands located on 3680 and 3700 Colonel Talbot Road.

STANDARD COMMENTS:

- All the usual standard conditions of draft plan will be imposed;
- Cost sharing for any eligible services or facilities will be based on the most financially economical solution for the claim, unless agreed to otherwise by the City; and
- External land needs are to be addressed as necessary (e.g. utility corridors, public roads, construction roads, emergency access etc.).

INITIAL PROPOSAL REPORT COMMENTS:

The following are comments on the Internal Proposal Report:
General Comments in regards to the report i.e. the report signed, identify if any existing draft plan of subdivision will need to be amended based on the proposed draft plan of subdivision, etc.

5.0 Planning

- All taper lengths will be required on drawings.

10.0 Transportation

- All Street connections must be 90 degrees.

DRAFT PLAN OF SUBDIVISION DRAWING COMMENTS:

The draft plan of subdivision drawing is to comply with all City standards with regard to the above comments and the following:

- Draft plan of subdivision is to include various existing features;
    - Topographical information (e.g. contours, elevations, vegetation areas, water courses, wells, utility corridors, and flood plain limits)
    - Legal info of this plan and adjoined lands (e.g. easements, lot and plan numbers, addresses, and adjacent streets)
    - Proposed road curvature and radii to comply with City standards
    - Pavement Widths
    - Tapers / transitions
    - Road widening's
    - Dimension all right of way's including window streets
    - Daylighting triangles where applicable
    - 0.3m reserves and road dedications as necessary
    - Lot Frontages
    - Block Areas
    - Drawing to scale
    - North arrow, etc.

REQUIREMENTS FOR A COMPLETE DRAFT PLAN OF SUBDIVISION SUBMISSION:

For a complete Draft Plan of Subdivision Application, the Owner is to provide the following:

1. The Final Proposal Report addressing all Planning and Development comments with respect to the IPR.

2. Revised proposed Draft Plan of Subdivision drawing as per Planning and Development comments.
3. Provide a Geotechnical/Hydrogeological report.

These notes highlight the Planning and Development (Engineering) comments at the Internal Proposal Review Meeting based on the circulated plan accompanying the Initial Proposal Report, and are to be used to aid in preparing the minutes. The comments themselves are preliminary in nature and do not preclude the possibility that further issues may be identified as the review proceeds. Planning and Development formal comments on the draft plan of subdivision application will be provided when the application is circulated for review under the standard File Manager review process.

EXTERNAL COMMENTING AGENCIES

Ministry of Natural Resources and Forestry (MNRF)
Karina Černiavskaja *District Planner – Aylmer District*

- The project is not located within proximity to a Provincially Significant Wetland.
    - The North Talbot Wetland Provincially Significant Wetland Complex is located within 750m of the project location.
- The project is not located within proximity to a provincially significant Area of Natural and Scientific Interest.
- There are no known locations of Significant Wildlife Habitat in proximity to the project location.

The Ministry understands that an EIS will be completed as part of this proposed development, in order to confirm potential for natural heritage concerns. Once available, the Ministry requests to be circulated the EIS for this project.

UNION GAS LTD.
Justin Cook *Senior Pipeline Engineer*
(No comments Rec'd)

LONDON TRANSIT COMMISSION (L.T.C.)
Transportation Planning Technician
(No comments Rec'd)

THAMES VALLEY DISTRICT SCHOOL BOARD
Eric Miles *Planner*

- We have reviewed the application and are requesting a school block within the Plan of Subdivision. Given the significant enrolment pressures in this area and the geographic location of this development, a school block within this Plan would help ensure that projected student yields can be accommodated in an appropriate location. Our preference is for a school block that is at least 8 acres in size.

LONDON DISTRICT CATHOLIC SCHOOL BOARD
Rebecca McLean *Planning Specialist*
(No comments Rec'd)

LONDON-MIDDLESEX HEALTH UNIT
Bernadette McCall *Public Health Nurse*
(No comments Rec'd)

UPPER THAMES RIVER CONSERVATION AUTHORITY (U.T.R.C.A.)
Christine Creighton *Land Use Planner*
Stefanie Pratt *Land Use Planner*

Comments received via email and attached below

REQUIREMENTS TO PROCEED WITH CURRENT APPLICATION

New City of London Complete Application Requirements for Planning Act Applications
All new applications submitted on or after January 22, 2018 will be required to meet the new requirements for the relevant application type. These applications must be submitted using the updated application forms dated January 2018 which will appear on the City's website in early January.

The new requirements are in addition to any technical submission requirements you are currently required to meet, and are as follows:

Draft Plan of Subdivision
A simplified draft plan of subdivision is required for the production of the on-site sign.
The graphic must be sized to the dimensions of 46”(W) x 46(H), provided in PDF and JPEG format at a DPI of 300.

The subdivision must be centred and scaled within the 46” bounding box to allow for maximum readability. The area outside of the draft plan of subdivision must be populated with Ontario Base Map data to provide context for the surrounding land. This additional contextual information should be displayed at a lighter transparency and contain information such as, but not limited to: streets, parcel fabric, building outlines, and watercourses. The images should be full bleed with no borders. The image must not be distorted or skewed in any way and is subject to cropping.

The simplified image of the proposed subdivision must include the following elements:
- Outline the extent of the subdivision boundary
- Road, lot, and block fabric and descriptions
- Proposed street name labels
- Proposed block numbers & area calculations
- Colour application to all lots and blocks per The London Plan colours (see Map I for relevant place types and colour standards)
- Light grey colour application to all street and walkway blocks
- Basic map elements: (north arrow, scale, etc.)

Official Plan and/or Zoning By-Law Amendment (applicable only where Renderings are required as part of a complete application)
Proposed Development best represented using a landscape image format Graphic renderings are required which represent the conceptual design of the proposal for the production of the on-site sign.

A minimum of 2 renderings must be provided, oriented in landscape format and sized to the dimensions of 48”(W) x 26”(H), provided in PDF and JPEG format at a DPI of 300.

These renderings should be an accurate visual representation of the proposal and highlight features of the conceptual design. The images should be full bleed with no borders. The image must not be distorted or skewed in any way and is subject to cropping.

OR
Proposed Development best represented using a portrait image format
Graphic renderings are required which represent the conceptual design of the proposal for the production of the on-site sign.

A minimum of 2 renderings must be provided, oriented in portrait format and sized to the dimensions of 14”(W) x 26”(H), provided in PDF and JPEG format at a DPI of 300.
AND

A minimum of 3 renderings must be provided, oriented in landscape format and sized to the dimensions of 34”(W) x I 3”(H), provided in PDF and JPEG format at a DPI of 300.
The landscape images are typically, but not always, of the pedestrian level of a tall building.

These renderings should be an accurate visual representation of the proposal and highlight features of the conceptual design. The images should be full bleed with no borders. The image must not be distorted or skewed in any way and is subject to cropping.

The following documentation is required for a Complete Application Submission:

- **Draft Plan of Subdivision Application:**
  - 2 copies of the City of London Subdivision Application Form.
  - 24 rolled copies of the Draft Plan, completed as required under Section 51(17) of the Planning Act (the Draft Plan must include the Approval Authority signature block)
  - A digital file of the Draft Plan tied to the City’s geographic horizontal control network (NAD 1983 UTM Zone 17N) must be submitted as well (refer to the City’s Plans Submission Standards available on-line).
  - 1 legal sized copy of the Draft Plan.
  - Associated application fees
  - Updated as per comments from various groups detailed above i.e. Transportation, Parks, Development Engineering, etc.

  Draft plan of Subdivision is to include various features listed on the Draft Plan of Subdivision Application Form

- **Official Plan and Zoning By-law Amendment Application:**
  - 2 copies of completed City of London Official Plan and Zoning By-law Amendment application form and supporting documentation
  - Hard copy and digital file of proposed zoning map
  - Associated application fees

- **Final Proposal Report (FPR):**
  - Updated to reflect the comments that have been identified in this Record of Consultation, in accordance with the requirements prescribed in the File Manager Reference Manual;
  - FPR is to include updated information on water, sanitary, stormwater, transportation and development finance components, parks and open space, natural heritage, urban design, heritage planning, and development planning and addressing all comments identified in the Record of Consultation (*Note: applicant/consultant should undertake off-line discussions with contacts prior to completing the FPR, to ensure all servicing requirements are suitably addressed*);
  - Final Proposal Report which fully addresses the polices of the Provincial Policy Statement, the Planning Act, the 1989 Official Plan, and The London Plan.

- **Reports/Studies and Plans Required:**
  - Road layout and concept plan showing all bends, tapers, 10m straight tangents between horizontal curves, and centre line radii complying with the DSRM will be required. (150m centre line radii required for Neighbourhood connectors)
  - Provide a conceptual site plan for each of the proposed commercial and medium density blocks. Further comments may follow upon receipt of the concepts
  - Submit an urban design brief with a component that established the vision and character of the proposed subdivision, as required in Policy 198 of The London Plan.
  - If any blocks are proposing zoning for buildings taller than 4-storeys, they are required to attend the Urban Design Peer Review Panel (UDPRP)
  - Heritage Impact Assessment (HIA)
  - Follow-up EIS/SLSR for this portion of the lands was left out of Phase 1, this will need to be completed (scoped with City of London and UTRCA staff)
  - Stormwater Servicing (SWM) Report
  - Block Plan Study
  - Hydrogeological Assessment Report and Water Balance Analysis (scoped with City of London and UTRCA staff)
  - Geotechnical Report (scoped with City of London and UTRCA staff)
  - Transportation Impact Assessment (TIA)
  - Detailed Cross-Section of the Complete Corridor demonstrating that all of the components have been accommodated
  - TVDSB is requesting a school block within the Plan of Subdivision

Prepared By:
Rob Carnegie *Proposal Review Meeting Coordinator*, *Development Planning*
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Reviewed By:
Larry Mottram *Senior Planner, Development Planning*
(519) 661- CITY (2489) ext. 4866 Lmottram@london.ca

Approved By:
Bruce Page *Manager, Planning and Development*
(519) 661- CITY (2489) ext. 5355 BPage@London.ca

Appendix B

Approved Scoping Checklist

APPENDIX B - Environmental Study Scoping Checklist

Application/Project Name: W3 Farms Draft Plan 2 - Sunset Creek (45598-101)

Proponent: W3 Farms Inc. **Date:** March 23, 2022

Proposed Project Works: Second phase of a proposed residential subdivision

Study Type: Subject Lands Status Report (SLSR) and Eis

Lead Consultant: Scott Allen (MHBC)

Key Contact: David Ailles (York Developments)

Subconsultants: Stantec (Darryl Hern), EXP (H. Jaggard, K. Dobbin), MTE Consultants

Technical Review Team:

☑ Ecologist Planner: James MacKay ☐ Province – Species at Risk: _____

☐ Planner for the File: Bruce Page ☐ Province - Other: _____

☑ Conservation Authority: Christine Creighton Tara Tchir Contact: _____

☑ EEPAC: Susan Hall ☐ Other: _____

☐ Project Manager, Environmental Assessment: _____

☐ First Nation(s): _____

Subject Lands and Study Area:

Location/Address and Size (ha) of Subject Lands:
3680/3700 Colonel Talbot Road, London, ON - Approximately 30 ha

Study Area Size (approximate ha): 67 ha ■ Map (attached): Figure 1

Position of Site in Subwatershed: Dingman Creek Subwatershed

Tributary Fact Sheet: _____

Is the proposed location within the vicinity of the Thames River (<120 m)? ☐ Yes ☑ No

If Yes, initiate engagement with local First Nation communities. Consultation activity to be provided at Application Review stage.

Policy:

☑ Study must demonstrate how it conforms to the Provincial Policy Statement

☑ Study must demonstrate how it conforms to *The London Plan*

Map 1 Place Types:

☑ Green Space ☐ Environmental Review

Other Place Types: Neighbourhoods

Map 4 Active Mobility Network:

☐ Pathway placement and future trail accesses shall be considered as part of this study.

Map 5 Natural Heritage System:

(Subject Lands and Study Area delineated on current aerial photographs)

☐ Provincially Significant Wetland Name: _____

☐ Wetlands ☑ Unevaluated Wetlands*

☐ Area of Natural & Scientific Interest Name: _____

☐ Environmentally Significant Area Name: _____

☐ Potential ESAs ☐ Upland Corridors

☐ Significant Woodlands ☐ Woodlands

☐ Significant Valleylands ☑ Valleylands

☐ Unevaluated Vegetation Patches ☐ Potential Naturalization Areas

Patch No. N/A

** ELC (air photo interpretation and / or previous studies) may identify potential wetlands or other potential features not captured on Map 5.*

Map 6 Hazards and Natural Resources:

☐ Maximum Hazard Line ☑ Conservation Authority Regulation Limit (and text based regulatory limit) – Project falls under *Conservation Authority Act* Section 28

Required Field Investigations:

Aquatic:

☐ Aquatic Habitat Assessment: _____

☐ Fish Community (Collection): _____

☐ Spawning Surveys: _____

☐ Benthic Invertebrate Survey: _____

☐ Mussels: _____

☐ Other: _____

Wetlands:

☑ Wetland Delineation: Confirm Unevaluated Wetland boundaries

☐ Wetland Evaluation (OWES): Full OWES not required due to small (<0.5 ha) wetlands.

☐ Other: _____

Terrestrial (Wetland, Upland and Lowland):

- ☑ Vegetation Communities (ELC): 2015, 2017, 2019 Site Visits (Lee et al., 1998)
- ☑ Botanical Inventories ☐ Winter ☑ Spring ☑ Summer ☑ Fall
- ☑ Breeding Bird Surveys (type & frequency): 2015 & 2019; Point/Area Search
- ☐ Raptor Surveys: _____ ☐ Shoreline Birds: _____
- ☐ Crepuscular Surveys: _____ ☐ Grassland Surveys: _____
- ☑ Amphibian Surveys (type & frequency): 3 2019 visits, 3 2021 visits; Call Counts
- ☐ Reptile Surveys:
  - ☐ Turtle (type & frequency): _____
  - ☐ Snake (type & frequency): _____
  - ☐ Other (type & frequency): _____
- ☐ Bat Habitat, Cavity & Acoustic Surveys: _____
- ☑ Mammal Surveys: Incidental
  - ☐ Winter Wildlife Surveys: _____
- ☑ Butterflies (Lepidoptera): Incidental
- ☐ Dragonflies / Damselflies (Odonata): _____
- ☐ Species at Risk Specific Surveys: _____
- ☐ Species of Conservation Concern Surveys: _____
- ☑ Significant Wildlife Habitat Surveys: Terrestrial Crayfish; Habitat assessments above
- ☐ Other field investigations: _____

Supporting Concurrent Studies/Investigations:

- ☑ Hydrogeological/Groundwater: EXP Hydrogeological Investigation (2017); EXP
- ☑ Surface Water/Hydrology: EXP Hydrogeological Investigation (2017); EXP
- ☑ Water Balance: EXP Hydrogeological/Water Balance (2017); EXP Draft Plan 2 Updates
- ☑ Fluvial Geomorphological: Natural Channel Design (Stantec)
- ☑ Geotechnical: EXP Hydrogeological Investigation (2017)
- ☐ Tree Inventory: _____
- ☐ Other: _____

Evaluation of Significance:

Federal:

- ☐ Fish Habitat ☐ Other Federal: _____
- ☑ Species at Risk (*SARA*) (migratory birds and fish habitat)

Provincial:

- ☐ Provincially Significant Wetlands
- ☑ Significant Woodlands
- ☑ Significant Valleylands
- ☑ Significant Wildlife Habitat Ecoregion 7E
- ☐ Areas of Natural & Scientific Interest
- ☐ Fish Habitat
- ☐ Water Resource Systems
- ☑ Species at Risk (*ESA*): _____

Municipal/London:

- ☐ Environmentally Significant Areas (ESAs), Potential ESAs
- ☑ Significant Woodlands, Woodlands
- ☑ Significant Valleylands, Valleylands
- ☑ Wetlands, Unevaluated Wetlands
- ☑ Significant Wildlife Habitat
- ☐ Unevaluated Vegetation Patches
- ☐ Other Vegetation Patches >0.5 ha
- ☐ Potential Naturalization Area
- ☐ Other: _____

Impact Assessment:

- ☑ Impact Assessment Required
- ☑ Net Effects Table Required

Environmental Management Recommendations:

- ☑ Environmental Management Plan: Follow guidance by the EMGs
- ☐ Specifications & Conditions of Approval: _____
- ☐ Other: _____

Environmental Monitoring:

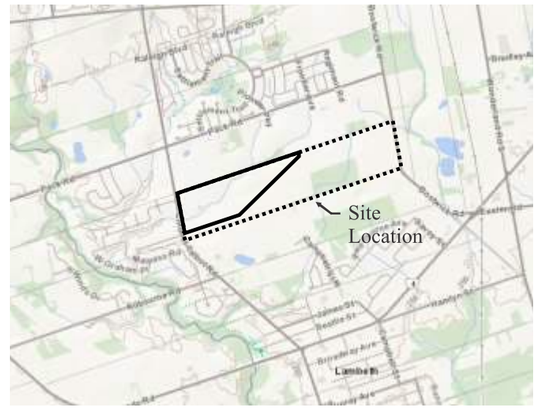
- ☐ Baseline Monitoring: _____
- ☑ Construction Monitoring: _____
- ☑ Post-Construction Monitoring: _____

Additional Requirements and Notes:

- EIS to show and demonstrate conformity with the Provincial Policy Statement (2020), London Plan (2021) policies, and London Environmental Management Guidelines (2007).
- UTRCA would like to see a discussion of net environmental benefit in the SLSR/EIS.
- UTRCA Comment: Provide a map in ArcGIS/AutoCAD showing survey sites, development limits, and natural features.
- UTRCA Comment: Provide SOFIA floristics for vegetation communities.
- Looking for all wetlands to be compensated in the natural channel corridor.
- Check wetland boundaries and size (especially Community 4) to make sure enough compensation is provided in the corridor (note previous disturbance/veg removal in 4 between 2015 and 2016).

Figure 1: Site Location

(City of London 2020 Air Photo)



0 1,000

Scale 1:50,000

Key Plan

Legend

- Subject Lands
- Legal Parcel
- 120 m Study Area

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

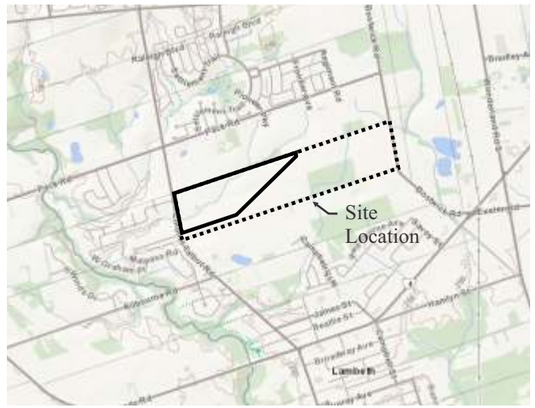
0 400

Scale 1:20,000

October 2021

MTE Project#: 45598-101

Figure 1: Site Location
(City of London 2020 Air Photo)



0 1,000
Scale 1:50,000
Key Plan

Legend

- Subject Lands
- Legal Parcel
- 120 m Study Area

* Locations are approximate and should be verified by survey where necessary.
Print on 11X17, Landscape Orientation
0 400
Scale 1:20,000
October 2021 MTE Project#: 45598-101

Appendix C

Species at Risk Assessment

Records Review - Threatened or Endangered Species

Common Name	Scientific Name	SARO	Source	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
Plants						
American Chestnut	*Castanea dentata*	END	NHIC, 2022; iNaturalist, 2022	Typically, habitat is upland deciduous forests on moist to well drained, sandy acidic soils. Occasionally occurs on heavy soils. This species is typically found alongside Red Oak, Black Cherry, Sugar Maple, American Beech, and other deciduous species. Range: Restricted primarily to southwestern Ontario between Lakes Erie and Huron.	Absent	No upland deciduous forests are present in the Study Area. No American Chestnut trees were observed within or adjacent to the Subject Lands during plant inventories.
Butternut	*Juglans cinerea*	END	NHIC, 2022	Usually found alone or in small groups in deciduous forests with moist, well-drained soils. Often occurs along streams. Butternut require sunny conditions and therefore are often found in canopy openings or near forest edges. Range: Found throughout the southwest, north to the Bruce Peninsula, and south of the Canadian Shield.	Absent	The edge of the adjacent FOD7 community may be suitable as this is a deciduous forest with relatively moist soils and proximity to a stream. However, Butternut were not identified within or adjacent to the Subject Lands during plant inventories.
Eastern Flowering Dogwood	*Cornus florida*	END	NHIC, 2022	Understory tree or on edges of mid-age to mature deciduous or mixed forests, floodplains, slopes, bluffs, ravines, and sometimes along roadsides or fencerows. Often found clustered in the drier areas of its habitat. Range: Only found in the Carolinian Zone of southern Ontario – specifically in Oakville, along the Niagara Escarpment through Halton to Hamilton, Niagara Region, and plentiful in Norfolk County.	Absent	There are no slopes, bluffs, or ravines within the Subject Lands for this species, although the adjacent FOD7 community may be suitable and it does occasionally grow along roadsides and fencerows. No Eastern Flowering Dogwood were observed within or adjacent to the Subject Lands during plant inventories.
False Hop Sedge	*Carex lupuliformis*	END	NHIC, 2022	Found in Carolinian Forest zones in riverine swamps and marshes, and around temporary forest ponds with lots of sunlight.	Absent	The Subject Lands include a small seasonally-wet Mineral Meadow Marsh that is unlikely to be

Common Name	Scientific Name	SARO	Source	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
				Range: One of the rarest sedges; occurs only in five locations in Ontario (London, Amherstburg, Elgin County (two sites), and Mount Brydges.		suitable for this species. No individuals were observed within or adjacent to the Subject Lands during plant inventories.
Birds						
Bank Swallow	*Riparia riparia*	THR	eBird, 2022; OBBA, 2005	Nest in burrows in natural and artificial settings where there are vertical faces in silt and sand deposits. Many found along rivers and lakes, but also in active sand and gravel pits. Range: Found across southern Ontario, sparse in northern Ontario. Largest populations found along Lake Erie and Lake Ontario shorelines, and along the Saugeen River.	Absent	There are no vertical banks of silt or sand deposits within or adjacent to the Subject Lands to provide nesting opportunities for this species, and no individuals of this species were observed during breeding bird surveys.
Bobolink	*Dolichonyx oryzivorus*	THR	NHIC, 2022; OBBA, 2005	Found in large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields, marshes. Grasslands size requirements have been reported to range from 5 ha to 50 ha depending on the study (MNR, n.d.). Range: Widely distributed throughout most of the province south of the boreal forest. May be found in the north where suitable habitat exists.	Absent	No tall grass meadows are present within or adjacent to the Subject Lands to provide nesting opportunities for grassland birds. No Bobolink were observed during breeding bird surveys.
Chimney Swift	*Chaetura pelagica*	THR	OBBA, 2005	Commonly found in urban and rural areas near buildings. Nest in hollow trees, crevices of rock cliffs, and chimneys. Range: Estimated 7500 breeding individuals in Ontario; most widely distributed in the Carolinian south and southwest.	Absent	There are no suitable chimney structures or buildings within or adjacent to the Subject Lands to provide this species with roosting opportunities. No individuals were observed during breeding bird surveys.
Eastern Meadowlark	*Sturnella magna*	THR	NHIC, 2022;	Breeds mostly in moderately tall grasslands (native prairies and savannahs), also non-native pastures,	Absent	No tall grass meadows are present within or adjacent to the Subject Lands to

