Edge Valley Phase 2

Environmental Impact Study (EIS)

Project Location:

1782 Kilally Road
Part Lot 7, Concession 4
London, ON

Prepared for:

Drewlo Holdings
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1.0 Introduction

Drewlo Holdings Inc. (the 'Proponent) has initiated the Draft Plan Approval and Zoning By-Law Amendment approval process for a single family and medium density residential subdivision development (the 'Project') on a section of property located at 1782 Kilally Road, east of the Highbury Avenue and Kilally Road intersection in the City of London (the 'Subject Lands'). The property is approximately 36 ha and is located on Part Lot 7, Concession 4. The Subject Lands were the focus of study for the Environmental Impact Study (EIS), as well as desktop review in the 120 m Adjacent Lands.

The Draft Plan process has involved changes to the development proposal and discussions with UTRCA and the City of London. A history of the Subject Lands and planning process is provided in Section 1.4 below. Life science data collection within the Subject Lands has been ongoing by MTE since 2019 to 2021. This report compiles the data collection results for these years.

1.1 Report Objective

This report is an Environmental Impact Study (EIS) as requested by the City of London and UTRCA. The EIS 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 is also designed to provide a support document for additional approvals that may be required, including permit applications that will be submitted to the Upper Thames River Conservation Authority (UTRCA) in the future.

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 (Ministry of Municipal Affairs and Housing [MMAH], 2020), and Section 6 (Environmental Policies) of The London Plan (May 2021a).

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 the Subject Lands:

- Kilally South Area Plan (City of London Planning Division, 2003)
- Hydrogeological Assessment (EXP, 2022)
- Stormwater Management Report (MTE, 2022)
- Slope Stability Assessment (EXP, 2021)
- Upper Thames River Source Protection Area Assessment Report (Thames-Sydenham and Region Source Protection Committee, 2015)
- Kilally South Area Plan (City of London Planning Division, 2003)

1.4 Pre-Consultation and Site History

The Subject Lands have a long history of anthropogenic activity and disturbance. The site was formerly agricultural, and evidence of historic rural residences exists on site (ex: swimming pool, concrete foundations, telephone poles, demolition debris). The site has since been used for sand and gravel aggregate extraction activities. The cleared centre of the Subject Lands and the southeast corner were part of previous aggregate extraction. Other major areas of disturbance include the northwest side of the Subject Lands and the southeast area along Kilally Road where large amounts of fill have been deposited.

As well, this area previously underwent a Community Planning exercise (Killaly South Area Plan, 2003). Through that exercise the natural heritage features (Schedule B1, City of London Official Plan, Office Consolidation, 2006) and land use (Schedule A, City of London Official Plan Office Consolidation, 2006) were established. Phase 1 of the development block was initiated shortly after completion of the Community Plan process and is nearing full buildout. The Stormwater Management facility has been constructed and sized to incorporate Phase 1 as well as the remaining lands owned by the applicant (i.e. this Project and the lands south of Kilally Road between Webster and Sandford Street). Phase 2, the subject of this EIS, is the second phase of the development.

An Issues Summary Checklist Report was initially completed for the Subject Lands and sent to City of London Ecologist James MacKay on June 28, 2019. A Scoping Checklist was then finalized in December 2020 with James MacKay (London Ecologist Planner), Mike Corby (Planner), Sandy Levin (EEPAC), and Dave Hayman (MTE Ecologist Project Manager). The Scoping Checklist, dated December 2, 2020, is provided in Appendix A.

A Proposal Review Meeting was conducted on September 16, 2020. This meeting (summary minutes October 26 2020) provided comments from the City of London and Upper Thames Conservation Authority (UTRCA). Comments from both parties will be considered in this EIS report.

A site visit on March 19, 2021 was completed by MTE Plant and Wildlife Technician Will Huys to stake the wetland boundary and City of London Ecologist James MacKay reviewed and finalized the staked wetland boundary within the Environmentally Significant Area (ESA). The wetland boundary was officially surveyed April 26, 2021. A subsequent site visit was completed with Bruce Page (City of London) and Christine Creighton (UTRCA) in July 2021 to review the wetland boundary. This final revised wetland boundary will be used in this EIS.