Common Name	Scientific Name	SARO	Source	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
			OBBA, 2005	hayfields, herbaceous fencerows, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Range: Primarily found south of the Canadian Shield, but also inhabits Lake Nipissing, Timiskaming, and Lake of Woods areas.		provide nesting opportunities for grassland birds. No individuals were observed during breeding bird surveys.
Prothonotary Warbler	*Protonotaria citrea*	END	eBird, 2022; iNaturalist, 2022	Breeds only in deciduous swamp forests or riparian floodplain forests dominated by silver maple, ash, and yellow birch. Nest in naturally formed tree cavities or cavities excavated by other species. Also use properly placed artificial nest boxes. Range: Only known to nest in southwestern Ontario, primarily along the north shore of Lake Erie. Overs half of the population is found in Rondeau Provincial Park.	Absent	No dead or dying trees with small, shallow holes in flooded woodlands or swamps were found within or adjacent to the Subject Lands. No individuals were identified within or adjacent to the Subject Lands during site investigations.
Aquatic						
Wavy-rayed Lampmussel	*Lampsilis fasciola*	THR	iNaturalist, 2022	Inhabits clear rivers and streams of various sizes, where flow is steady and substrate is stable. Typically found in gravel or sand substrates, stabilized with cobble or bolders, in/near riffle areas up to 1m depth. Range: Only in Ontario in the Grand, Upper Thames, Maitland, Ausable, and St. Clair rivers, and the Lake St. Clair delta.	Absent	There are no suitable aquatic features within or adjacent to the Subject Lands for Wavy-rayed Lampmussel.
Silver Shiner	*Notropis photogenis*	THR	DFO, 2022	Prefers moderate to large size streams with swift currents, free of weeds, clean gravel or boulder bottoms. Stream widths: 30-100m. Range: Southern Ontario; Grand and Thames River watersheds, Bronte Creek, and drainages of Great Lakes Erie, St. Clair, and Ontario.	Absent	This record is associated with Dingman Creek downstream. The flowpath and pond within the Subject Lands are not suitable habitat for Silver Shiner.
Reptiles						
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	iNaturalist, 2022; Ontario	Prefer habitats with sandy, well-drained soil and open vegetative cover such as woods, brushland, fields, forests,	Absent	No suitable foraging, nesting, or other habitat is present within the Subject

Common Name	Scientific Name	SARO	Source	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
			Nature, 2019	edges, and disturbed sites; often near water. Range: Found in the Carolinian Region and the Great Lakes-St. Lawrence Region.		Lands. Even movement habitat is unlikely as the area is mostly open agriculture with isolated vegetation patches.
Spiny Softshell	*Apalone spinifera*	END	iNaturalist, 2022	Highly aquatic, rarely traveling far from water. Primarily in rivers and lakes but also creeks, ditches, and ponds near rivers. Require open sand or gravel nesting areas, shallow muddy or sandy areas to bury in, deep pools for hibernation, areas for basking, and food availability. Range: Lake St. Clair, Lake Erie, western Lake Ontario watersheds. Majority in the Thames and Sydenham rivers and two sites in Lake Erie.	Absent	There are no permanent water bodies in the Subject Lands to provide habitat for this highly aquatic species other than a dug isolated farm pond. The Mineral Meadow Marsh is densely vegetated and is only seasonally wet. iNaturalist records appear to be associated with water bodies in the surrounding ~2 km (exact locations obscured).
Mammals						
American Badger	*Taxidea taxus*	END	NHIC, 2022	Variety of habitats including tall grass prairies, sand barrens, open grassland, and farmland. Range: Southwestern Ontario, close to Lake Erie in the Norfolk and Middlesex area. Northwestern population in Thunder Bay and Rainy River Districts.	Absent	No potential burrows were observed and the area is heavily impacted by human activities.
Eastern Small-footed Myotis	*Myotis leibii*	END	Under-represented species	Roosts in caves, mine shafts, crevices, or buildings in or near a woodland. Hibernates in cold dry caves or mines.	Absent	No suitable habitat features for this species are present in or adjacent to the Subject Lands.
Little Brown Myotis	*Myotis lucifugus*	END	Under-represented species	Little Brown Myotis roosts in caves, quarries, tunnels, hollow trees, or buildings. Little Brown Myotis typically prefer buildings or building-associated features for maternity roosting rather than natural features (Gerson, 1984; Humphrey & Fotherby, 2019). This species hibernates in humid caves and forages in wetlands and forest edges.	Low	Two Candidate Bat Maternity Roost Trees (trees with loose/curling bark, cavities, etc.) were identified in the Subject Lands, but they are outside any forest habitat. The FOD7 community in the adjacent lands was not

Common Name	Scientific Name	SARO	Source	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
						investigated for habitat for this species.
Northern Myotis	*Myotis septentrionalis*	END	Under-represented species	Roosts in houses, manmade structures, but prefers hollow trees or under loose bark. Hunts in forests. Range: Throughout forested areas in southern Ontario.	Low	Two Candidate Bat Maternity Roost Trees (trees with loose/curling bark, cavities, etc.) were identified in the Subject Lands, but they are outside any forest habitat. The FOD7 community in the adjacent lands was not investigated for habitat for this species.
Tri-colored Bat	*Perimyotis subflavus*	END	Under-represented species	Roosts in older forests and occasionally barns/structures. Hibernate in damp, draft-free caves. Hunt over water and along streams in a forest.	Low	Two Candidate Bat Maternity Roost Trees (trees with loose/curling bark, cavities, etc.) were identified in the Subject Lands, but they are outside any forest habitat. The FOD7 community in the adjacent lands was not investigated for habitat for this species.

[2]Ministry of the Environment, Conservation and Parks. (2018, July 12). *Species at risk in Ontario.* Government of Ontario. Retrieved from Species at risk in Ontario | ontario.ca.

Ministry of Mines, Ministry of Northern Development, and Ministry of Natural Resources and Forestry. (Updated: 2020, August 20). *Appendix G: Wildlife habitat matrices and habitat descriptions for rare vascular plants.* Government of Ontario. Retrieved from 1 Significant wildlife habitat technical guide: Appendix G: Wildlife habitat matrices and habitat descriptions for rare vascular plants | Ontario.ca

Environment and Climate Change Canada. (Updated: 2021, February 2). *Species at risk pubic registry.* Government of Canada. Retrieved from Species at risk public registry - Canada.ca

Ministry of Natural Resources (MNR). n.d. General Habitat Description for the Bobolink (Dolichonyx oryzivorus). Retrieved from https://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_ghd_bblnk_en.pdf

Gerson, H. 1984. Habitat Management Guidelines for Bats of Ontario. Ontario Ministry of Natural Resources. 42 pp.

Humphrey, C. and Fotherby, H. 2019. Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. vii + 35 pp. + Appendix. Adoption of the Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tricolored Bat (*Perimyotis subflavus*) in Canada (Environment and Climate Change Canada 2018).

Records Review - Special Concern and Rare Species

Common Name	Scientific Name	Rank	Source[1]	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
Plants						
Bristly Buttercup	*Ranunculus hispidus*	S3	iNaturalist, 2022	Found in wet areas of forests and thickets along streams, ponds, and lakes. Also may grow in ravines and in deciduous or cedar swamps (Reznicek, Voss, & Walters, 2011).	Absent	Potential habitat in the adjacent FOD7 and along the ephemeral stream through the adjacent CUT1, but not within the Subject Lands. However, this species was not identified during plant inventories.
Green Dragon	*Arisaema dracontium*	SC	NHIC, 2022	Grows in moderate to wet deciduous forests along streams, associated highly with maple forests and forests dominated by Red Ash and White Elm. Range: Great Lakes Region; specifically, southwestern Ontario.	Absent	No potential habitat in the Subject Lands. Potential habitat in the adjacent FOD7 and along the ephemeral stream through the adjacent CUT1. However, this species was not identified within or adjacent to the Subject Lands during plant inventories.
Scarlet Beebalm	*Monarda didyma*	S3	iNaturalist, 2022	Typically grows in rich forests on banks and floodplains, as well as in moist thickets and ditches (Reznicek, Voss, & Walters, 2011). This species is also planted as an ornamental plant.	Absent	Only ephemeral flowpaths are present within and adjacent to the Subject Lands, so no suitable wet/moist habitat is likely present. No individuals of this species were observed during plant inventories.
Birds						
Bald Eagle	*Haliaeetus leucocephalus*	SC	eBird, 2022	Nest in a variety of habitats and forests in close proximity to a major lake or river. Range: Higher density of nesting in northwest Ontario, with successful reintroductions in southern Ontario.	Absent	No large wetlands, lakes, or rivers present within or adjacent to the Subject Lands for nesting or foraging. No large, forested areas are present either.

Common Name	Scientific Name	Rank	Source[1]	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
Barn Swallow	*Hirundo rustica*	SC	eBird, 2022; OBBA, 2005	Barn Swallow are typically found nesting in close association with human rural settlements, such as in old sheds, barns, and under bridges or culverts. This species forages for aerial insects in open habitats including grassy fields, pastures, agricultural fields and farms, lake and river shorelines, wetlands, and clearings.	Previously present, now absent	On July 7, 2019 Barn Swallows [THR] were observed nesting in the barn (33 nests counted) and approximately 20 were seen foraging in the surrounding area. This barn burned down in spring of 2021 and nesting habitat is no longer present.
Common Nighthawk	*Chordeiles minor*	SC	OBBA, 2005	Lives in open areas with little to no ground vegetation. Tend to occupy natural sites. Range: All over the province, except James and Hudson Bay regions.	Absent	The Subject Lands and adjacent lands are generally heavily impacted and do not include potential nesting habitat for this species.
Eastern Wood-Pewee	*Contopus virens*	SC	OBBA, 2005; eBird, 2022	Lives in mid-canopy layer of forest clearings and the edges of deciduous and mixed forests. Abundant in middle-aged forests with little understory. Range: Found across most of southern and central Ontario.	Absent	No forest habitat is present in the Subject Lands. This species is a habitat generalist and the adjacent lands do include a small FOD7 community, however breeding bird surveys confirmed this species is not present.
Wood Thrush	*Hylocichla mustelina*	SC	OBBA, 2005	Lives in mature deciduous and mixed forests, seeking moist stands with well-developed undergrowth. Prefer large forests, but will use smaller. Range: Across southern Ontario, less common up north to Lake Superior.	Absent	No forest habitat is present in the Subject Lands. The adjacent lands include FOD7 community, however it is small and breeding bird surveys confirmed this species is not present.
Reptiles						
Northern Map Turtle	*Graptemys geographica*	SC	iNaturalist, 2022; Ontario Nature, 2019	Lives in rivers and lakeshores. Basks on emergent rocks and fallen trees, and hibernates in deeps, slow-moving sections of the river. Range: Great Lakes region and west. Primarily on shores of Georgian Bay, Lake St. Clair, Lake Erie, and Lake Ontario. River include the Thames, Grand, and Ottawa.	Absent	No suitable river or lakeshore habitat is present within the Subject Lands. Only an isolated dug farm pond is present. No targeted surveys have been completed for turtles.
Snapping Turtle	*Chelydra serpentina*	SC	NHIC, 2022; iNaturalist,	Spend most of their time in water, preferring shallow waters to hide in soft mud and leaf litter. Nest in	Moderate	No suitable aquatic habitat is present within or adjacent to the Subject Lands for overwintering or

Common Name	Scientific Name	Rank	Source[1]	Habitat Requirements[2]	Potential in the Subject Lands	Rationale
			2022; Ontario Nature, 2019	gravelly or sandy areas along streams, taking advantage of man-made structures for nesting sites, including roads, dams, and aggregate pits. Range: Limited to southern part of Ontario.		nesting of Snapping Turtles. The farm pond may be suitable for foraging, but no targeted surveys have been completed.
Insects						
Monarch	*Danaus plexippus*	SC	iNaturalist, 2022	Caterpillars confined to areas with milkweed. Adults use diverse habitats with a variety of wildflowers. Range: Most abundant in southern Ontario. During migration, thousands can be seen along the north shores of Lakes Ontario and Erie.	Moderate	Some Milkweed is present in the Subject Lands in Community 4a (CUT1) and in the north adjacent lands in a CUT1 community. None of these communities contain meadow habitat with abundant wildflower forage, but Monarchs may pass through.

Appendix D

Ecological Land Classification (ELC) Data

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: York - W3		POLYGON: 3	
SURVEYOR(S): WH	DATE: July 29, 2015	TIME: start	9:00
		finish	12:45
UTMZ: 17	UTME: 474972	UTMN: 4752362	

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER	5-7	4	GRASSES ≥ SOLCAN > DAUCARO

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

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

STAND COMPOSITION:	BA:

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

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

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	CULTURAL MEADOW	CUM
ECOSITE:	MINERAL CULTURAL MEADOW	CUM
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
STAND CHARACTERISTICS

SITE:
POLYGON:
DATE:
SURVEYOR(S):

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

ELC

SOILS ONTARIO

SITE:

POLYGON:

DATE:

SURVEYOR(S):

Slope UTM

	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC

PLANT SPECIES LIST

SITE: York W3

POLYGON: 3

DATE: March 19, July 29 2015

SURVEYOR(S): WH

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

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

SPECIES CODE	LAYER 1	2	3	4	COL.
PIPdelt					
ACEsasa					
ACSpens					
SAL frag					
CRAmoll					

SPECIES CODE	LAYER 1	2	3	4	COL.
TRAprat					
SONarve					
SOLnemo					
BROiner					
ASTeric					
POLamph					
ARCminu					
APOcann					
PHYamer					
MIMmexi					
ASTnova					
HESmatr					
SOLcana					
ASTlanc					
ELErepe					
ASTpilo					
DAUcaro					
ECHcrus					
VERhast					
OENbien					
CICinty					
MELalba					
EQUarve					
BARvulg					
RANacri					
ALLpeti					
ASTnova					
SOLcana					
DAUcaro					
PINarun					
DACglom					

EL	SITE:				
	POLYGON:				
MANAGEMENT / DISTURBANCE	DATE:				
	SURVEYOR(S):				
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC	SITE:	
	POLYGON:	
WILDLIFE	DATE:	See BREEDING BIRD LIST
	SURVEYOR(S):	
	START TIME:	END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
- SH = SUITABLE HABITAT
- SM = SINGING MALE

BREEDING BIRD - PROBABLE:
- T = TERRITORY
- D = DISPLAY
- P = PAIR
- A = ANXIETY BEHAVIOUR
- N = NEST BUILDING
- V = VISITING NEST

BREEDING BIRD - CONFIRMED:
- DD = DISTRACTION
- NU = USED NEST
- FY = FLEDGED YOUNG
- NE = EGGS
- NY = YOUNG
- FS = FOOD/FAECAL SACK
- AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
- OB = OBSERVED
- VO = VOCALIZATION
- CA = CARCASS
- DP = DISTINCTIVE PARTS
- HO = HOUSE/DEN
- FY = EGGS OR YOUNG
- TK = TRACKS
- FE = FEEDING EVIDENCE
- SC = SCAT
- SI = OTHER SIGNS (specify)

ELC PLANT SPECIES LIST

SITE: W3 45598-100
POLYGON: 5
DATE: May 7 2019, July 7, Aug 19
SURVEYOR(S): WH

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

SPECIES CODE	LAYER 1	2	3	4	COL.
SALint	D				
SALIalb					
SALIfra					
EPIL					not colo.
SAGLlat					
RANU pens					
GEUMale					
VERBhas					
RUMEcri					
TYPH					
ALISpla					
RANU					✓
VITIrip					
SAMBcan			R/		
RUBUida			O		
RIBEspp			O		
ACERneg		R			

SPECIES CODE	LAYER 1	2	3	4	COL.
CAREret					
BOEMcyl					
LEERoryz					
GLYCstr					
CAREsti					
CAREcris					
LYTHsal					
CAREbeb					
ACOPrho					
SCIRval (SCHStab)					
AGROsca					
VERBurt					
ASCLsyr					
DAUCcar					
ECHIlob					
SOLAdul					
BROMine					
ELYMrep					
CIRSarv					
SOLIcan					
PERSspp				O	
URTIdio				O	
IMPAcap				O	
BOEMcyl				O	
EQUIarve				O	
ALLIpet				A	on banks
CAREspp				O	
NASToff				O	
SYMPlce				O	
TYPHsp.				A	
PHALarun				A	

ELC PLANT SPECIES LIST

SITE: W3
POLYGON: 5
DATE:
SURVEYOR(S):

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

BIG NORTH

SPECIES CODE	LAYER 1	2	3	4	COL.
SALIexi					
SALIfra					
ACERneg				R	
RORIpal					
SOLInem					
ECHIlorn					
RANUabo					
CEPHocc			R		
VITIrip				R	
CAREsco					
CIRCarv					
CAREcri					
CONVarv					
URTIdio					
LYCOame					
XANTstr					
BIDEfro					
ELYMrep					
PERSamp					
BROMine					
PHALaru					
URTIdio					
BROMine					
ARCTmin					
APOCcan					

LITTLE NORTH

SPECIES CODE	LAYER 1	2	3	4	COL.
SALIalb					
SALIbeb					
SALIamy					
LOBEsp					
SAMBcan					
SALIdisc					
SALIint					
CORNspp					
VITIrip					
BIDEcer					
APOCcan					
ECHIlob					
BER					
~~PERSamp~~					
BROMine					
APOCcan					
TARAoff					
ALLIpet					
GALIapa					
RIBEspp					
RUBUida					
EQUIarv					
PHALaru					

Appendix E

Significant Wildlife Habitat Assessment

ELCs: CUM1, CUT1, MAM2, wetland inclusion A1a, FOD7 (adjacent), CUT1 (adjacent), CUM1 (adjacent)

Seasonal Concentration of Animals

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Waterfowl Stopover and Staging Areas (Terrestrial)	CUM1, CUT1	- Some standing water is present in the agricultural field in the spring, but it is too small to support a concentration of 100 or more waterfowl.	No	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius, dependent on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates).	No
Waterfowl Stopover and Staging Areas (Aquatic)	-	- No watercourses present within the Subject Lands.	No	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in >700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is SWH • Wetland area and shorelines associated with sites identified within the SWHTG are significant wildlife habitat. • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Shorebird Migratory Stopover Area	MAM2	- No beach areas, bars, seasonally flooded, muddy and un-vegetated shoreline habitat available within the Subject Lands. Community 4a is highly vegetated.	No	Studies confirming: • Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period). • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years, or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No
Raptor Wintering Area	CUM1, CUT1, FOD7 (adjacent)	- No forest present within the Subject Lands and combination of forest and fields adjacent lands area is not large enough (need to be >20 ha).	No	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No
Bat Hibernacula	-	- No caves, mine shafts, underground foundations, or other potential bat hibernacula.	No	• All sites with confirmed hibernating bats are SWH. • The area includes 200m radius around the entrance of the hibernaculum for most development types and 1000m for wind farms • Studies are to be conducted during the peak swarming period (Aug–Sept). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Bat Maternity Colonies	FOD7 (adjacent)	- No suitable ecosites within the Subject Lands. - No candidate maternity roost survey conducted in adjacent lands. Candidate roost trees may be present in the FOD7 community in north adjacent lands.	Yes – Adjacent FOD7	Maternity Colonies with confirmed use by; • >10 Big Brown Bats • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"	No – Subject Lands Unconfirmed – Adjacent FOD7
Turtle Wintering Areas	MAM2	- Community 4a and wetland inclusion A1a do not have permanent standing water and are not deep. - The farm pond is manmade and therefore does not qualify as SWH.	No	Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC Ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deepwater pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept-Oct) or spring (Mar-May). • Congregation of turtles is more common where wintering areas are limited and therefore significant.	No
Reptile Hibernaculum	All other than really wet	- No features indicative of hibernation sites (bedrock fissures, rock piles, burrows) present within the Subject Lands. - Subject Lands are largely agricultural with small, isolated vegetation patches that are occasionally wet.	No	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. Near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). • Note: If there are Special Concern Species present, then site is SWH. • The feature in which the hibernacula is located plus a 30 m radius area is SWH.	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Colonially-Nesting Bird Breeding Habitat (Bank/Cliff)	CUM1, CUT1	- A barn was present within the Subject Lands, but man-made buildings do not qualify as SWH. - No eroded soil banks, cliffs, sand piles, or steep slopes present	No	Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No
Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs)	-	- No suitable wetland habitat is present. - No heron nesting sites/colonies present based on LIO mapping (wildlife values area map).	No	Studies confirming: • Presence of 2 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April-August) or by evidence such as the presence of fresh guano, dead young and/or eggshells.	No
Colonially-Nesting Bird Breeding Habitat (Ground)	CUM1, CUT1	- No islands, peninsulas, or low bushes close to streams/ditches are present. - No nesting sites for Ring-billed Gull or Herring Gull identified in the area by LIO wildlife values area mapping.	No	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer’s Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Migratory Butterfly Stopover Areas	CUM1, CUT1	- A butterfly stopover area will be >10 ha in size with a combination of forest (FOD) and field (CUM/CUT) and be located within 5 km of Lake Erie or Lake Ontario. - Criteria not met due to the lack of forested ELC codes in the Study Area.	No	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.	No
Land Bird Migratory Stopover Areas	-	- No woodlots >5 ha in size that are within 5 km of Lake Ontario and Lake Erie. Criteria not met.	No	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp. with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Mar to May) and fall (Aug-Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"	No
Deer Winter Congregation Areas	-	- No woodlots >100 ha in size. - No White-tailed Deer wintering areas identified in the area by LIO wildlife values area mapping.	No	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. • Use of the woodlot by white tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey.	No

Rare Vegetation Communities

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Cliffs and Talus Slopes	-	Not present.	No	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes.	No
Sand Barren	-	Not present.	No	• Confirm any ELC Vegetation Type for Sand Barrens. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.).	No
Alvar	-	Not present.	No	• Field studies that identify 4 of the 5 Alvar Indicator Species at a Candidate Alvar site is significant. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.	No
Old Growth Forest	FOD7 (adjacent)	Not present.	No	Field Studies will determine: • If dominant trees species are >140 years old, then the area containing these trees is SWH. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics.	No
Savannah	-	Not present.	No	• Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.).	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Tallgrass Prairie	-	Not present.	No	• Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic/introduced species (<50% vegetative cover exotic sp.).	No
Other Rare Vegetation	-	Not present.	No	•Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH.	No

Specialized Habitats of Wildlife considered SWH

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Waterfowl Nesting Area	MAM2	- Community 4a may provide waterfowl nesting habitat in the early spring, but it is less than 0.5 ha in size. Upland areas surrounding this community are also not 120 m wide.	No	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April-June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.	No
Bald Eagle and Osprey Nesting, Foraging, Perching	FOD7 (adjacent)	- No forest communities within the Subject Lands and no stick nests observed. FOD7 is small and not along a watercourse (only an ephemeral flowpath). - No Osprey feeding or resting areas identified in the Study Area on LIO wildlife values mapping.	No	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant.	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
				• Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid-August. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	
Woodland Raptor Nesting Habitat	FOD7 (adjacent)	- No natural or conifer plantation woodlands/forest stands >30 ha with >4 ha of interior habitat. Criteria not met.	No	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.	No
Turtle Nesting Areas	-	- No exposed mineral soil adjacent to suitable wetlands	No	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles. • One or more Northern Map Turtle or Snapping Turtle nesting is SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.	No

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Springs and Seeps	-	- No springs or seeps observed. No groundwater indicator plants present.	No	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation of the habitat.	No
Amphibian Breeding Habitat (Woodland)	-	- No wetlands within 120 m of a woodland.	No	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Code 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat	No
Amphibian Breeding Habitat (Wetlands)	MAM2, wetland inclusion A1a	- Community 4a and inclusion A1a are wetlands <500 m^2 that are >120 m from woodland ecosites.	Yes - Community 4a, Inclusion A1a	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3 or; Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.	No - Results from call count surveys in 2019 did not meet significance criteria

Wildlife Habitat	ELC Codes Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Woodland Area-Sensitive Bird Breeding Habitat	-	- No large mature (>60yrs old) forest stands or woodlots >30 ha are present within or adjacent to the Subject Lands.	No	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No

Habitats of Species of Conservation Concern considered SWH

Wildlife Habitat	ELC Codes Triggers	Candidate Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Marsh Breeding Bird Habitat	MAM2, wetland inclusion A1a, CUM1	- Community 4a and inclusion A1a have shallow water in the spring and emergent vegetation, but these are of insufficient size to support breeding pairs of target species.	No	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No
Open Country Bird Breeding Habitat	CUM1	- No natural or cultural fields >30 ha present.	No	Field studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	No
Shrub/Early Successional Bird Breeding Habitat	CUT1	- No large fields succeeding to shrub and thicket habitats >10 ha in size present.	No	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered SWH. • The area of the SWH is the contiguous ELC Ecosite field/thicket area. • Conduct field investigations of the most likely	No

Wildlife Habitat	ELC Codes Triggers	Candidate Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
				areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	
Terrestrial Crayfish	MAM2, inclusion A1a	- Potential habitat around the wetland inclusion A1a and the MAM2 wetland.	Yes – Wetland inclusion A1a	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. • Area of ELC ecosite or an eco-element area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult.	Yes – Wetland inclusion A1a (30+ chimneys were observed in the A1a wetland inclusion and Terrestrial Crayfish were relocated here)
Special Concern and Rare Wildlife Species (NHIC and MNRF pre-consultation)	-	- NHIC identified several Special Concern or rare species within the general area of the Subject Lands including Bald Eagle [SC], Barn Swallow [SC], Bristly Buttercup [S3], Common Nighthawk [SC], Green Dragon [SC], Eastern Wood-pewee [SC], Monarch [SC], Northern Map Turtle [SC], Scarlet Beebalm [S3], Snapping Turtle [SC] and Wood Thrush [SC].	Yes (Barn Swallow, Bristly Buttercup, Green Dragon, Eastern Wood-pewee, Monarch, Scarlet Beebalm, Snapping Turtle, Wood Thrush)	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.	No - Only Barn Swallow was observed within the Subject Lands during site visits, and habitat for this species is no longer present (barns vandalized).

Animal Movement Corridors

Wildlife Habitat	ELC Codes Triggers*	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Amphibian Movement Corridors	-	- Movement corridors are determined when there is confirmed amphibian breeding habitat.	No	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.	No

SWH exceptions

Wildlife Habitat	Ecosites	Habitat Criteria and Information	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Bat Migratory Stopover Area	No triggers	- The site is not near Long Point.	No	• The confirmation criteria and habitat areas for this SWH are still being determined.	No

Appendix F

Floral Inventory Data

Community A1a (Wetland Inclusion)

Floral Inventory									
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**MD**	**Invasive**
Alliaria petiolata	Garlic Mustard	0.0	GNR		NNA		SE5	IC	Y
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C	
Equisetum arvense	Field Horsetail	0.0	G5		N5		S5	C	
Galium aparine	Cleavers	3.0	G5		N5		S5	X	
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	X	Y
Rubus idaeus	Common Red Raspberry	3.0	G5		N5		S5		
Salix alba	White Willow	-3.0	G5		NNA		SE4	IX	
Salix amygdaloides	Peach-leaved Willow	-3.0	G5		N5		S5	X	
Salix bebbiana	Bebb's Willow	-3.0	G5		N5		S5	X	
Salix discolor	Pussy Willow	-3.0	G5		N5		S5	X	
Salix interior	Sandbar Willow	-3.0	GNR		NNR		S5	C	
Taraxacum officinale	Common Dandelion	3.0	G5		N5		SE5	IC	
Vitis riparia	Riverbank Grape	0.0	G5		N5		S5	C	

Community 3 (CUM1)

Floral Inventory (03/19/2015; 07/29/2015)									
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**MD**	
Acer negundo	Manitoba Maple	0	G5		N5		S5	C	
Acer saccharum	Sugar Maple	3	G5		N5		S5	C	
Alliaria petiolata	Garlic Mustard		GNR		NNA		SE5	IC	
Apocynum cannabinum	Hemp Dogbane	0	GNR		N5		S5		
Arctium minus	Common Burdock	3	GNR		NNA		SE5	IC	
Barbarea vulgaris	Bitter Wintercress		GNR		NNA		SE5	IC	
Bromus inermis	Smooth Brome	5	G5		NNA		SE5	IC	
Cichorium intybus	Wild Chicory	3	GNR		NNA		SE5	IC	
Crataegus mollis	Downy Hawthorn	0	G5		NNR		S4S5		
Dactylis glomerata	Orchard Grass		GNR		NNA		SE5	IC	
Daucus carota	Wild Carrot	5	GNR		NNA		SE5	IC	
Echinochloa crus-galli	Large Barnyard Grass	-3	GNR		NNA		SE5	IC	
Elymus repens	Quackgrass	3	GNR		NNA		SE5	IC	
Equisetum arvense	Field Horsetail	0	G5		N5		S5	C	
Hesperis matronalis	Dame's Rocket		G4G5		NNA		SE5	IX	
Melilotus albus	White Sweet-clover		G5		NNA		SE5	IC	
Muhlenbergia mexicana	Mexican Muhly	-3	G5		N5		S5	C	
Oenothera biennis	Common Evening-primrose		G5		N5		S5	X	
Persicaria amphibia	Water Smartweed	-5	G5		N5		S5	X	
Phalaris arundinacea	Reed Canarygrass	-3	G5		N5		S5	X	
Phytolacca americana	Common Pokeweed	3	G5		N4		S4	X	
Populus deltoides	Eastern Cottonwood		G5		N5		S5		
Ranunculus acris	Common Buttercup		G5		NNA		SE5	IC	
Salix x fragilis	(Salix alba X Salix euxina)	0	GNA		NNA		SNA	hyb	
Solidago canadensis	Canada Goldenrod		G5		N5		S5		
Solidago nemoralis ssp. nemoralis	Grey-stemmed Goldenrod	5	G5T5		N5		S5	X	
Sonchus arvensis	Field Sow-thistle		GNR		NNA		SE5	IX	
Symphyotrichum ericoides	White Heath Aster		G5		N5		S5		
Symphyotrichum lanceolatum	Panicled Aster	-3	G5		N5		S5	C	
Symphyotrichum novae-angliae	New England Aster	-3	G5		N5		S5	C	
Symphyotrichum pilosum	Old Field Aster		G5		N5		S5		
Tragopogon pratensis	Meadow Goatsbeard	5	GNR		NNA		SE5	IX	
Verbena hastata	Blue Vervain		G5		N5		S5	C	

Community 4 (MAM1 and CUT1)

Floral Inventory									
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**MD**	**Invasive**
Acer negundo	Manitoba Maple		G5		N5		S5	C	
Apocynum cannabinum	Hemp Dogbane	0.0	G5		N5		S5		
Arctium minus	Common Burdock		GNR		NNA		SE5	IC	
Asclepias syriaca	Common Milkweed	5.0	G5		N5		S5	C	
Bromus inermis	Smooth Brome	5.0	G5		NNA		SE5	IC	
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	X	
Salix euxina	Crack Willow		GNR		NNA		SE	IX	
Salix x fragilis	(Salix alba X Salix euxina)		GNA		NNA		SNA	hyb	
Symphyotrichum lateriflorum	Calico Aster		G5		N5		S5	C	
Urtica dioica	Stinging Nettle		G5		N5		S5		
Persicaria sp.	Smartweed Species								

FLORAL SURVEY INFORMATION SUMMARY SHEET

Project: W3 North Adjacent Lands
Collector(s): W. Huys

	Date	Start	Finish	Weather
Visit 1	21-Apr-17	12:00 PM	4:15 PM	cool, windy, overcast
Visit 2	8-Jun-17	6:00 AM	8:30 AM	warm, still, clear
Visit 3	26-Jun-17	5:45 AM	10:15 AM	warm, still, part cloud
Visit 4	11-Sep-17	9:30 AM	1:00 PM	warm, light breeze, clear

FAMILY	ACRONYM	C	W	WETNESS	OWES*	PHYSIOG.	SCIENTIFIC NAME	COMMON NAME	STATUS				
									ESA	ONT	Mdsx	FOD7	CUT1
ACERAC	ACENEGU	0	-2	FACW-	W	N Tree	Acer negundo	BOX ELDER				x	x
ACERAC	ACESASA	4	3	FACU		N Tree	Acer saccharum	SUGAR MAPLE;HARD MAPLE				x	
GRAMIN	AGRGIGA	*	0	FAC		A Grass	AGROSTIS GIGANTEA	REDTOP					x
GRAMIN	AGRSTOL	0	-3	FACW	W	N Grass	Agrostis stolonifera	CREEPING BENT					x
CRUCIF	ALLPETI	*	0	FAC		A Forb	ALLIARIA PETIOLATA (A. OFFICINALIS)	GARLIC MUSTARD				x	x
COMPOS	AMBARTE	0	3	FACU		N Forb	Ambrosia artemisiifolia	COMMON RAGWEED				x	
COMPOS	ARCMINU	*	5	UPL		A Forb	ARCTIUM MINUS	COMMON BURDOCK					x
ARACEA	ARITRIP	5	-2	FACW-	W	N Forb	Arisaema triphyllum	JACK-IN-THE-PULPIT;INDIAN-TURNIP				x	
ASCLEP	ASCSYRI	0	5	UPL		N Forb	Asclepias syriaca	COMMON MILKWEED					x
ASTERA	BIDFRON	3	-3	FACW	I	N Forb	Bidens frondosa	COMMON BEGGAR-TICKS				x	x
URTICA	BOECYLI	4	-5	OBL	I	N Forb	Boehmeria cylindrica	FALSE NETTLE					
POACEA	BROINERINE	*	5	UPL		A Grass	BROMUS INERMIS SSP. INERMIS	HUNGARIAN BROME;SMOOTH BROME:AWNLESS BROME					x
CYPERA	CARBEBB	3	-5	OBL	I	N Sedge	Carex bebbii	BEBB'S SEDGE					x
CYPERA	CARGRAC	4	3	FACU	W	N Sedge	Carex gracillima	GRACEFUL SEDGE				x	
CYPERA	CARJAME	8	5	UPL		N Sedge	Carex jamesii	GRASS SEDGE				x	
CYPERA	CARLAXM	7	5	UPL		N Sedge	Carex laxiculmis	SEDGE				x	
CYPERA	CARLUPU	6	-5	OBL	I	N Sedge	Carex lupulina	HOP SEDGE					
CYPERA	CARNORM	6	-3	FACW	W	N Sedge	Carex normalis	SEDGE			VU		x
CYPERA	CARROSE	5	5	UPL		N Sedge	Carex rosea (C. convoluta)	ROSY SEDGE				x	
CYPERA	CARSPIC	*	5	UPL		A Sedge	CAREX SPICATA	SEDGE				x	
CYPERA	CARTENE	4	-1	FAC+	W	N Sedge	Carex tenera	SLENDER SEDGE				x	
CYPERA	CARVULP	3	-5	OBL	I	N Sedge	Carex vulpinoidea	FOX SEDGE					x
JUGLAN	CARCORD	6	0	FAC		N Tree	Carya cordiformis	BITTERNUT HICKORY				x	
ASTERA	CIRARVE	*	3	FACU		A Forb	CIRSIUM ARVENSE	CANADIAN-THISTLE					x
ASTERA	CIRMUTI	8	-5	OBL	I	N Forb	Cirsium muticum	SWAMP-THISTLE					x
CORNAC	CORRACE	2	-2	FACW-	W	N Shrub	Cornus racemosa	GRAY DOGWOOD					x
CORNAC	CORSERI	2	-3	FACW	I	N Shrub	Cornus sericea ssp. sericea	RED-OSIER DOGWOOD					x
GRAMIN	DACGLOM	*	3	FACU		A Grass	DACTYLIS GLOMERATA	ORCHARD GRASS					x
UMBELL	DAUCARO	*	5	UPL		A Forb	DAUCUS CAROTA	WILD CARROT;QUEEN-ANNE'S-LACE					x
DIPSAC	DIPFULL	*	5	UPL		A Forb	DIPSACUS FULLONUM spp. SYLVESTRIS	COMMON TEASEL					x
GRAMIN	ECHCRUS	*	-3	FACW	W	A Grass	ECHINOCHLOA CRUS-GALLI	BARNYARD GRASS					x
CUCURB	ECHLOBA	3	-2	FACW-	W	N Vine	Echinocystis lobata	WILD CUCUMBER					x
GRAMIN	ELYREPE	*	3	FACU		A Grass	ELYMUS REPENS (AGROPYRON R.)	QUACK GRASS				x	
GRAMIN	ELYVIRG	5	-2	FACW-	W	N Grass	Elymus virginicus	VIRGINIA WILD-RYE					x
ONAGRA	EPICOLO	3	-5	OBL	I	N Forb	Epilobium coloratum	CINNAMON WILLOW-HERB					x
ORCHID	EPIHELL	*	5	UPL		A Forb	EPIPACTIS HELLEBORINE	HELLEBORINE				x	
ASTERA	ERIANNU	0	1	FAC-		N Forb	Erigeron annuus	ANNUAL FLEABANE				x	x
ASTERA	ERIPHIL	1	-3	FACW	W	N Forb	Erigeron philadelphicus	MARSH FLEABANE				x	
LILIAC	ERYAMER	5	5	UPL		N Forb	Erythronium americanum	YELLOW TROUT LILY				x	
CELAST	EUOEURO	*	5	UPL		A Shrub	EUONYMUS EUROPAEA	SPINDLE TREE					x
CELAST	EUOOBOV	6	5	UPL		N Shrub	Euonymus obovata	RUNNING STRAWBERRY BUSH				x	
ASTERA	EUTGRAM	2	-2	FACW-		N Forb	Euthamia graminifolia (Solidago g.)	FLAT-TOP FRAGRANT GOLDENROD					x
FAGACE	FAGGRAN	6	3	FACU		N Tree	Fagus grandifolia	AMERICAN BEECH				x	
ROSACE	FRAVIRG	2	1	FAC-		N Forb	Fragaria virginiana	WILD STRAWBERRY				x	
GERANI	GERMACU	6	3	FACU		N Forb	Geranium maculatum	WILD GERANIUM				x	
ROSACE	GEUCANA	3	0	FAC	W	N Forb	Geum canadense	WHITE AVENS				x	x
LABIAT	GLEHEDE	*	3	FACU		A Forb	GLECHOMA HEDERACEA	GROUND IVY					x

FAMILY	ACRONYM	C	W	WETNESS	OWES*	PHYSIOG.	SCIENTIFIC NAME	COMMON NAME	STATUS				
									ESA	ONT	Mdsx	6	7
GRAMIN	GLYSTRI	3	-5	OBL	I	N Grass	Glyceria striata	FOWL MANNA GRASS				x	x
BORAGI	HACVIRG	5	1	FAC-		N Forb	Hackelia virginiana	STICKSEED;BEGGAR'S LICE			R5	x	x
HYDROP	HYDVIRG	6	-2	FACW-		N Forb	Hydrophyllum virginianum	VIRGINIA WATERLEAF				x	x
BALSAM	IMPCAPE	4	-3	FACW	I	N Forb	Impatiens capensis	SPOTTED TOUCH-ME-NOT					x
ASTERA	LAPCOMM	*	5	UPL		A Forb	LAPSANA COMMUNIS	NIPPLEWORT				x	
GRAMIN	LEEVIRG	6	-3	FACW	W	N Grass	Leersia virginica	WHITE GRASS				x	
CAPRIF	LONTATA	*	3	FACU		A Shrub	LONICERA TATARICA	SMOOTH TARTARIAN HONEYSUCKLE				x	x
LABIAT	LYCAMER	4	-5	OBL	I	N Forb	Lycopus americanus	COMMON WATER HOREHOUND					x
LYTHRA	LYTSALI	*	-5	OBL	I	A Forb	LYTHRUM SALICARIA	PURPLE LOOSESTRIFE					x
LAMIAC	MENARVE	3	-3	FACW	I	N Forb	Mentha arvensis	WILD MINT; CORN MINT					x
DRYOPT	ONOSENS	4	-3	FACW	I	N Fern	Onoclea sensibilis	SENSITIVE FERN				x	
BETULA	OSTVIRG	4	4	FACU-		N Tree	Ostrya virginiana	IRONWOOD;HOP HORNBEAM				x	x
VITACE	PARINSE	3	3	FACU		N Vine	Parthenocissus inserta (P. vitacea)	THICKET CREEPER				x	
POLYGO	POLAMPH	5	-5	OBL	I	N Forb	Persicaria amphibia var. emersa	WATER SMARTWEED					x
POLYGO	PERLAPA	2	-4	FACW+	W	N Forb	Persicaria lapathifolia	NODDING SMARTWEED				x	
POLYGO	POLVIRM	6	0	FAC		N Forb	Persicaria virginiana	JUMPSEED				x	x
GRAMIN	PHAARUN	0	-4	FACW+	W	N Grass	Phalaris arundinacea	REED CANARY GRASS				x	x
GRAMIN	PHLPRAT	*	3	FACU		A Grass	PHLEUM PRATENSE	TIMOTHY					x
POACEA	POAPRAT	0	1	FAC-		N Grass	Poa pratensis	KENTUCKY BLUEGRASS				x	
ROSACE	PRUSERO	3	3	FACU		N Tree	Prunus serotina	WILD BLACK CHERRY				x	
ROSACE	PRUVIRG	2	1	FAC-		N Shrub	Prunus virginiana	CHOKE CHERRY				x	
RHAMNA	RHACATH	*	3	FACU	W	A Tree	RHAMNUS CATHARTICA	COMMON BUCKTHORN				x	x
ANACAR	RHUHIRT	1	5	UPL		N Tree	Rhus hirta	STAGHORN SUMAC					x
ROSACE	ROSMULT	*	3	FACU		A Shrub	ROSA MULTIFLORA	JAPANESE or MULTIFLORA ROSE					x
ROSACE	RUBIDAE	0	-2	FACW-		N Shrub	Rubus idaeus (R. strigosus)	WILD RED RASPBERRY				x	x
SALICA	SALAMYG	6	-3	FACW	W	N Tree	Salix amygdaloides	PEACH-LEAVED WILLOW					x
CAPRIF	SAMCANA	5	-2	FACW-	W	N Shrub	Sambucus canadensis	ELDERBERRY;COMMON ELDER				x	
PAPAVE	SANCANA	5	4	FACU-		N Forb	Sanguinaria canadensis	BLOODROOT				x	
GRAMIN	SETFABE	*	2	FACU+		A Grass	SETARIA FABERI	GIANT FOXTAIL					x
SOLANA	SOLDULC	*	0	FAC	W	A Vine	SOLANUM DULCAMARA	CLIMBING NIGHTSHADE					x
ASTERA	SOLCANA	1	3	FACU		N Forb	Solidago canadensis	CANADA GOLDENROD				x	
ASTERA	SOLGIGA	4	-3	FACW	W	N Forb	Solidago gigantea	LATE GOLDENROD					x
ASTERA	SONARVE	*	1	FAC-		A Forb	SONCHUS ARVENSIS (S. ULIGINOSUS)	PERENNIAL SOW THISTLE					x
ASTERA	SYMLANC	3	-3	FACW	I	N Forb	Symphyotrichum lanceolatum var. lanceolatum	EASTERN LINED ASTER					x
ASTERA	SYMNOVA	2	-3	FACW		N Forb	Symphyotrichum novae-angliae	NEW ENGLAND ASTER					x
TILIAC	TILAMER	4	3	FACU		N Tree	Tilia americana	LINDEN;BASSWOOD				x	x
ULMACE	ULMAMER	3	-2	FACW-	W	N Tree	Ulmus americana	WHITE or AMERICAN ELM					x
VERBEN	VERHAST	4	-4	FACW+	I	N Forb	Verbena hastata	BLUE VERVAIN					x
VERBEN	VERURTI	4	-1	FAC+	W	N Forb	Verbena urticifolia	WHITE VERVAIN				x	
CAPRIF	VIBLENT	4	-1	FAC+	W	N Shrub	Viburnum lentago	NANNYBERRY;SHEEPBERRY					x
VIOLAC	VIOSORO	4	1	FAC-	W	N Forb	Viola sororia	COMMON BLUE VIOLET				x	
VITACE	VITRIPA	0	-2	FACW-		N Vine	Vitis riparia	RIVERBANK GRAPE				x	x
ASTERA	XANSTRU	2	0	FAC	W	N Forb	Xanthium strumarium	ROUGH COCKLEBUR					x

Appendix G

Breeding Bird Survey Data

AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project Name: Sunset Creek
MTE File No.: 45598-101
Collector(s): W. Huys

	Date	Start	Finish	Weather
Visit 1	7-May-19	10:00	11:00	6°C, 10% cloud cover, light breeze, drizzle
Visit 2	10-Jun-19	5:30	6:30	17°C, 100% cloud, some rain today, wind 1
Visit 3	7-Jul-19	8:30	10:00	19°C, no clouds, wind 1, no precip.
Visit 4	25-May-15	6:30	10:30	Warm, still, partly cloudy
Visit 5	24-Jun-15	6:00	9:45	Warm, still, clear

Species Abbr.	Species Name	Comm. 3 (some # combined with east adj. woodland)				R1 (Pond/Pasture)				Comm. 4a & 4b						Wetland Inclusion A1a						S Rank	ESA Status	PIF Status	Notes
		Visit 4		Visit 5		Visit 2		Visit 3		Visit 1		Visit 2		Visit 3		Visit 1		Visit 2		Visit 3					
		Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.				
CAGO	Canada Goose					P	6															S5			Seen in 4b incidentally.
MALL	Mallard					P	2															S5			Seen in 4b incidentally.
KILL	Killdeer							VO	1													S5			
SPSA	Spotted Sandpiper					SM	1			SM	1											S5			
WAVI	Warbling Vireo	SM	1	SM	1																	S5			
CLSW	Cliff Swallow																			FY	7	S4			Foraging in area near A1a.
BARS	Barn Swallow																			FY	20	S4	SC		Roosting in barn (33 nests counted). Foraging near A1a.
BCCH	Black-capped Chickadee	P	6	P	8																	S5	-		
AMRO	American Robin	FY	5	FY	8													P	2	OB	2	S5			
VESP	Vesper Sparrow	P	2	P	2																	S4		MI	
SAVS	Savannah Sparrow					SM	1	SM	1													S4		RC	
SOSP	Song Sparrow	P	6	P	6			P	2	SM	1	P, T	2	OB	3	SM	1	P	2	OB	1	S5			
NOCA	Northern Cardinal	P	6	P	7											SM	1					S5			
RWBL	Red-winged Blackbird	P, FY	4	P. FY	9	P, T	3	FY	3	P	4					P	4					S4			
BHCO	Brown-headed Cowbird																	P	2	P	3	S4			
AMGO	American Goldfinch	P	7	P	8																	S5			