2.0 Land Use Setting and Policy Overview

The Phase 2 Subject Lands [Figure 1] have been defined by the prior ESA boundary from the City of London Official Plan (Office Consolidation, 2015) and are the location of the field studies conducted for this EIS. It should be noted that the Subject Lands (25.5 ha) are not defined as the proposed development area. Field studies within the Subject Lands and background review within 120 m Adjacent Lands will help inform the development area later in the EIS. The full Legal Parcel owned by the proponent extends beyond the Subject Lands to the Thames River.

The Subject Lands are comprised of aggregate extraction areas and both cultural and natural/naturalizing vegetation communities [Figure 1]. In the London Plan, the ESA boundary was revised and now extends into the Subject Lands. It is this revised ESA boundary that is referenced in the remainder of this EIS.

The surrounding area is primarily residential to the west, with existing agricultural lands to the south where a separate future development has been proposed. Natural areas are located to the north and east of the Subject Lands associated with the North Thames River valley system.

Federal, provincial, and municipal legislation and policies, summarized in an overview below, were reviewed to inform the evaluation of significant natural heritage features on the Subject Lands.

2.1 The London Plan

The London Plan (2021a) 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 final phase of policy appeals was resolved through an Ontario Land Tribunal (OLT) decision on May 25, 2022 and the most updated version of the London Plan is referenced in this EIS. 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 identified and mapped on Map 5 of the London Plan (May 2021a). Development and site alteration is not permitted within or adjacent to Unevaluated Wetlands, Provincially Significant Wetlands, Significant Valleys and Woodlands, Habitat of Endangered or Threatened Species, Areas of Natural and Scientific Interest, and Environmentally Significant Areas unless evaluated by a professional and proven to have no negative impacts on the features or ecological functions.

2.1.1 Environmental Classifications

Map 5 of the London Plan (2021a) identifies the Kilally Forest ESA in the north Subject Lands and extending into the north part of the Legal Parcel [Figure 2]. The Kilally Forest ESA surrounds the Thames River (North Branch) and includes an associated Significant Valleyland. Two Unevaluated Wetlands and two Potential Naturalization Areas are within the Subject Lands. In addition, an Unevaluated Vegetation Patch that contains a small Unevaluated Wetland is shown on Map 5 in the east Adjacent Lands.

2.1.2 Place Type Designations

The Subject Lands are designated primarily as Neighbourhoods on Map 1 of the London Plan (2021a), with the Kilally Forest ESA to the north identified as Green Space [Figure 3]. A small area of the Subject Lands to the east that corresponds to the Unevaluated Vegetation Patch is identified as Environmental Review. The Adjacent Lands are similarly designated Neighbourhoods, Green Space, and Environmental Review.

2.2 City of London Zoning Bylaws

The Subject Lands are entirely zoned as Urban Reserve 4 (UR4), which is intended to protect large tracts of land from premature subdivision and development in order to provide for future comprehensive development of those lands (City of London Zoning By-Law Z.1, 2011) [Figure 4].

The valleyland area adjacent to the North Thames River is zoned as Open Space 5. These areas are the most restrictive open space zone variations and are applied to lands that have physical and/or environmental constraints to development (City of London Zoning By-Law Z.1, 2011).

The northwest Subject Lands also include an area zoned Open Space 1 that contains two ponds. The OS1 zone is typically applied to City and private parks with no or few structures (City of London Zoning By-Law Z.1, 2011).

Adjacent Lands to the west are zoned Residential (R) to the west, Urban Reserve (UR4 and UR1) to the south, and Urban Reserve 3 (UR3) and Open Space 5 (OS5) to the east [Figure 4].

2.3 Thames Valley Corridor Plan (2011)

The Thames Valley Corridor Plan aims to maintain and enhance the river valley system throughout the City of London. The Plan considers the ecological, economic, recreational, and tourism functions of the areas along the Thames Valley.

In accordance with this Plan, new urban development of greenfields is required to maintain a 100 m setback from the Thames River as measured from the normal bank or bank full height at the high water mark. These areas are classified as “Edge Zones”. The Legal Parcel for the proposed development extends north to the bank of the Thames River, so the 100 m Edge Zone setback will need to be considered.

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, wetlands and the surrounding area, and requires that landowners obtain written approval from the Authority prior to undertaking any site alteration or development within the regulation limit.

The Upper Thames River Conservation Authority (UTRCA) regulations fall across portions of the Subject Lands to the north [Figure 5]. The regulated areas are associated with wetland communities within the Kilally Forest ESA boundary and surrounding adjacent watercourses. UTRCA also shows part of the central Subject Lands as regulated for hazard considerations. There is a section of hazard lands identified on the regulation map that should be revised. This area is discussed more fully later in this EIS (Section 4.1.3).