Evidence Codes:
Breeding Bird - Possible
SH=Suitable Habitat SM=Singing Male
Breeding Bird - Probable
T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest
Breeding Bird - Confirmed
DD=Distraction NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack
Other Wildlife Evidence
OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass
Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project: York - W3 North Lands Collector(s): WH

Visit 1 Date: 8-Jun-17 Visit 2: 26-Jun-17

Start: 6:00 End: 8:30 Start: 5:45 End: 10:15

Weather: clear, still, cool Weather: still, cool, part cloud

Species Code	Species Name	Evidence Code		No.		S Rank	ESA Status	PIF Status	Community	Notes
		vis 1	vis 2	vis 1	vis 2					
DOWO	Downy Woodpecker	-	FY	0	2	S5			FOD7	CONFIRMED BREEDING
BLJA	Blue Jay	P	-	2	0	S5			FOD7	POSSIBLE BREEDER, LIMITED HABITAT
BCCH	Black-capped Chickadee	P	-	2	0	S5	-		FOD7	LIKELY BREEDER, GOOD HABITAT
WBNU	White-breasted Nuthatch	-	SM	0	1	S5	-		FOD7	SUITABLE HABITAT, POTENTIAL BREEDER
AMRO	American Robin	FY	SM	3	2	S5			FOD7	CONFIRMED BREEDING
CEDW	Cedar Waxwing	P	-	2	0	S5			FOD7	SUITABLE HABITAT, POTENTIAL BREEDER
SOSP	Song Sparrow	D	SM	2	3	S5			FOD7	LIKELY BREEDER, GOOD HABITAT
NOCA	Northern Cardinal	P	-	2	0	S5			FOD7	LIKELY BREEDER, GOOD HABITAT
RWBL	Red-winged Blackbird	T	-	2	0	S4			FOD7	LIKELY BREEDER, GOOD HABITAT
COGR	Common Grackle	FY	-	3	0	S5		RC	FOD7	CONFIRMED BREEDING
BAOR	Baltimore Oriole	-	OB	0	1	S4			FOD7	SUITABLE HABITAT, POTENTIAL BREEDER
HOWR	House Wren	SM	-	1	0	S5			CUT1	SUITABLE HABITAT, POTENTIAL BREEDER
AMRO	American Robin	FY	-	3	0	S5			CUT1	CONFIRMED BREEDING
SOSP	Song Sparrow	P	SM	5	1	S5			CUT1	LIKELY BREEDER, GOOD HABITAT
SWSP	Swamp Sparrow	-	FY	0	1	S5			CUT1	CONFIRMED BREEDING
NOCA	Northern Cardinal	-	P	0	2	S5			CUT1	LIKELY BREEDER, GOOD HABITAT
RWBL	Red-winged Blackbird	P	-	2	0	S4			CUT1	LIKELY BREEDER, GOOD HABITAT
BHCO	Brown-headed Cowbird	P	SM	2	1	S4			CUT1	LIKELY BREEDER, GOOD HABITAT
AMGO	American Goldfinch	P	P	4	2	S5			CUT1	LIKELY BREEDER, GOOD HABITAT

Evidence Codes:

Breeding Bird - Possible

SH=Suitable Habitat SM=Singing Male

Breeding Bird - Probable

T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest

Breeding Bird - Confirmed

DD=Distraction NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack

Other Wildlife Evidence

OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass

Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

Appendix H

Amphibian Breeding Survey Data

AMPHIBIAN MONITORING FIELD SHEET

Project: York W3 Phase 2 45598-101
Date: April 8, 2019 Project Manager: LM
Collector(s): WH Visit #: 1

WEATHER CONDITIONS					
Temp.	Wind:	0	Cloud Cover (%)	Precipitation	
11	Direction:	—	0	[x] None/Dry [ ] Drizzle [ ] Damp/Fog [ ] Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Station: A

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

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

SPPE 3

335

NOT IN PROJECT AREA

Station Start Time (24 hr): 22:29

Background Noise Code (1-4): 0

Background Noise Codes

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

Station: B

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

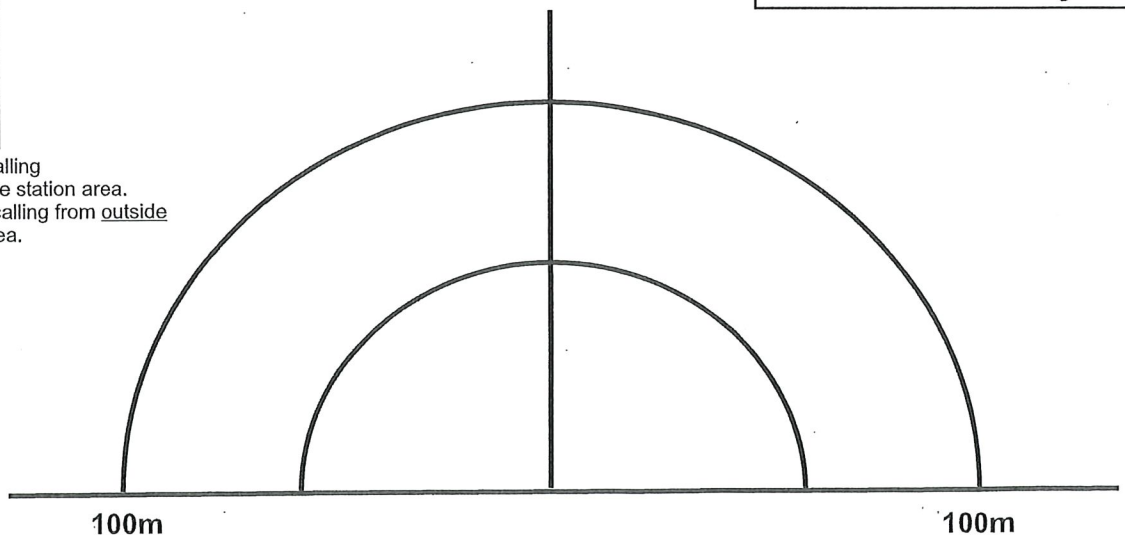
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

SPPE 3

175

Station Start Time (24 hr): 22:41

Background Noise Code (1-4): 0



AMPHIBIAN MONITORING FIELD SHEET

Project: York W3 Phase 2 45598-101
Date: April 8, 2019 Project Manager: LM
Collector(s): WD Visit #: 1

WEATHER CONDITIONS						WIND SCALE
Temp.	Wind:	6	Cloud Cover (%)	Precipitation		0 Calm
11	Direction:	—	0	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain		1 Smoke Drifts
						2 Wind Felt on Face
CALL LEVEL CODES						3 Leaves in constant motion
Code 1: Calls not simultaneous, number of individuals can be accurately counted						4 Wind raises dust and paper
Code 2: Some calls simultaneous, number of individuals can be reliably estimated						
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated						

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

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

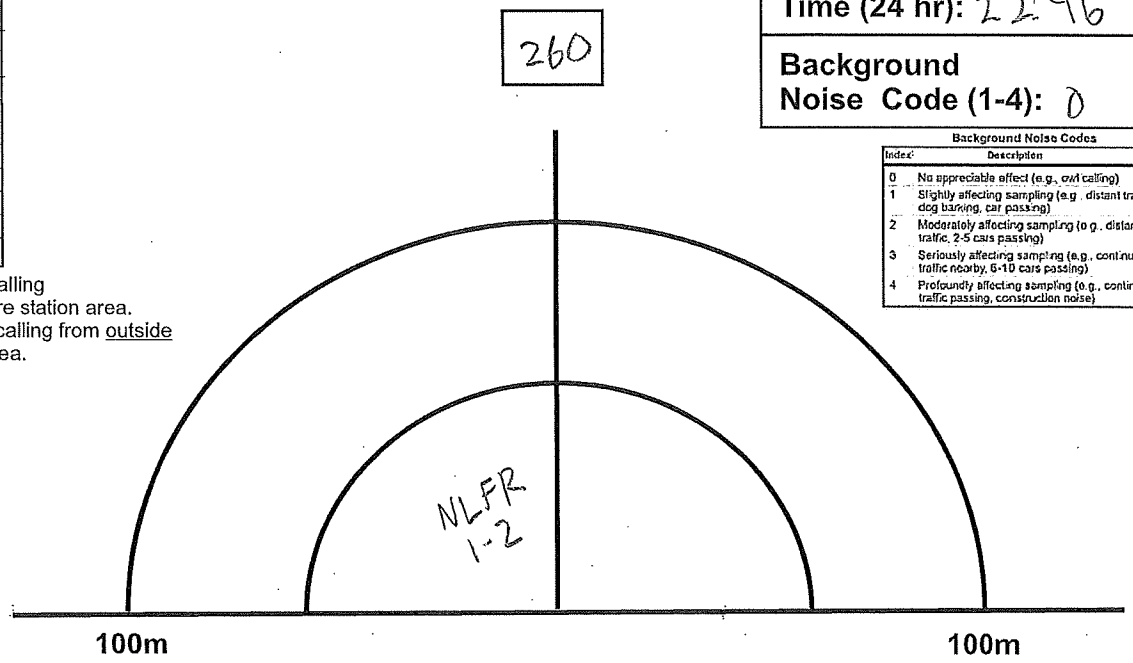
Station: C

Station Start Time (24 hr): 22:46

Background Noise Code (1-4): 0

Background Noise Codes

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



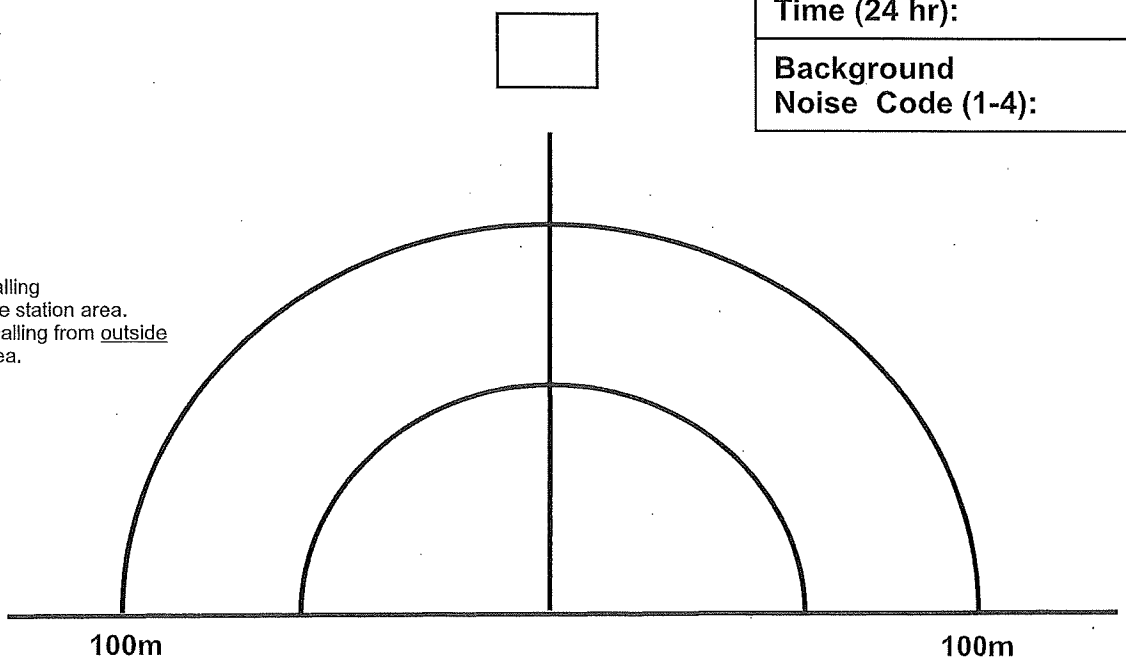
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

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

Station:

Station Start Time (24 hr):

Background Noise Code (1-4):



AMPHIBIAN MONITORING FIELD SHEET

Project: 45598-101_W3
Date: May 16, 2019
Collector(s): WHJ
Project Manager: LM
Visit #: 2

WEATHER CONDITIONS					
Temp.	Wind:	2	Cloud Cover (%)	Precipitation	
16	Direction:	S	35	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☒ No ☐ Yes UTM ____

Station: A

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

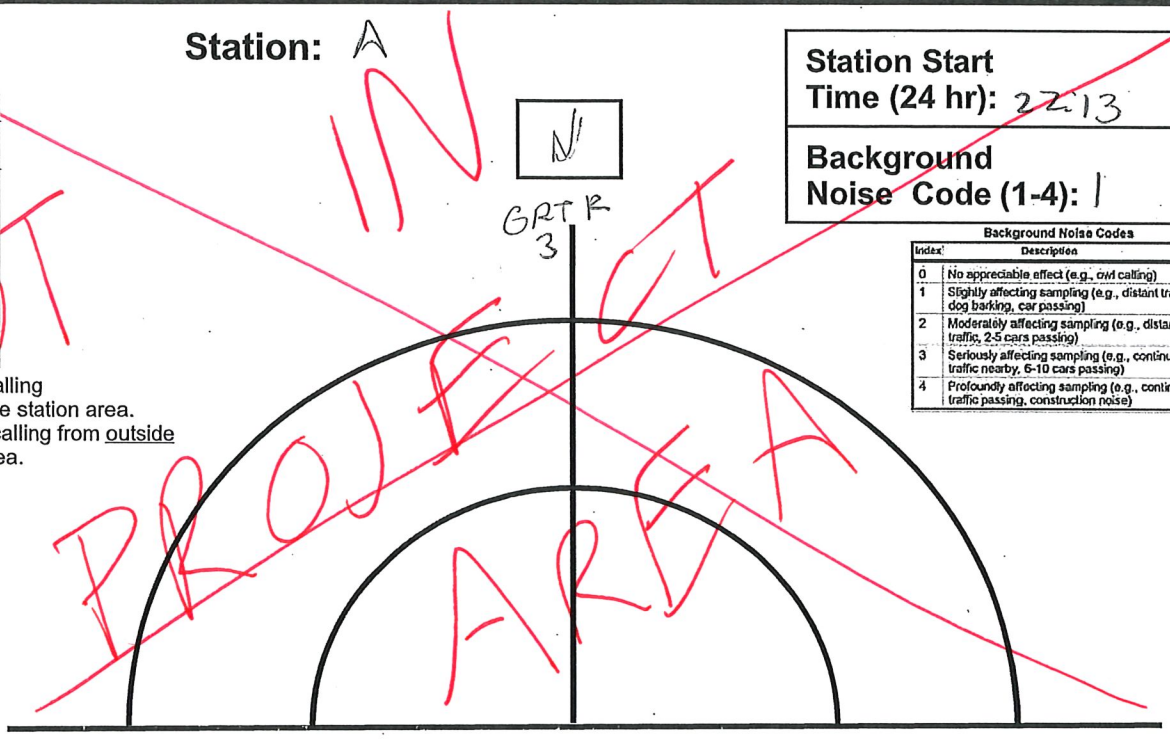
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:13

Background Noise Code (1-4): 1

Background Noise Codes

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



NOT IN PROJECT AREA

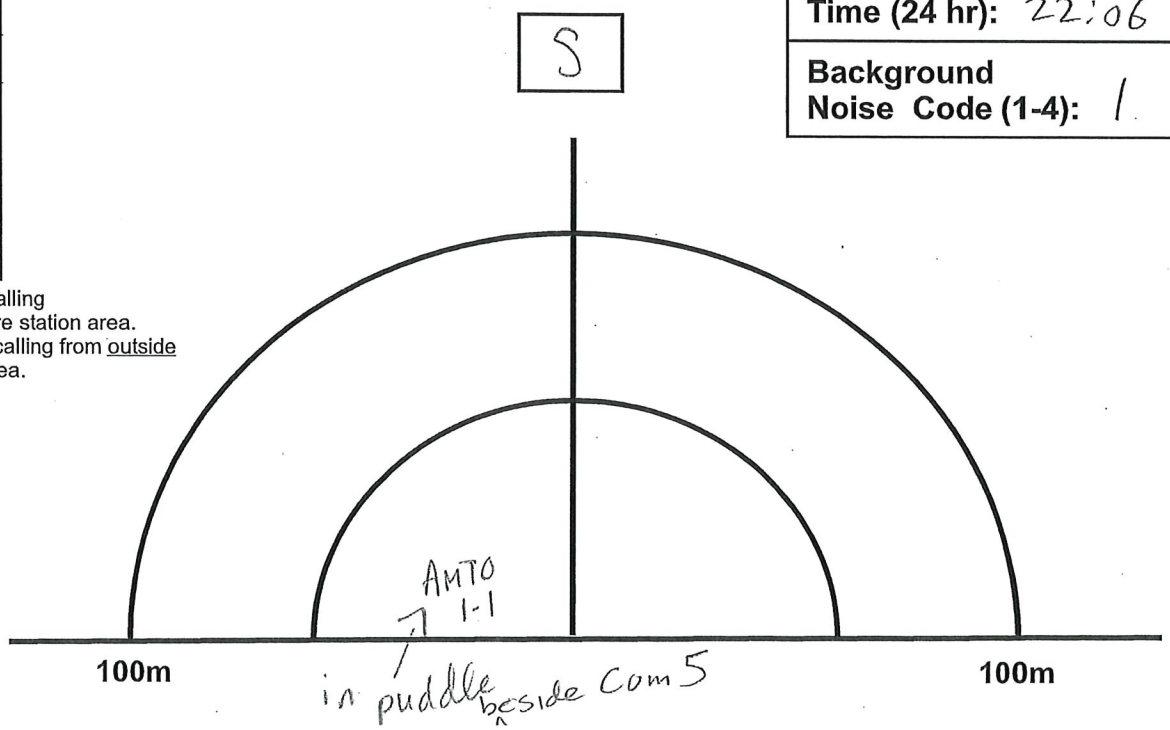
Station: B

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

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

Station Start Time (24 hr): 22:06

Background Noise Code (1-4): 1



in puddle beside Com 5

AMPHIBIAN MONITORING FIELD SHEET

Project: 45598-101 W3
Date: May 16, 2019
Collector(s): WH
Project Manager: LM
Visit #: 2

WEATHER CONDITIONS						WIND SCALE
Temp.	Wind:	2	Cloud Cover (%)	Precipitation		0 Calm
16	Direction:	S	35	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain		1 Smoke Drifts
						2 Wind Felt on Face
						3 Leaves in constant motion
						4 Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☒ No ☐ Yes UTM

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

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

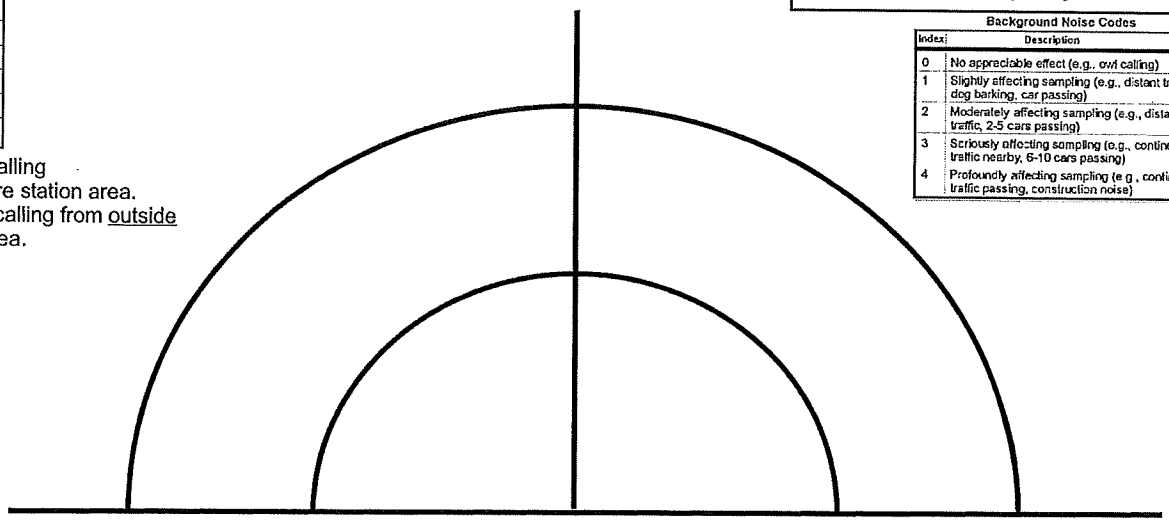
Station: 260

Station Start Time (24 hr): 22:21

Background Noise Code (1-4): 0

Background Noise Codes

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



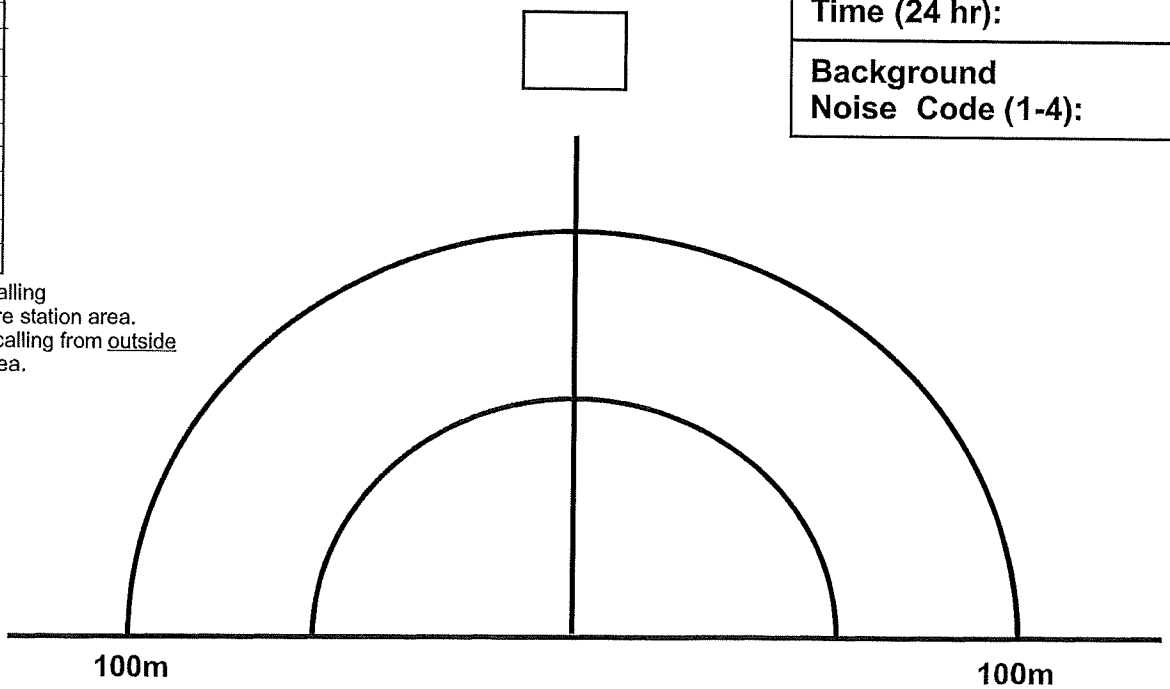
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

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

Station:

Station Start Time (24 hr):

Background Noise Code (1-4):



AMPHIBIAN MONITORING FIELD SHEET

Project: 45598-101 York W3 Farms
Date: June 26, 2019
Collector(s): ZA.
Project Manager: LM
Visit #: 3

WEATHER CONDITIONS					
Temp.	Wind: 0		Cloud Cover (%)	Precipitation	
21°C	Direction: /		20%	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☒ No ☐ Yes UTM

Station: A

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

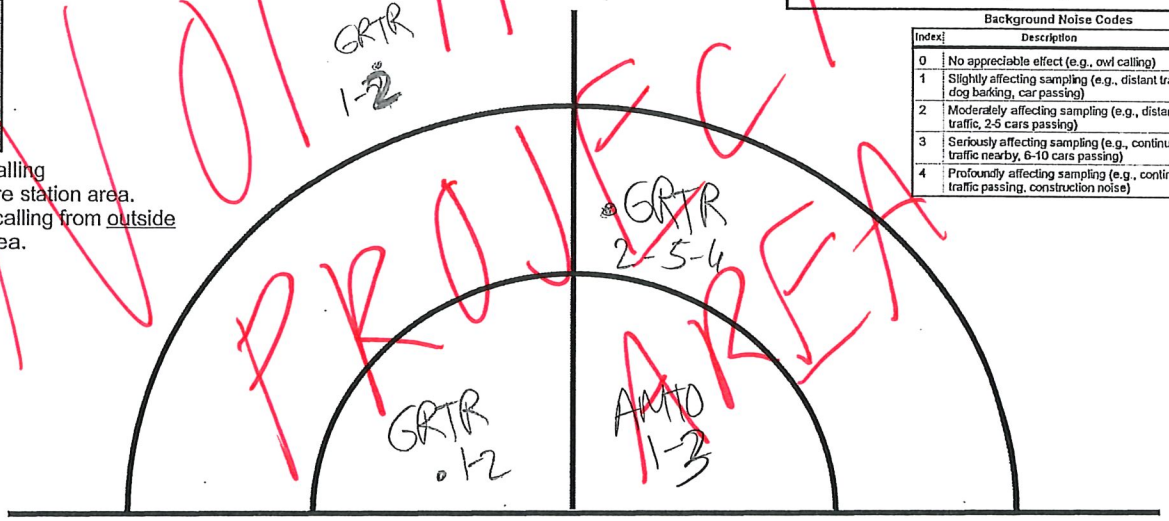
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:43

Background Noise Code (1-4): 1

Background Noise Codes

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



NOT IN PROJECT AREA

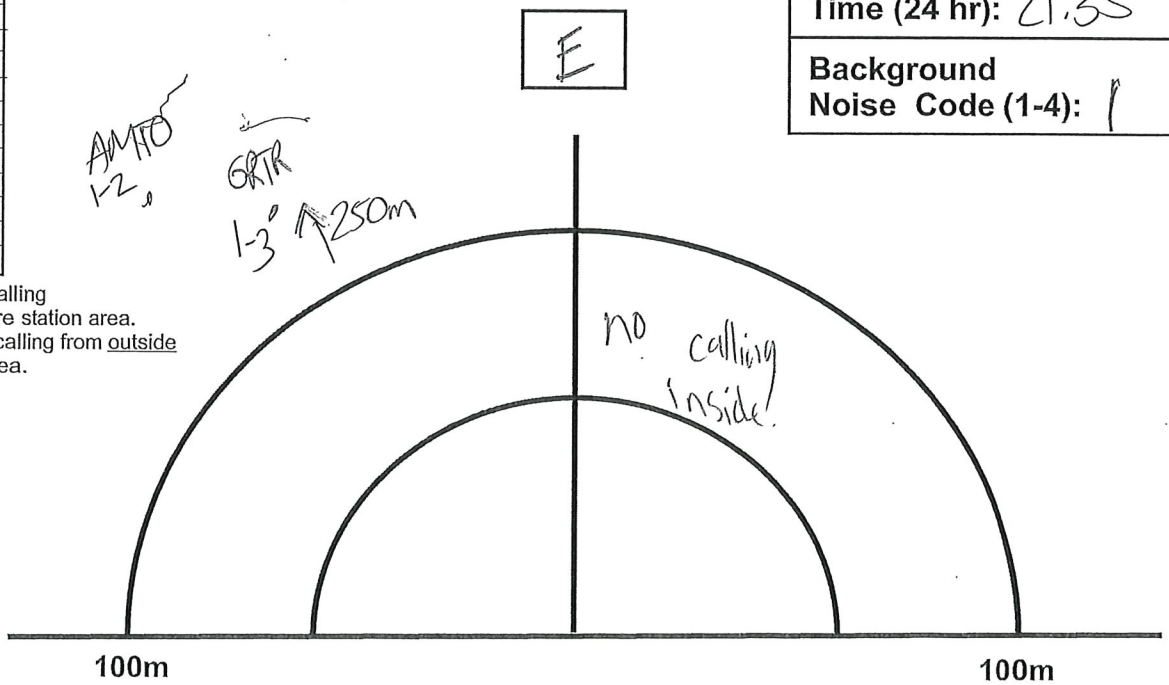
Station: B

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

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

Station Start Time (24 hr): 21:35

Background Noise Code (1-4): 1



AMPHIBIAN MONITORING FIELD SHEET

Project: 45519-101 York W3 Farms
Date: June 26, 2019 Project Manager: LM
Collector(s): ZA. Visit #: 3

WEATHER CONDITIONS					
Temp.	Wind:		Cloud Cover (%)	Precipitation	
	Direction:			☐ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM

Station: C

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

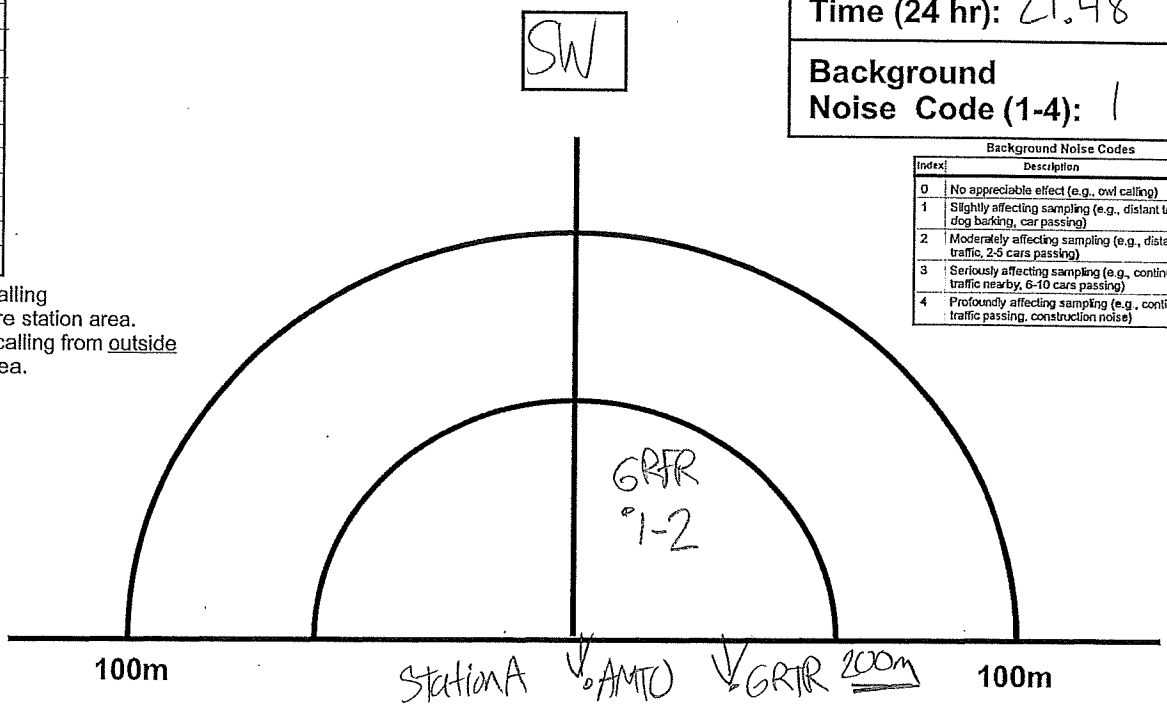
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:48

Background Noise Code (1-4): 1

Background Noise Codes

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



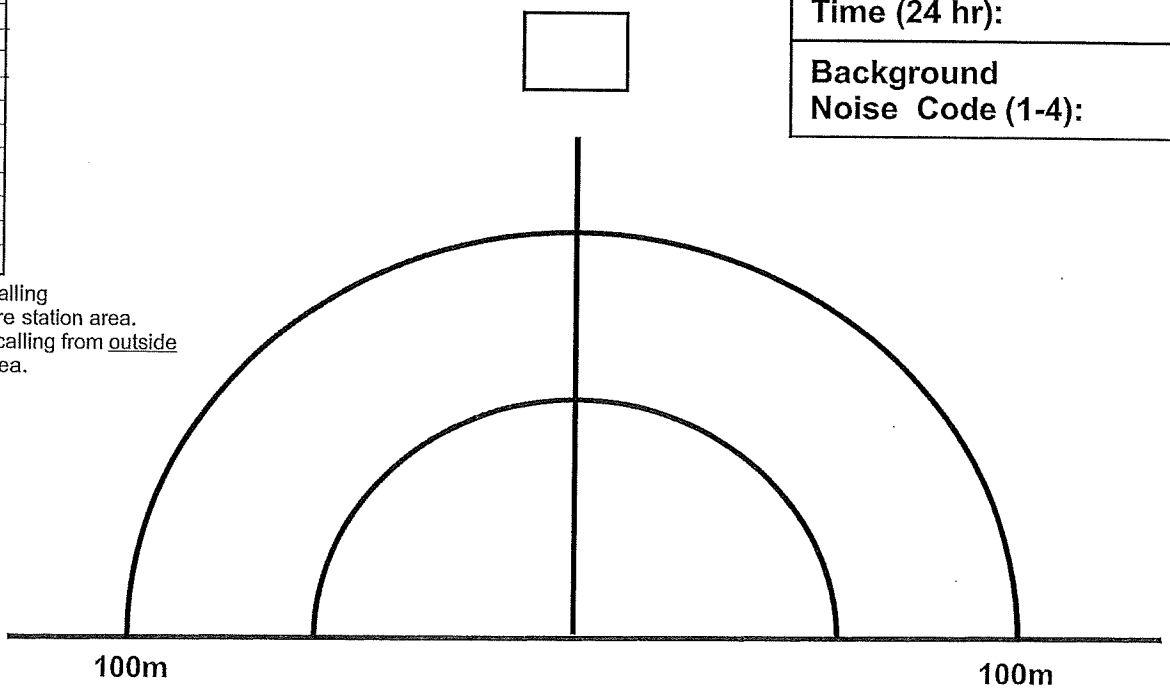
Station:

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

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

Station Start Time (24 hr):

Background Noise Code (1-4):



AMPHIBIAN MONITORING FIELD SHEET

Project: 43598-101 WB
Date: Mar 25, 2021 Project Manager:
Collector(s): WH VS Visit #: 1

WEATHER CONDITIONS								WIND SCALE
Temp.	Wind:	2	Cloud Cover (%)	Precipitation			0	Calm
15	Direction:	S	overcast	☒ None/Dry	☒ Drizzle		1	Smoke Drifts
				☐ Damp/Fog	☐ Rain		2	Wind Felt on Face
CALL LEVEL CODES							3	Leaves in constant motion
Code 1: Calls not simultaneous, number of individuals can be accurately counted							4	Wind raises dust and paper
Code 2: Some calls simultaneous, number of individuals can be reliably estimated								
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated								

Reference Site: ☐ No ☐ Yes UTM

Station: 474777, 4752296

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

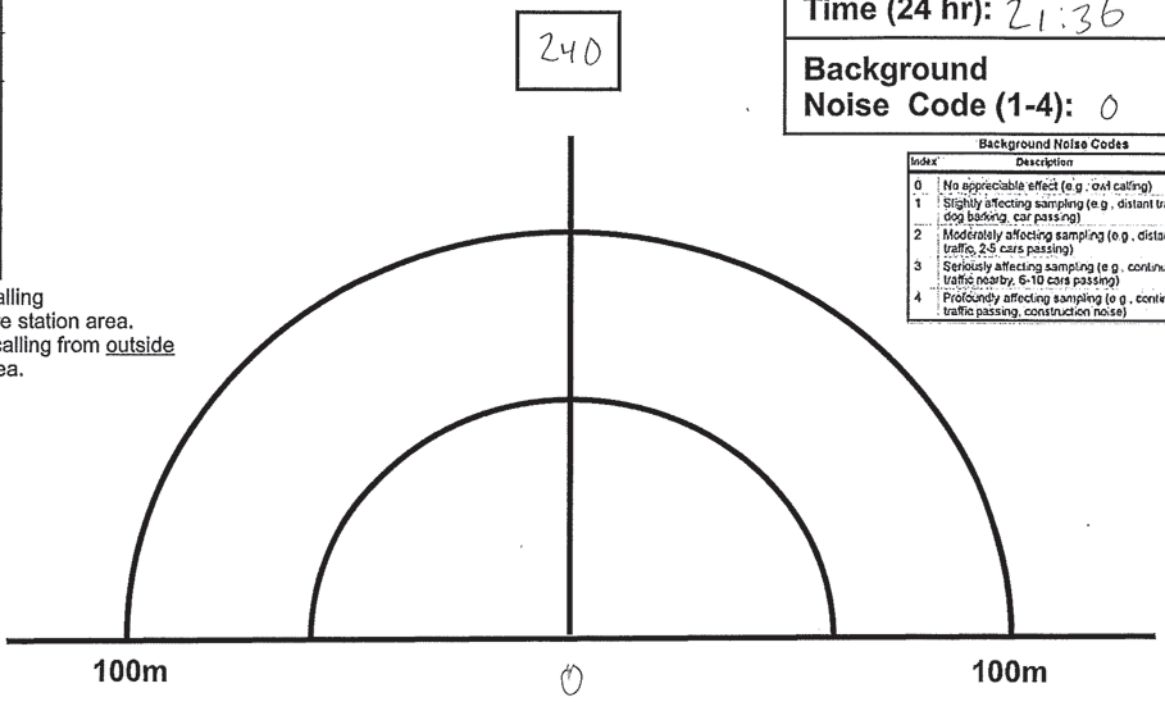
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:36

Background Noise Code (1-4): 0

Background Noise Codes

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



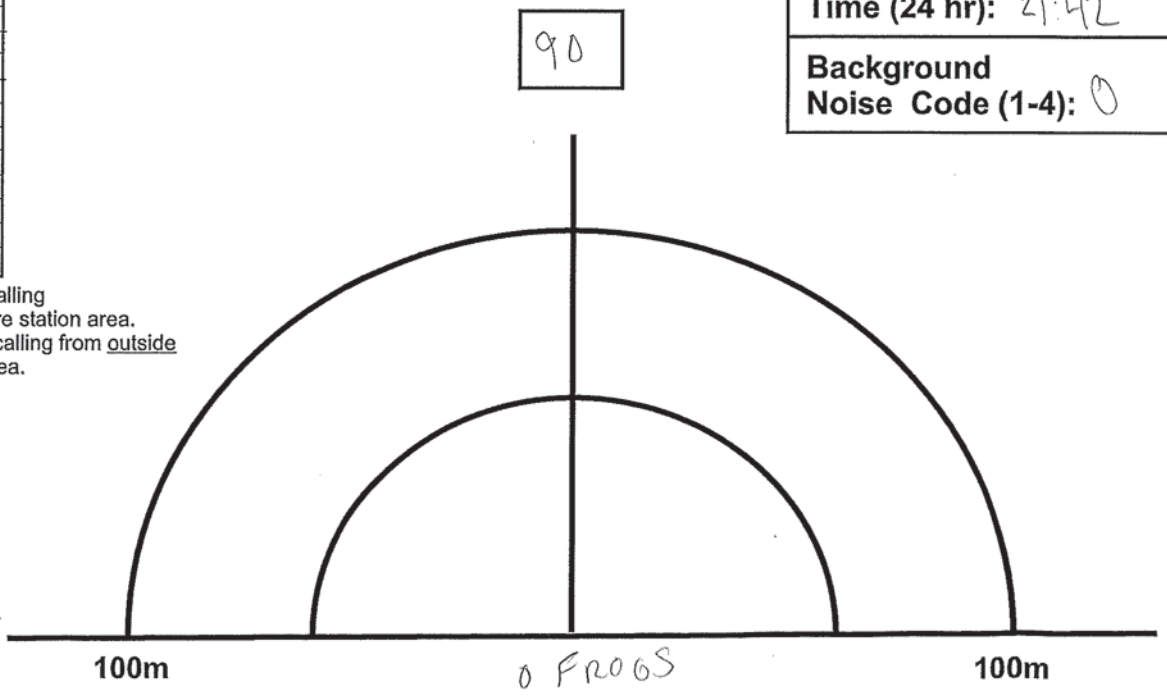
Station: 474848

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

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

Station Start Time (24 hr): 21:42

Background Noise Code (1-4): 0



AMPHIBIAN MONITORING FIELD SHEET

Project: _____
Date: Mar 25, 2021 Project Manager: _____
Collector(s): WH VS Visit #: _____

WEATHER CONDITIONS							WIND SCALE
Temp.	Wind:	2	Cloud Cover (%)	Precipitation			0 Calm
15	Direction:	S	overcast	☐ None/Dry ☐ Damp/Fog	☒ Drizzle ☐ Rain		1 Smoke Drifts
							2 Wind Felt on Face
CALL LEVEL CODES							3 Leaves in constant motion
Code 1: Calls not simultaneous, number of individuals can be accurately counted							4 Wind raises dust and paper
Code 2: Some calls simultaneous, number of individuals can be reliably estimated							
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated							

Reference Site: ☐ No ☐ Yes UTM _____

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

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

Station: 474687, 4752060

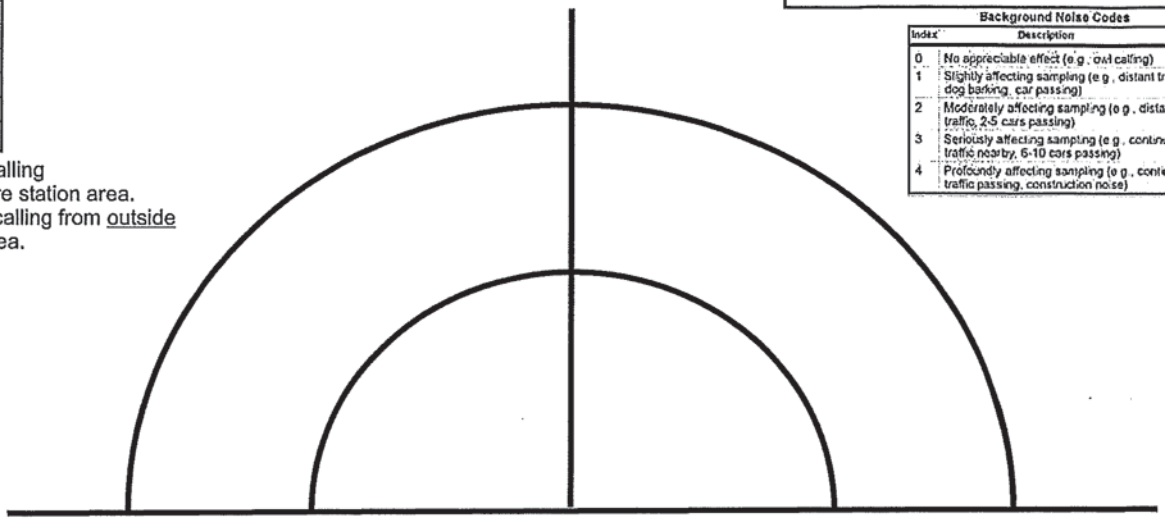
260

Station Start Time (24 hr): 21:50

Background Noise Code (1-4): 0

Background Noise Codes

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



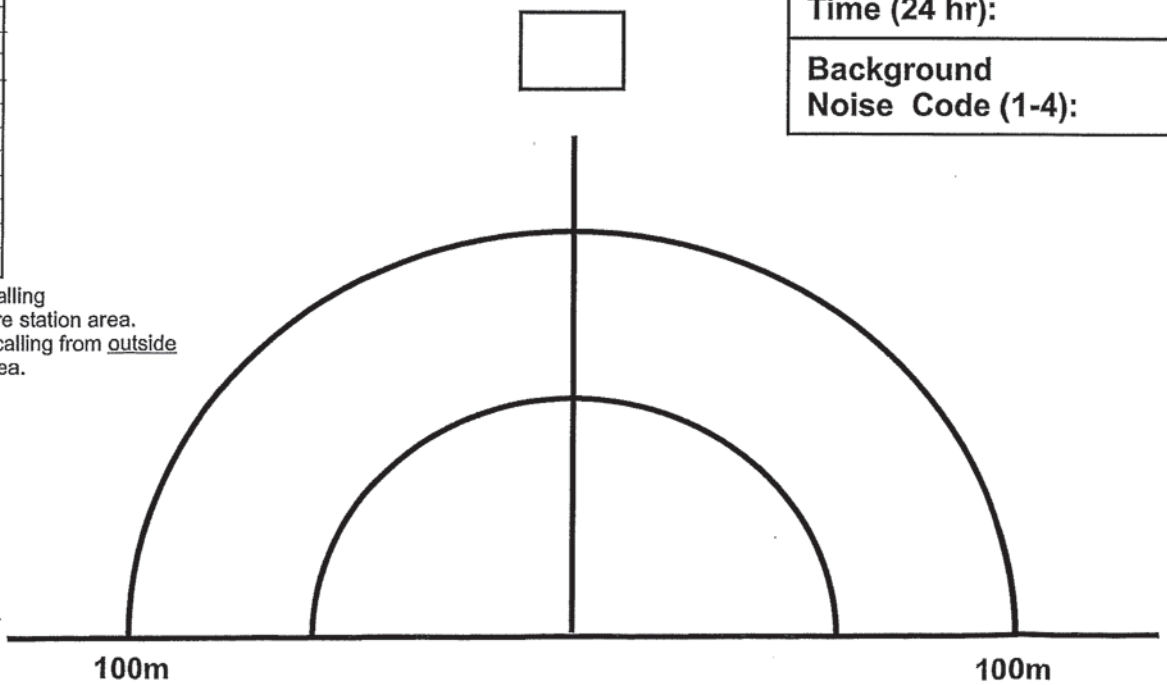
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

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

Station:

Station Start Time (24 hr):

Background Noise Code (1-4):



GENERAL SITE INFORMATION FIELD SHEET

Project: 45598-101
Date: May 13, 2021 Project Manager:
Collector(s): VS AL Visit #: Frogs 2
Time started: 8:45 Time finished: Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind: 1 (9 km/h)		Cloud Cover (%)	Precipitation
15°C	Direction: NW		10%	Today: No Yesterday: No

DATA FOCUS					
☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☒	Amphibians 1_(2) 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☒ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				
Long ephemeral feature dry				

Graphic ☐ Attached or Name L:\ENV\Biological Services\Templates\MTE NEnv_General Field Sheet Checked by Project Manager ☐ Date:

AMPHIBIAN MONITORING FIELD SHEET

Project: 45598-101
Date: May 13, 2021 Project Manager:
Collector(s): VS AL Visit #: Frog 2

WEATHER CONDITIONS				
Temp.	Wind: 1		Cloud Cover (%)	Precipitation
15°C	Direction: NW		10%	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☒ No ☐ Yes UTM

Station: A

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

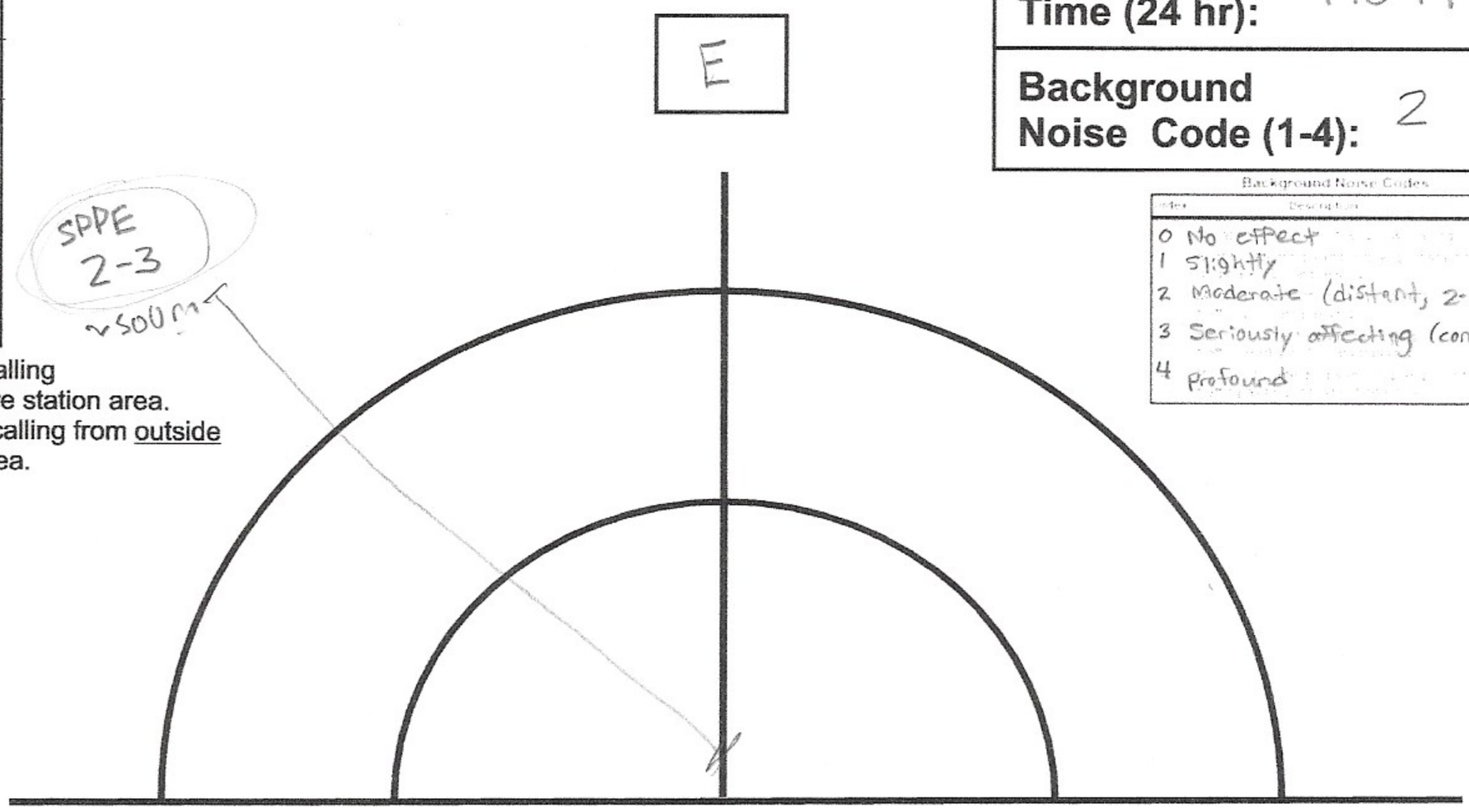
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 9:10 PM

Background Noise Code (1-4): 2

Background Noise Codes

Code	Description
0	No effect
1	Slightly
2	Moderate (distant, 2-5 cars)
3	Seriously affecting (continuous, 6-10 cars)
4	Profound



Station: B

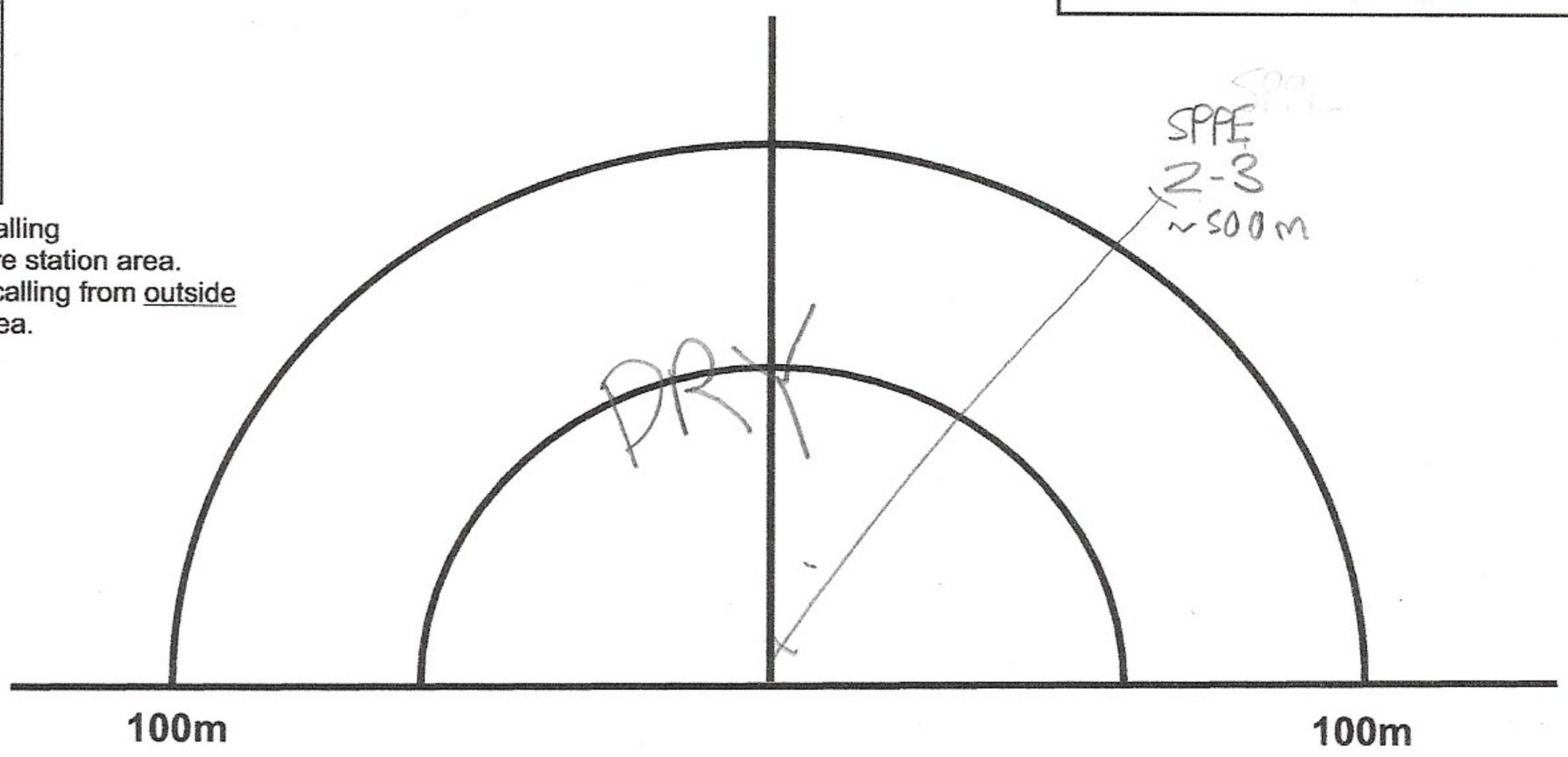
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		X
WOFR		

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

SPPE 1-2 very far

Station Start Time (24 hr): 9:25 PM

Background Noise Code (1-4):



AMPHIBIAN MONITORING FIELD SHEET

Project: _____

Date: May 13, 2021 Project Manager: _____

Collector(s): VS AL Visit #: Frogs 2

WEATHER CONDITIONS					
Temp.	Wind: 1		Cloud Cover (%)	Precipitation	
15°C	Direction: NW		10%	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

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

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

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

Reference Site: ☐ No ☐ Yes UTM _____

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

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

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

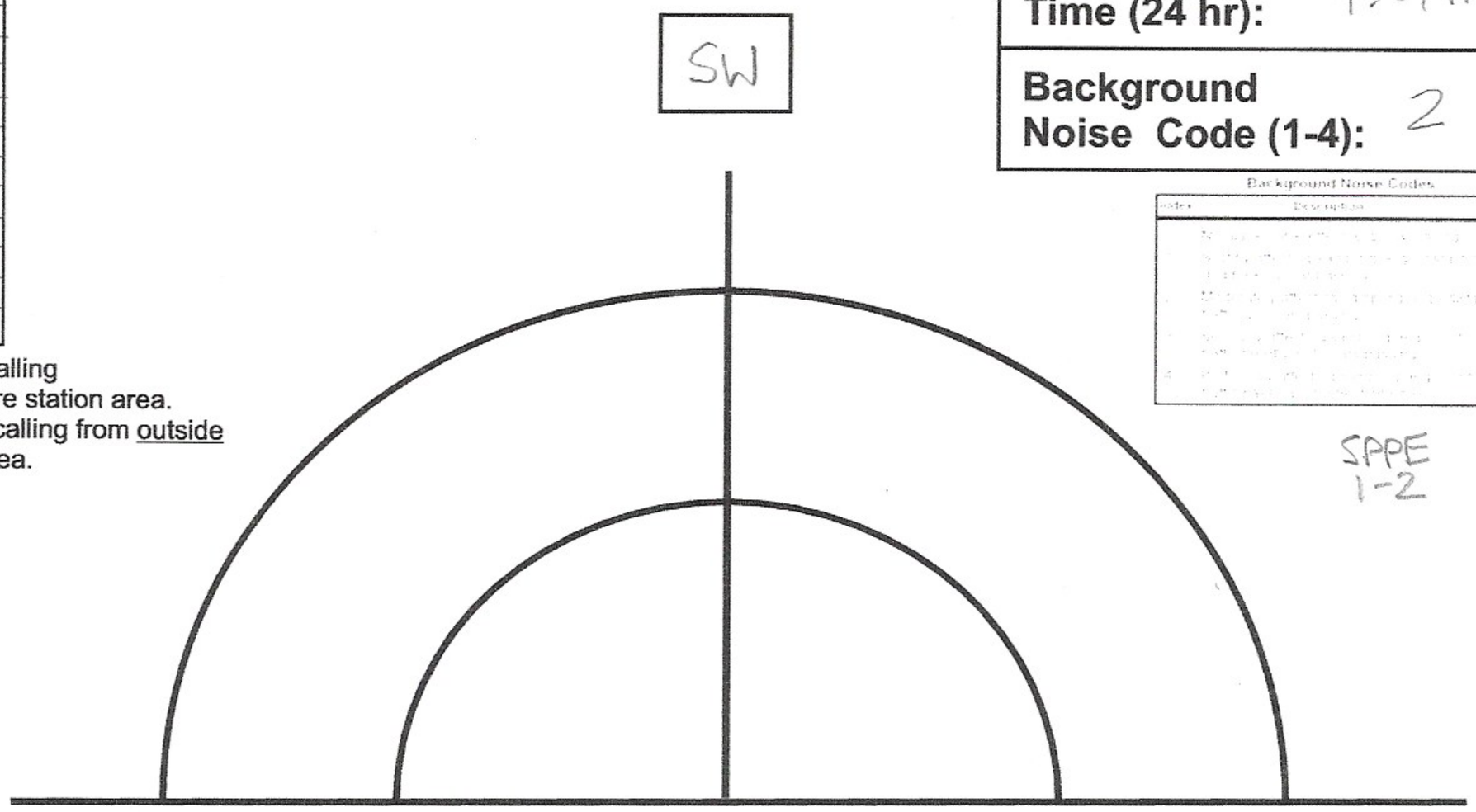
SPPE 1-3 ☆

Same as heard in B

Station: C

Station Start Time (24 hr): 9:31 PM

Background Noise Code (1-4): 2



Background Noise Codes

Code	Description

SPPE 1-2

Station:

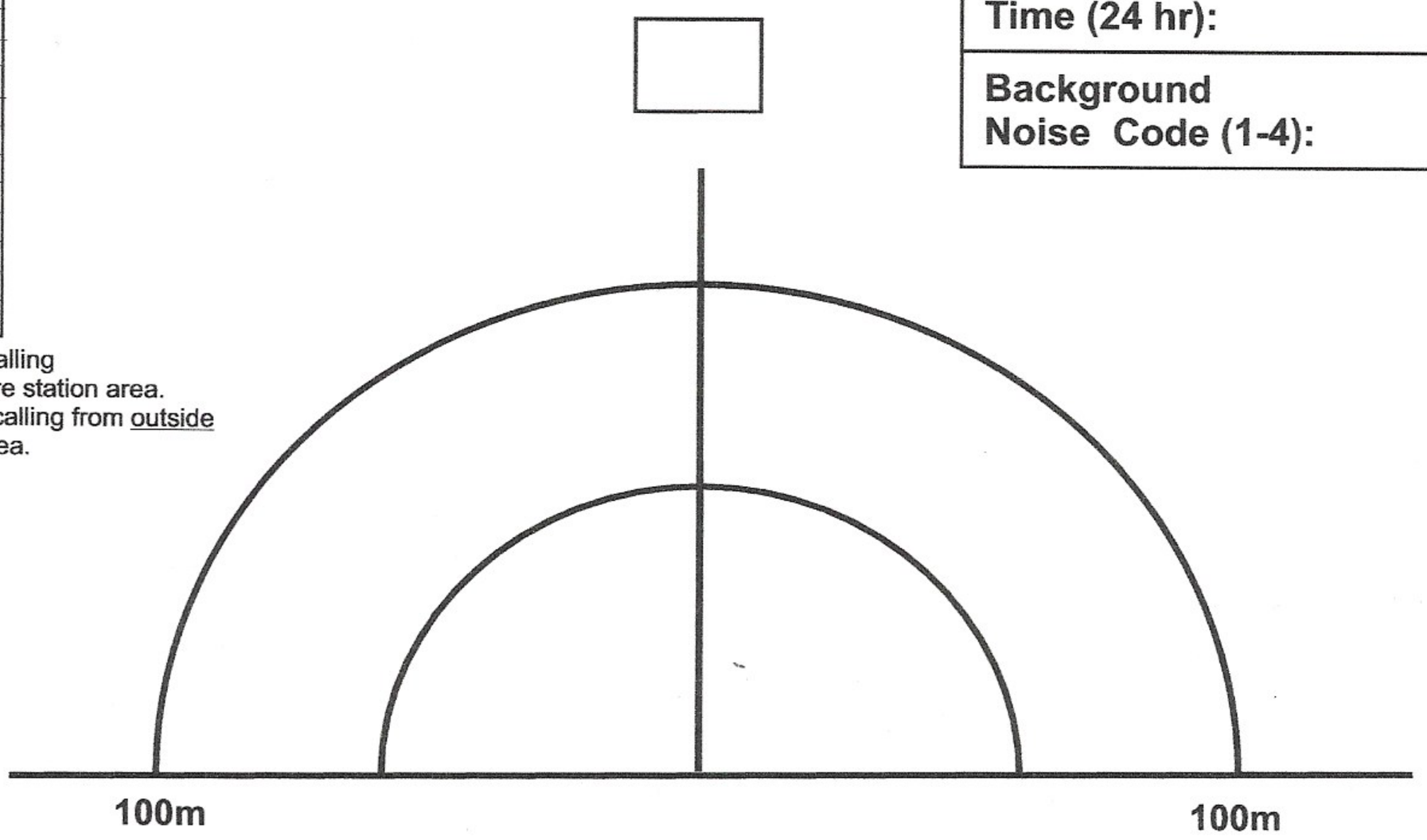
Station Start Time (24 hr):

Background Noise Code (1-4):

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

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

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



GENERAL SITE INFORMATION FIELD SHEET

Project: 45598-101 (W3 Farms)
Date: June 17, 2021 Project Manager: DH
Collector(s): AL + VS Visit #:
Time started: 11:10 Time finished: 11:55 Combined collectors' hours: 1.5
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:	1	Cloud Cover (%)	Precipitation
19°C	Direction:	S	20%	Today: Ø Yesterday: Ø

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
☒	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☒ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
☐ Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

- No aquatic feature present at station B
- Saw 3 deer

Graphic ☐ Attached or Name

Checked by Project Manager ☐ Date:

AMPHIBIAN MONITORING FIELD SHEET

Project: 45598-101
Date: June 17, 2021 Project Manager: DH
Collector(s): VS + AL Visit #:

WEATHER CONDITIONS					
Temp.	Wind:		Cloud Cover (%)	Precipitation	
19	Direction:	S	10	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM

Station: A

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

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

339°

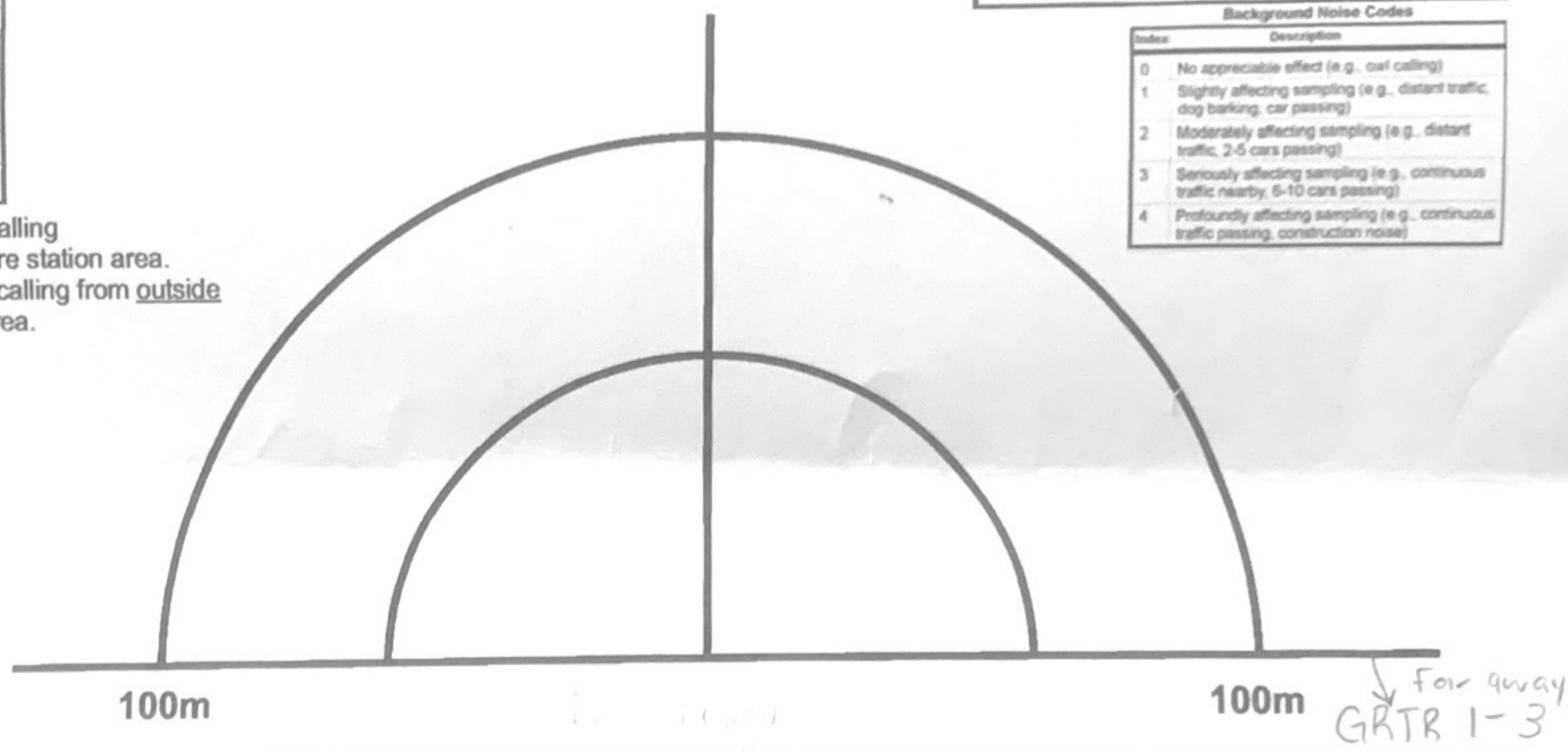
N

Station Start Time (24 hr): 23:23

Background Noise Code (1-4): 1

Background Noise Codes

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



Station: B

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

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

* No aquatic feature present *

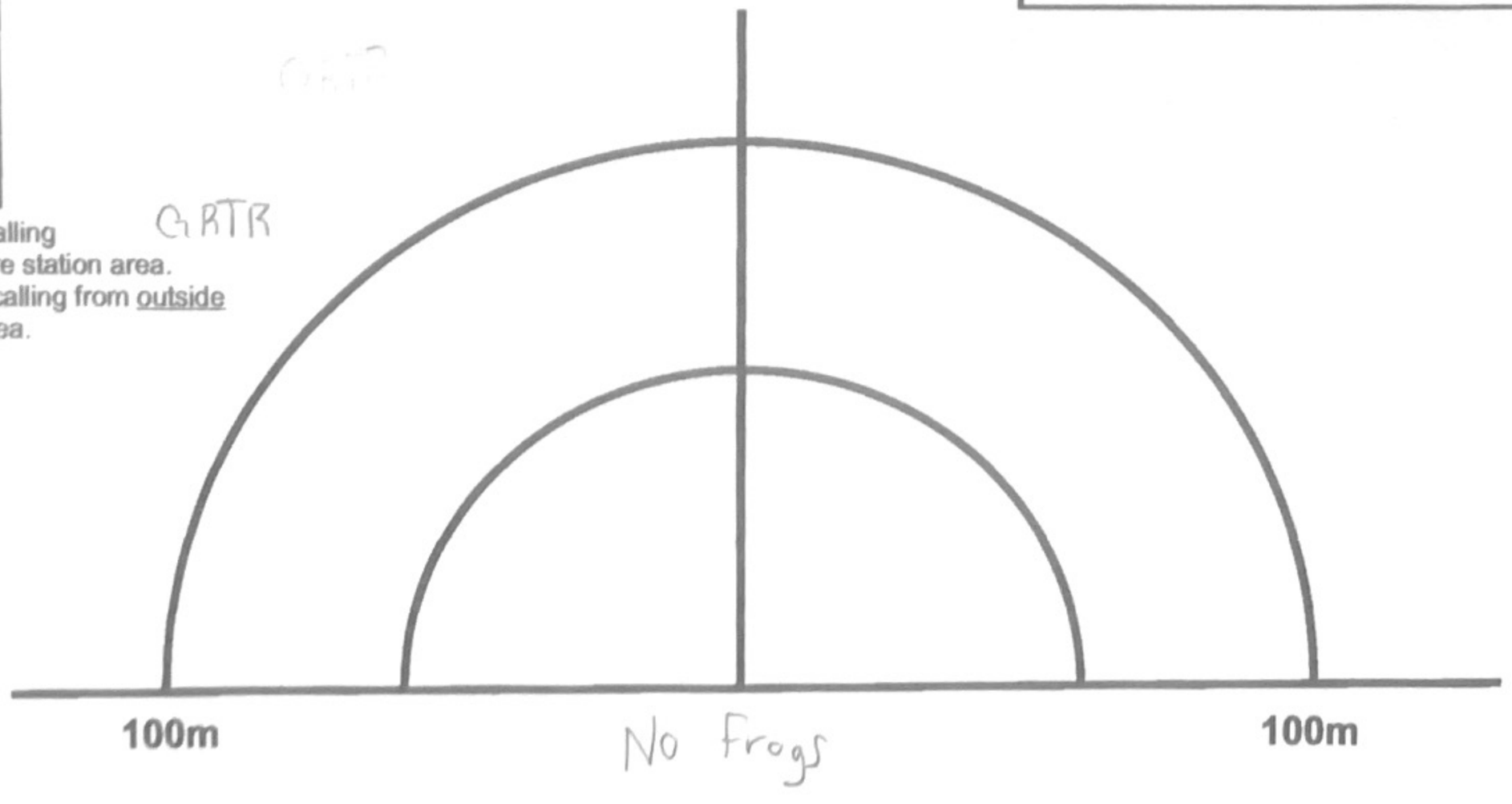
68°

E

Station Start Time (24 hr): 23:33

Background Noise Code (1-4): 1

GRTR



AMPHIBIAN MONITORING FIELD SHEET

Project: 45598-161
Date: June 17, 2021
Collector(s): V.S + A.L
Project Manager: DH
Visit #:

WEATHER CONDITIONS					
Temp.	Wind:		Cloud Cover (%)	Precipitation	
19	Direction:	S	10	☒ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM

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

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

Station: C

320°

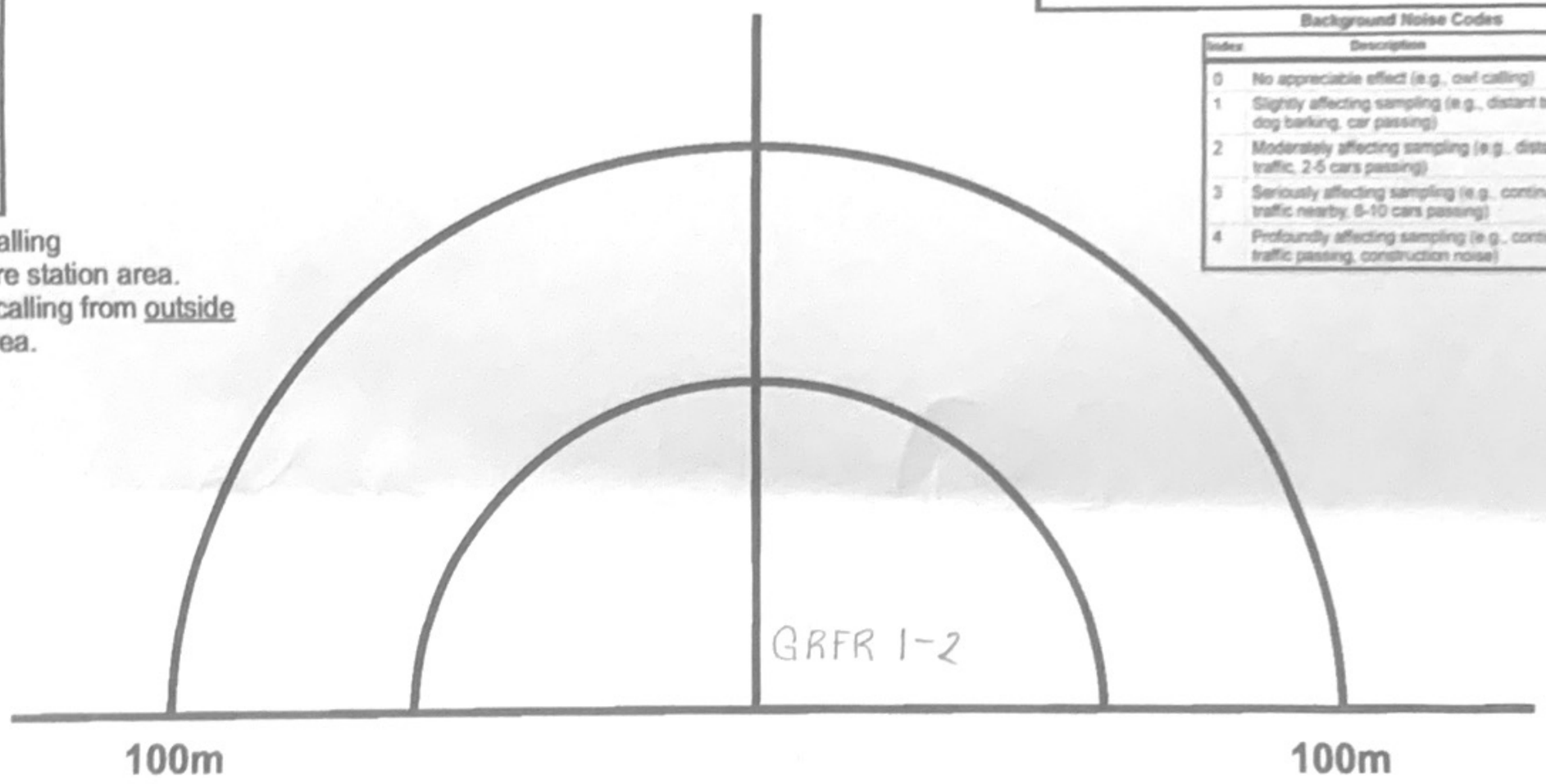
N

Station Start Time (24 hr): 23:41

Background Noise Code (1-4): 1

Background Noise Codes

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



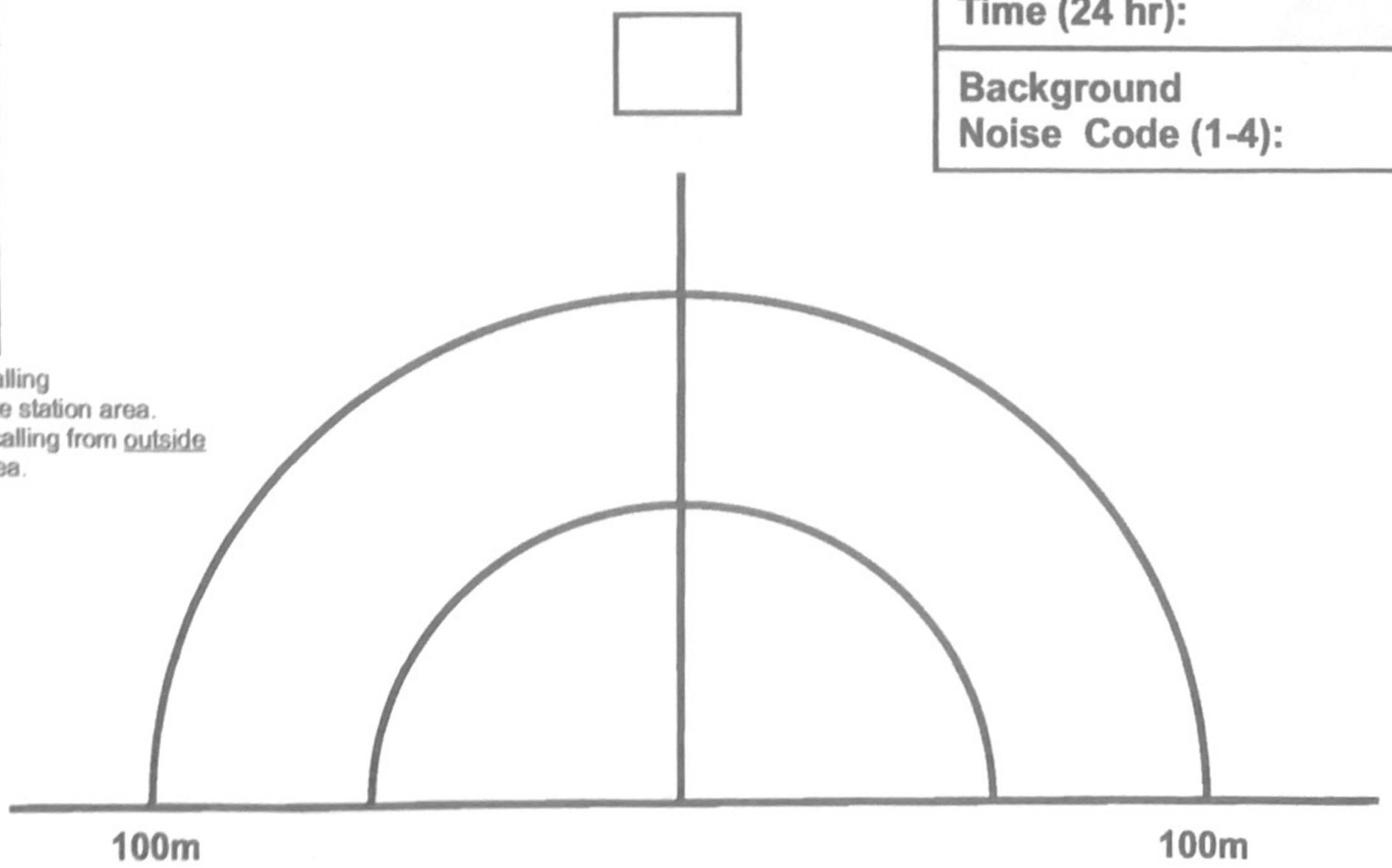
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

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

Station:

Station Start Time (24 hr):

Background Noise Code (1-4):



Appendix I

Woodland Patch Assessment (NRSI, 2021)

Woodland Patch Assessment Score Sheet — March 2006

Criterion	Factors for Evaluation	Score for each Factor HIGH-MEDIUM-LOW		
		Landscape Level	Community Level	Species Level
1.1 Site Protection	a) Presence of hydrological features	High		
	b) Erosion and slope protection	Low		✓
Score for 1.1: Circle the highest standard achieved for any one of the two standards		**HIGH**	**MEDIUM**	**LOW**
1.2 Landscape Integrity	a) Landscape Richness	low ~~medium~~		
	b) Landscape Connectivity	low		
	c) Patch Distribution	low		
Score for 1.2: Circle the highest standard achieved for any one of the three standards		**HIGH**	**MEDIUM**	**LOW**
2.1 Age and Site Quality	a) Community Successional Stage		medium	
	b) Mean Coefficient of Conservatism of Communities		low	
	c) Disturbance related to Human Activity		low	
Score for 2.1 : Circle the highest standard achieved for any one of the three standards		**HIGH**	**MEDIUM**	**LOW**
2.2 Size and Shape	a) Patch Size	low		
	b) Patch Shape/Interior	low		
	c) Conservative Bird Species			low
Score for 2.2: Circle the highest standard achieved for any one of the three categories		**HIGH**	**MEDIUM**	**LOW**
2.3 Diversity of Natural Communities and Associated Species	a) ELC Community Diversity	low	low	
	b) ELC Vegetation Type and Topographic Diversity (variation and heterogeneity)		low	
	c) Diversity (species and individuals) & Critical Habitat Components for Amphibians			low
	d) Presence of Conifer Cover			low
	e) Fish Habitat Quality			low
Score for 2.3: Circle the highest standard achieved for any one of the five standards		**HIGH**	**MEDIUM**	**LOW**
3 Endangered and Threatened Species presence		**YES = HIGH**		**NO = no score**

Criterion	Factors for Evaluation	Score for each Factor HIGH-MEDIUM-LOW		
		Landscape Level	Community Level	Species Level
4.1 Distinctive, Unusual or High Quality Natural Communities	a) ELC Community SRANK		low	
	b) Specialized or rare species presence/absence			low
	c) Size and distribution of large trees		med.	
	d) Basal Area		low	
Score for 4.1: Circle the highest standard achieved for any one of the four standards		HIGH	**MEDIUM**	LOW
4.2 Distinctive, Unusual, or High Quality Landforms	a) Distinctive Landforms	medium		
Score for 4.2: Circle the highest standard achieved		HIGH	**MEDIUM**	LOW

Woodland Patch Evaluation Summary Score sheet March 2006

Assessment for Woodland Significance :

A woodland will be considered as a significant component of the Natural Heritage System and designated as open space based on the following categories:

If one or more criteria meet the standard for High;
If five criteria meet the standard for Medium. Proposed Threshold not yet approved

CRITERION	SCORE
CRITERION 1.1 Site Protection	High
CRITERION 1.2 Landscape Integrity	Low
CRITERION 2.1 Age and Site Quality	Medium
CRITERION 2.2 Size and Shape	Low
CRITERION 2.3 Diversity of Natural Communities and Associated Species	Low
CRITERION 3 Endangered and Threatened Species (TE Habitat)	No Score.
CRITERION 4.1 Distinctive, Unusual or High Quality Natural Communities	Medium
CRITERION 4.2 Distinctive, Unusual or High Quality Landforms	Medium
SUMMARY OF SIGNIFICANCE OF EIGHT ECOLOGICAL CRITERIA Number of High	1
Number of Medium	3
Number of Low	3
Presence of habitat for Species at Risk	YES (POSSIBLE) NO

Patch Number: Subwatershed: Dingman Creek

Woodland Patch is a Significant Component of the Natural Heritage System: ☑ YES ☐ NO

Refer to Official Plan Policy 15.4.5, Woodlands for the Council approved threshold of significance.

Prepared by: Gina MacVeigh, Natural Resource Solutions Inc.

Date: August 25, 2016

Appendix J

“Living with Natural Areas” Brochure (UTRCA, 2005)

Living With Natural Areas

a guide for homeowners

Is this information for me?

Natural areas are valuable features of our communities' parks and open spaces. Many citizens, however, may not be aware of these local treasures and the need to protect them. What can you do - whether as a property owner or as someone out to enjoy the scenery and get some exercise - to minimize your impact on natural areas? This brochure answers that question. First, it provides guidelines for those of us who live near natural areas, outlining ways to make the spillover impact from our properties more positive. Next, a "code of behaviour" describes what activities are appropriate in a natural area. The last section lists sources where more information can be obtained.

What is a natural area?

Natural areas include wetlands, meadows, woodlots, valley lands and other relatively undisturbed lands that are home to many different plants and wildlife. Natural areas also include the green spaces and stormwater management ponds found in many new developments.

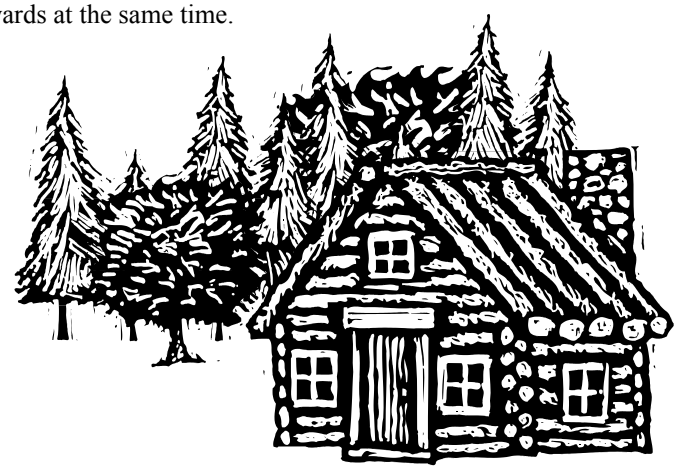
Some natural areas contain rare plants, wildlife or landforms, or have features characteristic of the region before European settlement, or are especially large or diverse in habitat. Many natural areas are considered environmentally significant on a local, regional, provincial or even national scale.

Many municipalities are working to preserve local natural areas. Settlement and development have destroyed much natural vegetation and caused some types of habitat to disappear completely. Often, natural areas contain the only remaining large sections of forest or wetland. They help us to learn about nature, provide clues to the current health of our environment, and add to our quality of life.

Around your home - having a positive impact

The properties that surround natural areas were once part of a wild landscape. Some yards still have remnants of particular habitat types, such as wet areas along the edge of a wetland. As development moves closer to natural areas, trees and other plants that were once in the middle of woodlands or wetlands, shielded by forests, are now exposed.

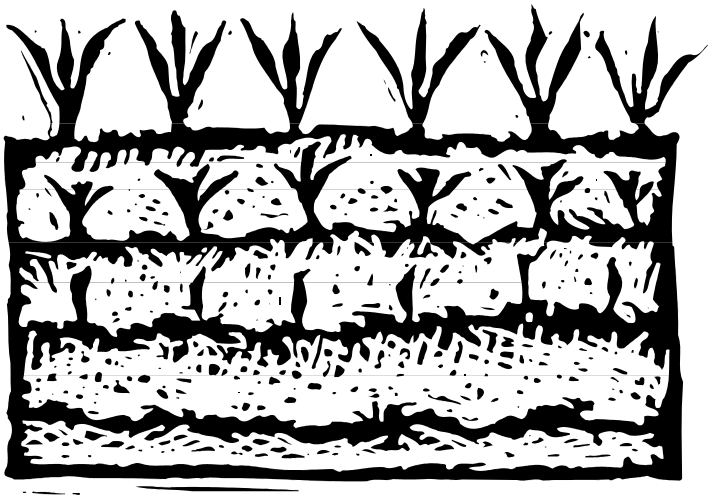
Because urban development sits on the doorstep of many natural areas, what is done in neighbouring yards is critical to their health. Here are some ideas to help home owners to ensure that their activities can help neighbouring natural areas and enhance their yards at the same time.



What about encroachment into natural areas?

Thanks to people who recognize their property limits! If a lawn is mowed past property boundaries into a natural area, the rich habitat is replaced by a manicured lawn and the original diversity is reduced. The cumulative impact of dozens, even hundreds of landowners cutting into the edges of natural areas threatens their integrity.

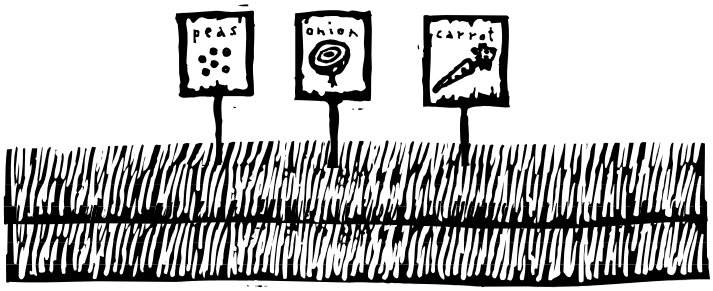
Encroaching past private lot lines into municipal parkland or open space is not permitted and may result in legal proceedings. Call your municipality for more information.



Can I dump my yard & garden waste in a natural area?

Dumped yard waste is bad news for any natural area. Dumped material smothers natural vegetation, may contain harmful chemicals, and often has plant seeds not found normally in the wild. If these materials are dumped in a natural area, the introduced seeds may grow where they fall. Native plants and the wildlife that depends on are constantly under threat from invading non-native plants.

Your local municipality has by-laws concerning dumping waste. For more serious offences, charges can be laid under the Provincial Offences Act, with fines of up to $5000. Call your municipality if you have concerns about waste being dumped illegally.

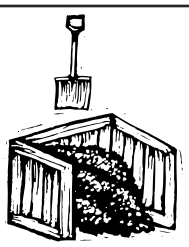


What should I do with yard & garden waste?

The best solution is to reduce and recycle as much as possible, by composting leaves, grass clippings, weeds and other materials on your own property. You reduce the amount of garbage going to landfills and create rich soil for your lawn and garden. If you can't use all your grass clippings, leaves and brush, ask your neighbours if they need more material for their home composters. Alternatively, put your yard waste out for curbside collection, or drop it off at London's Yard Waste Depots.

If you employ a professional gardener, check that proper disposal practices are followed. Reputable commercial gardeners are well aware of the City's yard waste regulations.

If you are having home composting problems, such as visits from unwanted wildlife, call the Rot Line (operated by the Thames Region Ecological Association, or TREA) at 519-672-5991 for free advice.



Is it okay to use lawn and garden chemicals?

Remember that, just as water landing on your property doesn't always stay there, neither may all the chemicals that you put on your lawn, garden or driveway. If your property drains into a natural area, any chemical that you use can be carried by water into that area. By adopting an environmentally friendly approach to yard maintenance, you will enhance both your yard and the natural area beyond.

Here are some tips to follow:

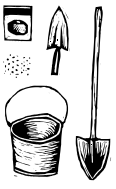
- Add compost to your lawn to fertilize it.
- Use a mulching lawnmower to return nutrients to your lawn.
- Cut your lawn at a high setting to reduce weed growth and retain moisture.
- Water grass early in the morning and allow it to dry out between waterings.
- Use alternative native ground covers in shaded areas.
- If you live next to a natural area, consider creating a buffer strip (up to 5 metres wide) on your property. Plant native shrubs and trees in the buffer to reduce the spillover effect.
- Investigate non-toxic alternatives to chemicals for control of pests, weeds and plant diseases.
- If you have to use pesticides, read the product labels carefully and use only as directed. Dispose of household and pool chemicals safely.

Did you know that, in general, approximately 10 times more pesticides are applied by city home owners than are used by farmers on an equal area of farm land?

Does it matter what I grow in my garden?

Alien alert! Be careful when growing plants that are not native to Southern Ontario. Plants don't recognize property boundaries and can spread easily from gardens to natural areas. Many alien species do not have natural predators here and are extremely invasive. For example, the beautiful European import called Purple Loosestrife is flourishing across North America, invading wetlands and out-competing native plants. As a result, plant diversity is reduced and fewer places remain where native wildlife can survive.

Other common species that out-compete native plants are Norway Maple, Periwinkle, and Goutweed (Goat's Foot). Check with your local nursery to find out which plants are native to your region before purchasing. Native plants are better adapted to the climate, soil conditions, insects and diseases of this area.



Many municipalities or counties have information on plants that are suitable for use near natural areas and which plants to avoid.

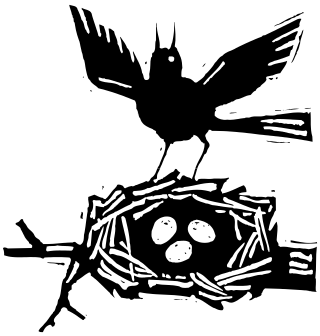
Can I attract wildlife to my yard?

Habitat loss is the number one threat to wildlife today. With time and careful planning, you can create habitat in your back yard and provide a safe haven for many species to visit. Wildlife will be attracted by food, water and shelter, but these elements must be arranged so that birds and animals are not exposed to danger. Cats can have a major impact on bird and animal populations. Keeping your cat indoors from May to July will reduce its impact on nesting birds and small animals. Squirrels drawn to birdfeeders will also eat eggs and nestlings.

A natural area can be a great source of scenic beauty and pleasure. These areas may also be home to insects, such as mosquitoes, that are an important link in the food chain. Suitable clothing and insect repellants will help you avoid becoming part of the chain.

Stepping out in a natural area - "Take only memories, leave only footprints"

Many natural areas are accessible to the public. Local significant areas may contain rare and endangered plants and animals, unique landforms, and habitats that are prized for their high quality and diversity. However, the very features that make them precious are also those that could be easily damaged by thoughtless actions. Most damage occurs when people leave the marked trails and trample vegetation. By following the guidelines below, you can enjoy these natural areas without harming them, and leave them in a healthy state for their "residents" and future visitors.



Rules to remember in a natural area

- Please use the official access points and managed trails. Don't create or use trails that originate in people's backyards, as these additional trails cause more widespread trampling and disturbance of wildlife and plants.
- Avoid walking in natural areas when the trails are muddy, such as in the early spring or after a heavy rainfall. More vegetation gets trampled when people have to walk around mudholes.
- Please respect signs indicating that bicycles are not permitted in a natural area.
- Keep natural areas litter free.
- Keep dogs leashed. Cats and dogs are hunters by nature. If allowed to run loose, they put great stress on or kill birds and small animals. Don't forget to stoop and scoop!
- Do not disturb wildlife or pick or transplant flowers.

Can I take anything from a natural area?

Natural areas are often the only wild place remaining for rare native wildflowers to grow. These plants may have complicated life cycles or need seeds from existing flowers to regenerate the next year. Removing even a few plants can jeopardize the remaining population. Some garden centres stock a wide variety of native plants, trees and shrubs. These have a much better chance of surviving in your yard as they have been raised under similar soil and light conditions.

It is tempting to pick plants for food or herbal remedies, but this practice, just like transplanting, is not appropriate or sustainable. Even a few people picking plants can put the local population of that species in danger. Besides, those plants have a more important role in the natural environment than as food or medicine for humans!

A natural area is no place to find firewood or lawn decorations. Taking dead wood from a natural area will hurt that area's health in the long-term. As wood decays, it contributes nutrients to the soil and provides food and shelter for thousands of tiny organisms. In addition, new growth often depends on old stumps and logs. Cutting trees and brush destroys habitat, tramples vegetation and disturbs wildlife.

Enjoy wildlife when you discover it, but leave it in its natural setting. Don't make survival harder by taking animals out of their homes, leaving fewer behind to carry on. It is impossible to give a wild animal the proper care and nutrition to keep it healthy and happy. Also, it is illegal to keep wild animals, even injured ones, in captivity without a permit.

You can help out the local naturalist and trail groups that regularly remove litter from the natural areas. Pick up any litter that you find and dispose of it properly, and, of course, don't leave any more behind!

Beware!

If you encounter a plant with three shiny green leaflets, leave it alone! You may have found poison ivy, which is abundant in many natural areas. Many people get nasty rashes from the sap of this plant, whether from direct contact with the leaves, roots and stems or from touching pets or equipment that have the sap on them. Remember, though, that poison ivy is part of the food chain, growing berries that are edible for birds and animals. Learn to recognize and avoid it, rather than trying to get rid of it. Poison ivy is usually found in partial shade as a knee-high ground cover, but can also grow as a vine up tree trunks. "Leaflets three, let it be!"

Deer, Deer!

If you are bothered by deer foraging in your backyard, here are some suggestions to protect your garden.

Make your garden unpalatable - Garden centres and the Internet are good sources of information on "deer proof plants." Beebalm, bleeding heart, butterfly bush, cone flower, foxglove and rhododendron are among the plants that deer don't like eating.

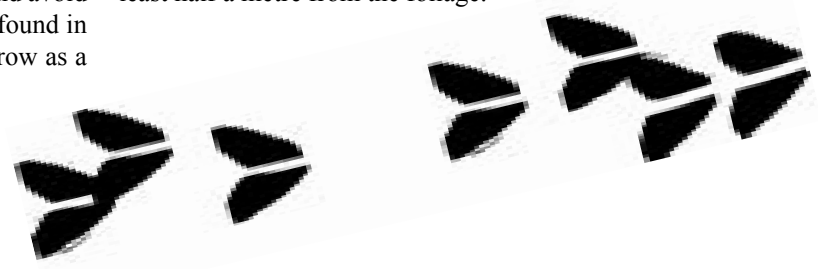
Make the fringes unpalatable - Surround your property with unpalatable and repellent native plants, and the deer may decide to forage elsewhere. Cedar and yew are delicacies for deer and should be avoided. White spruce, tamarack and juniper are good substitutes as deer will avoid them.

Block the view - Deer want an unobstructed view to see approaching predators and do not like to venture past anything that they cannot see through or over. A trellis covered in vines may discourage them.

Block the landing sites - Deer will not jump into your yard if they cannot see where they will land. Wooden fences or lattices that obstruct their view are a good deterrent.

Tidy up - Pick fruit such as apples and pears as they ripen, and remove or till under plants in the vegetable garden after harvest.

Fence them out - Specific trees or beds can be protected with mesh or screen. The barriers should be at least two metres high and at least half a metre from the foliage.



Where can I find out more?

More information on being a good natural neighbour:

- For composting tips call the "Rot Line" at 519-672-5991. This free service is offered to the public by the Thames Region Ecological Association (TREA).
- *Backyard Habitats* (pamphlet) and *Natural Invaders* (booklet). Available from the Federation of Ontario Naturalists at 1-800-440-2366, www.ontarionature.org
- Johnson, Lorraine, 1995. *The Ontario Naturalized Garden*. Whitecap Books, Toronto, Ontario.
- Ministry of Natural Resources, 1990. *Landscaping for Wildlife*. Queen's Printer for Ontario, Ontario.
- Rubin, Carole, 1989. *How to Get your Lawn & Garden off Drugs*. Friends of the Earth, Ottawa, Ontario.

This brochure was published in 2005 by the Upper Thames River Conservation Authority, and based on *Living with Natural Areas - A Guide for Citizens of London*, originally produced by the Upper Thames River Conservation Authority, the City of London's Ecological and Environmental Planning Advisory Committee, and Celebrate the Thames.

UPPER THAMES RIVER
CONSERVATION AUTHORITY
Inspiring a healthy environment
1424 Clarke Road, London, Ontario N5V 5B9
519-451-2800 www.thamesriver.on.ca

Appendix K

Environmental Management Plan (EMP)

MTE Consultants
123 St. George St., London, Ontario N6A 3A1

May 12, 2023

MTE File No.: 45598-101

York Developments (on behalf of W3 Farms Inc.)
303 Richmond Street Suite 201
London, ON N6B 2H8
david.ailles@yorkdev.ca

To Whom it May Concern:

RE: ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR SUNSET CREEK SUBDIVISION AT 3680 & 3700 COLONEL TALBOT ROAD, LONDON, ON

York Developments, on behalf of W3 Lambeth Farms Inc. (the 'Proponent'), has initiated the Draft Plan of Subdivision approval process for a residential development at 3680 and 3700 Colonel Talbot Road in London, ON (the 'Subject Lands'). MTE Consultants has been retained to prepare a Scoped Environmental Impact Study (EIS), including an Environmental Management Plan (EMP), for the proposed development. The EIS (MTE, 2023) provides recommendations for avoidance and mitigation measures to protect adjacent significant natural heritage features. This EMP has been prepared to complement the EIS and provide the mitigation and monitoring recommendations from the EIS (MTE, 2023) and Tree Preservation Report (MTE, 2022) in the approximate order to be completed.

Based on the analysis of the Subject Lands in the EIS (MTE, 2023), the significant features identified on or adjacent to the Subject Lands are:

- Wetlands
- Significant Woodland
- Valleyland (Tributary 12)
- Significant Wildlife Habitat (Terrestrial Crayfish SWH, adjacent unconfirmed Bat Maternity Roost SWH)
- Indirect Fish Habitat (downstream water contribution)
- Habitat of Threatened and Endangered Species (unconfirmed bat habitat in adjacent Community 6)
- Water Resource System

1.0 Pre-Construction

Pre-construction planning includes defining the project, identifying potential risks, and mitigating risks before development begins. The recommendations are to be completed prior to the initiation of construction activities.

Buffer Establishment

The proposed Development Plan provides adequate buffers and setbacks to adjacent natural heritage features [Figure 11; MTE, 2023] in accordance with the London Environmental Management Guidelines (2021) and taking into consideration the existing land use and feature

sensitivities. These buffers are outlined in Section 7.0 of the EIS (MTE, 2023), but will be restated here. Buffers are shown on Figure 12 of the EIS (MTE, 2022).

A 10 m naturalized buffer is recommended for the north adjacent Significant Woodland. This woodland (FOD7) includes Candidate Bat Maternity Roost SWH and potential habitat for Little Brown Myotis, Northern Myotis, and/or Tri-coloured Bat. The 10 m buffer meets the minimum width recommended in the 2007 EMGs and was supported by NRSI in their EIS (2021) for the north adjacent property, as well as in discussions with City Ecologist James MacKay.

Tree Protection Measures and Compensation

Recommendation 1.1:
Refer to the Tree Preservation Report (MTE, 2022) that identifies which individual trees are to be removed within the Subject Lands and recommends mitigation measures for protecting retained trees from damage during construction.

Recommendation 1.2:
Tree preservation should be revisited at the Site Plan stage when further development/site plan details can be provided to make final call on tree preservation efforts. Grading plans should be developed which respect the Critical Root Zone of any trees that could be preserved.

Recommendation 1.3:
Tree protection measures should be in accordance with Section 12 of the City of London Design Specifications & Requirements Manual (MTE, 2022).

Recommendation 1.4:
The 10 m buffer from the north adjacent Significant Woodland should be marked with tree preservation fencing prior to construction and should not be removed until construction is complete.

Recommendation 1.5:
The Tree Protection Zone (TPZ) shall be delineated according to the Tree Preservation Plan (TP1) by orange vinyl fencing installed according to City of London Standard Drawing TPP-1 Tree Preservation Details (MTE, 2022).

Recommendation 1.6:
Tree protection measures should be verified by an ISA Certified Arborist prior to any land clearing, demolition, excavation, construction, or grading operations within 30 m of the TPZ (MTE, 2022).

Recommendation 1.7:
Avoid vegetation clearing during migratory bird breeding season (April 1 to August 31) to ensure that no active nests are removed or disturbed, in accordance with the Migratory Birds Convention Act and/or Regulations under that Act. If works are proposed within the breeding season, the area should be checked for nesting birds by a qualified person prior to any vegetation removal. If nesting birds are present, works in the area should not proceed until after August 31 or until the nest has been confirmed inactive (e.g., young have fledged).

Recommendation 1.8:
Compensation for removal of trees within the Subject Lands, as guided by the Tree Preservation Report (MTE, 2022), should be provided in the naturalized corridor.

Other Design and Pre-Construction Considerations

Recommendation 1.9:
Exterior lighting within the development area should be fully shielded and pointed downward to minimize skyglow, glare, and unnecessary light trespass into the adjacent natural feature post-construction.

Recommendation 1.10:
During detailed design, utilize the Hydrogeological Assessment and water balance calculations to establish a water balance and quality control for the created wetlands to maintain long-term ecological function.

Recommendation 1.11:
A site-specific Hydrogeological Assessment is needed to determine surface and groundwater balances and show that these will be maintained after Tributary 12 is realigned.

Recommendation 1.12:
A detailed interim stormwater management plan is needed to guide the construction phase and protect the wetland features. Stormwater must be discharged away from existing surface water features and the adjacent Significant Woodland. This should be provided along with LID measures at detailed design.

Recommendation 1.13:
A Best Management Practice (BMP) and spill contingency plan (including a spill action response plan) should be in place for fuel handling, storage and onsite equipment maintenance activities to minimize the risk of contaminant releases as a result of the proposed construction activities. Contractors working at the site should ensure that construction equipment is in good working order. Equipment operators should have spill-prevention kits, where appropriate.

Recommendation 1.14:
Soil stockpiles should be established in locations where natural drainage is away from the adjacent Significant Woodland and downstream water system. No soil should be stockpiled in close proximity to the Wetlands. The stockpile locations should be determined at detailed design.

Recommendation 1.15:
A multi-barrier approach for sediment and erosion control should be used for this development. Prior to works on site, robust sediment and erosion control fencing should be installed around the development limits. The fence can act as a barrier to keep construction equipment and spoil away from the vegetation to remain and prevent erosion and sedimentation of the adjacent Significant Woodland and downstream water system.

Recommendation 1.16:
Sediment and erosion control fencing should be installed according to the City of London Design Specifications and Requirements Manual specifications (2019b) and The Erosion and Sediment Control Guide for Urban Construction (TRCA, 2019).

Recommendation 1.17:
Sediment and erosion control fencing should be inspected prior to construction to ensure it was installed correctly.

2.0 During Construction

These recommendations are to be conducted from initiation of construction activities until a specified build-out stage as determined in consultation with the City of London.

Recommendation 2.1:
Equipment should be cleaned prior to arrival on site including tires, undercarriage, and any part of the equipment that may transport invasive seeds to the site. Clean equipment protocols are provided by London's Invasive Plant Management Strategy (2017) and should be followed where appropriate.

Recommendation 2.2:
Removal of trees (>10 cm DBH) within the Subject Lands should occur between October 1 and March 31, outside of the active bat season.

Recommendation 2.3:
Implement additional recommended mitigation measures from the Hydrogeological Assessment (EXP, 2023) to avoid impacts to the quality and quantity of groundwater resources.

Recommendation 2.4:
Implement erosion and sediment control (ESC) measures during construction of the corridor and surrounding subdivision to mitigate potential erosion/sedimentation impacts to downstream fish habitat.

Recommendation 2.5:
No construction or storage of materials or equipment is permitted within the 10 m buffer for the north adjacent Significant Woodland buffer.

Recommendation 2.6:
Avoid vegetation clearing and site disturbance during migratory bird breeding season (April 1 to August 31) to ensure that no active nests are removed or disturbed, in accordance with the Migratory Birds Convention Act and/or Regulations under that Act. If works are proposed within the breeding season, the area should be checked for nesting birds by a qualified person prior to any vegetation removal or ground disturbance. If nesting birds are present, works in the area should not proceed until after August 31 or until the nest has been confirmed inactive (e.g., young have fledged).

Recommendation 2.7:
Plan major site grading activities to avoid breeding and migration periods of amphibians (generally April 1 to September 31). Site personnel should be advised to take particular care when working in this active period for wildlife and instructed how to respond appropriately to wildlife encounters.

Recommendation 2.8:
During construction, no equipment, materials or tools shall be stored within the TPZ. Tree protection fencing shall remain in place until all construction work is completed. The consultant shall be contacted should work within the TPZ be required for any reason during the development process (MTE, 2022).

Recommendation 2.9:
If pruning or excavations at the edge of the TPZ is required, refer to protocols provided in Sections 5.3 and 5.4 of the Tree Preservation Report (MTE, 2022).

Recommendation 2.10:
Any damage to trees to remain that may happen as a result of demolition or construction related operations shall be reported to the consultant as soon as possible so that appropriate treatments can be applied (MTE, 2022).

Recommendation 2.11:
Soil stockpiles should be in locations where natural drainage is away from the adjacent Significant Woodland and downstream water system. No soil should be stockpiled in the area of close proximity to the Wetlands. If this is not possible and there is a possibility of any stock pile slumping and moving toward the edge of these natural heritage features, the stockpiles should be protected with robust sediment and erosion control. Access to the stockpile should be confined to the up-gradient side.

Recommendation 2.12:
Roof runoff to bare ground can generate considerable sediment movement beyond the construction limits. Until the grounds have been vegetated and stable for housing and development adjacent to vegetation, roof leaders should be directed to the streets or nearby stabilized vegetated areas.

Recommendation 2.13:
During construction, the lands between the sediment and erosion control fencing should be maintained.

Recommendation 2.14:
Regular cleanup of the Subject Lands must be completed during construction and post-construction to ensure the adjacent natural heritage features are not degraded.

Recommendation 2.15:
Noise disturbance during construction should be limited to allowable hours per City of London By-law. Where possible, construction noise from heavy machinery should be avoided within 10 m of the north woodlands during the migratory bird breeding period, defined as April 1 to August 31, to avoid disturbance of birds nesting within or adjacent to the Subject Lands.

Recommendation 2.16:
Make workers aware of potential incidental encounters with wildlife and the necessary protections. If an animal enters the work site, work at that location will stop and the animal should be permitted to leave without being harassed. If there are repeat observations of wildlife in the work area, barrier fencing may be used to direct wildlife away from active construction and toward natural areas.

Recommendation 2.17:
No Bank Swallow [THR] were observed within or adjacent to the Subject Lands, however creation of suitable habitat (e.g., soil stockpiles) during construction should be avoided. Best management practices for deterring nesting during construction activities should be implemented (OMNRF, 2017). These measures should include stockpile slope management (i.e., grading stockpiles, eliminating vertical extraction faces, reducing slopes to 70 degrees or less) until at least July 15.

Corridor Habitat Creation Specific Recommendations

This section provides recommendations for the proposed integrated corridor and naturalized buffers. Section 7.3 of the EIS provides additional details on these habitat creation recommendations. A detailed Landscape Plan should be prepared for the corridor at detailed design.

Recommendation 2.18:
Provide a Landscape Plan for the corridor at detailed design to specify proposed native species plantings and targeted wetland and terrestrial communities. The Landscape Plan should incorporate the recommendations for wildlife habitat creation provided in the EIS (MTE, 2023).

Recommendation 2.19:
Create wetland habitat in the valley floodplain of the proposed integrated Tributary 12 corridor to compensate by at least 1:1 area for removal of Wetland communities 4b (MAM2), 5 (SWT2-2), and wetland inclusion A1a.

Recommendation 2.20:
Include wetland habitat suitable for Terrestrial Crayfish (e.g., wet meadow) and amphibian breeding (e.g., pools up to 1 m deep) within the corridor wetlands.

Recommendation 2.21:
Provide Terrestrial Crayfish habitat in the corridor. Groundwater monitoring by EXP suggests there is potential for shallow groundwater conditions near the north end of the proposed channel (H. Jaggard, personal communication, February 2, 2022). A Hydrogeological Assessment should confirm that the groundwater table will be high enough to provide suitable habitat.

Recommendation 2.22:
Create Barn Swallow nesting habitat within the proposed corridor. Guidelines for habitat creation are provided in the *Creating Nesting Habitat for Barn Swallow, Best Practices Technical Note Version 1.0* (OMNRF, 2016). Proposed nesting habitat should be incorporated into the corridor plan at detailed design.

Recommendation 2.23:
One rocket-style bat box should be installed in the north adjacent Significant Woodland buffer or within the proposed integrated corridor to compensate for removal of potential habitat. The locations of the bat box should be incorporated into the landscape plan and installation should be guided by a qualified biologist.

Recommendation 2.24:
Create fish habitat within the realigned Tributary 12. Consider incorporation of deeper refuge pools (0.5 m or greater), riffle features using logs or rocks, a variety of in-stream structures (e.g., boulders along edge), and sufficient shading with vegetation to create diverse aquatic habitat and support fish habitat.

Recommendation 2.25:
Incorporate water quality measures for inputs to the proposed corridor in order to prevent a significant decrease in downstream fish habitat.

Recommendation 2.26:
Replicate the hydrological function (surface runoff storage) of the wetlands to be removed through establishment of wetland pools and LID measures within the integrated corridor. Recommendations for LID measures and wetland creation are provided in the Hydrogeological Assessment.

Recommendation 2.27:
Installation of boundary markers (e.g., posts, bollards) is recommended for the boundary of the proposed future constructed valleyland corridor. Boundary markers can mark the edge of the valleyland to discourage entry by the public, and, unlike a chain link fence, allow unhindered passage of wildlife species.

Recommendation 2.28:
Installation of permanent fencing feature is recommended where any private lots back onto natural areas, the integrated corridor, or buffers. Consult with the City of London to determine the height and material of fencing required.

Monitoring Phase 1 - During Construction

The construction monitoring plan will monitor for construction-related impacts, document successes or deficiencies of the implemented mitigation measures and provide guidance on remedial actions for circumstances when mitigation is not successful [e.g. Erosion and Sedimentation Control (ESC) measures]. This plan should continue from clearing and grubbing through to building and corridor construction until grounds adjacent to natural features are vegetated and stabilized. Reports should be made available to the UTRCA and Planning and Economic Development Staff.

Recommendation 2.29:
Sediment and erosion control fencing should be inspected regularly during construction to ensure that the fencing is being maintained and functioning properly. Any issues that are identified should be resolved as quickly as possible, ideally the same day.

3.0 Post-Construction

These recommendations are to be carried out following construction until the end of the Assumption of Development Stage.

Recommendation 3.1:
Sediment and erosion control fencing should not be removed until adequate re-vegetation and site stabilization has occurred. Additional re-vegetation plantings and/or more time for vegetation to establish may be required; however, two growing seasons are typically sufficient to stabilize most sites.

Recommendation 3.2:
All disturbed areas should be re-seeded as soon as possible to maximize erosion protection and to minimize volunteer populations of invasive species which may spread to the adjacent feature.

Recommendation 3.3:
Provide homeowners with the “Living with Natural Areas” brochure published by UTRCA in 2005 [Appendix J]. This should help educate the future residents on appropriate ways to interact with natural areas and discourage damaging encroachment activities such as dumping landscape waste, using chemicals on lawns, mowing past residential boundaries, and trampling natural areas. Some studies show the public are more likely to avoid damaging activities (ex: littering, trampling plants, dumping landscape waste) if they are aware of the link between their actions and the subsequent negative impacts, and if they feel they are responsible for the stewardship of a natural area (Gamman et al., 1995; Johnson and Van de Kamp, 1996).

Recommendation 3.4:
Limit the use of commercial fertilizers and other chemical applications within the Subject Lands. Consideration may be given to using grass varieties which are heartier and require less extensive watering or fertilizers.

Recommendation 3.5:
Limit the use of salts or other additives for ice and snow control on the roadways.

Recommendation 3.6:
Tree tags shall be removed from any trees to remain within the Subject Lands when tree protection measures are removed (MTE, 2022).

Recommendation 3.7:
Naturalize the 10 m Significant Woodland buffer with a native woodland edge seed mix after construction is complete. Details should be provided on a Landscape Plan at detailed design.

Monitoring Phase 2 – Post-Construction

Long-term post-construction monitoring should evaluate the success of the proposed active naturalization efforts and planting compensation. Monitoring should be undertaken at Year 1 of corridor naturalization (e.g., plant warranty) to document survivorship or replacements, and at Year 3 to document plant establishment and growth. Remedial actions are triggered if effects exceed pre-determined thresholds (e.g., supplemental plantings if survival rates are low, invasive species management). Wildlife monitoring is also recommended in Years 1 and 3 to document use of the corridor by wildlife. Recommendations for monitoring are:

- Once the development is at 80% build-out, annual reporting on encroachment should be provided by the City of London for two years. Encroachment into the adjacent Significant Woodland and the created corridor (e.g., litter present in natural features, informal trail creation) should be monitored for two years and additional strategies should be implemented if required.
- Consistent with the documentation prepared in support of Application #160-19, monitoring of the implemented compensation plan (Tributary 12 realignment) should be undertaken post-construction of the naturalized corridor for a period of at least three (3) years. The UTRCA must be advised of any deficiencies or any mitigative measures undertaken to ensure compliance with the relocation plan.
- Complete wildlife monitoring at least in Years 1 and 3 following construction of the naturalized corridor to determine success of the habitat creation measures. Monitoring should include amphibian breeding surveys, a search for Barn Swallow nests, a visual search for Terrestrial Crayfish chimneys, and incidental wildlife observations. It can be re-evaluated in Year 3 based on monitoring results whether wildlife habitat creation was successful and if changes or additional monitoring is needed.
- Vegetation monitoring should be completed in Year 1 and 3 after planting to document compliance with the plans (e.g., the correct species and quantities were planted, tree protection measures were effective, effectiveness of invasive species management), and establishment of planted material. This should be in coordination with the assumption of the corridor lands by the City.
- Implement adaptive management strategies where needed, such as supplemental plantings, and/or control of non-native invasive species. Adaptive management may be triggered by poor survival of planted material (triggered at <80% survival), insufficient vegetation cover, and the presence of unacceptable non-native and invasive species.

This Environmental Management Plan has provided recommendations to protect the adjacent significant natural heritage features from both direct and indirect impacts, through avoidance, mitigation, management, and monitoring. Timelines (pre-, during, and post-construction) have

been outlined. Provided these recommendations are followed, it is our opinion that the proposed development will have no significant impacts on the adjacent natural heritage features.

Yours Truly,

MTE Consultants Inc.

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