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.

While not all features and functions of provincial interest noted above are provided on provincial maps, a review of the Make a Natural Heritage Map (NHIC, 2019) suggests there are no additional mapped features not already covered by the Official Plan Maps. However, the policies noted above are reviewed later in this report supported by site specific field work and consultation with the municipal review agencies.

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 Ontario Regulation 242/08.

A Preliminary Screening Report was submitted by MTE Consultants to the Ministry of the Environment, Conservation and Parks (MECP) on August 29, 2019, and additional mitigation details were provided to MECP by MTE on January 13, 2020. Approval from MECP stating no contraventions of the *Endangered Species Act, 2007* were anticipated if mitigation measures were followed was received in a letter dated February 28, 2020 [Appendix A].

2.7 Fisheries Act

There are no identified waterbodies within the Subject Lands, and the Thames River is located approximately 300 m north of the area considered for development. The federal *Fisheries Act, 1985* (amended 2019) will not directly apply.

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, as set out in Table 13 (Areas Requiring Environmental Study) of the London Plan (2021a).

The proponent is proposing a 239 lot residential subdivision within the Subject Lands. Based on the London Plan Maps 1, 5, and 6 (2021a), the triggers for the Environmental Impact Study (EIS) are as follows:

- Proposed development within 120 m of an Environmentally Significant Area (Kilally Forest ESA)
- Proposed development within 120 m of a Significant Valleyland
- Proposed development within 120 m of Unevaluated Wetlands
- Proposed development within 120 m of Unevaluated Vegetation Patches
- Proposed development within 30 m of a Significant Groundwater Recharge Area, and a Highly Vulnerable Aquifer

As well, application for a permit under the UTRCA Ontario Regulation 157/06 may require an EIS

- Subject Lands are within the UTRCA's regulation limits

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 (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. Areas outside the property limits were studied from the edge of the property or using satellite imagery.

4.1 Physical Setting

4.1.1 Physiography

The Subject Lands are underlain by Middle Devonian aged limestone, minor dolostone, and shale of the Dundee Formation (Ontario Geological Survey, 1991; MNDMNRF, 2017). The Dundee Formation is part of the Algonquin Arch (EXP, 2022). Bedrock is not exposed in the area of the Subject Lands.

Physiographic regional mapping indicates that the Subject Lands are situated within the Stratford Till Plain and are just northwest of the Caradoc Sand Plains and London Annex (Chapman and Putnam, 1984).

4.1.2 Soils

The Subject Lands are located in an area of glaciofluvial deposits based on OGSEarth surficial geology mapping from the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF, 2017). These deposits include river deposits and delta topset facies. In general, the valleylands of the Thames River to the north consist of modern alluvial deposits with clay, silt, sand, gravel, and possibly organic remains (MNDMNRF, 2017).

Site specific soil stratigraphy was investigated by EXP through the drilling of several boreholes and test pit excavations across the Subject Lands throughout 2019 to 2021 (EXP, 2022). In general, the surficial sands and gravel have been extracted from the site with the exception of the east boundary, along the valley slope and up close to Killaly Road. In the extraction areas, the surficial soils which remain are glacial tills and fill while in the unextracted areas there remains some surficial sands and gravel underlain by a silty sand/sand layer. A sand and gravel unit is located deep beneath the thick till at around elevation 242 m AMSL. This unit is not exposed on site (EXP, 2022). More detailed stratigraphy is provided in the Hydrogeological Assessment (EXP, 2022).

4.1.3 Topography

The topography of the Subject Lands varies considerably due to the site disturbance from aggregate extraction; the site includes a series of depressions and large piles of rock and soil. In general, the topography and drainage slopes to the north towards the ESA and the Thames River (EXP, 2022). The east of the Subject Lands slopes more to the north, while the west slopes more to the west (EXP, 2022). The hazard area noted on Figure 5 is not apparent on site other than in the area of the former pool. This feature does not reflect natural hazards and should be revised on the regulation map as noted on Figure 5.

4.1.4 Surface Water Features

The Subject Lands are located within the Central London Subwatershed (City of London, 2021a). The Thames River is, on average, 200 m to the north of the Subject Lands.

Several wetland pockets are present within the Subject Lands, as well as small pools of water accumulating in low areas within the extraction area. The surface water features in the Subject Lands are not connected to the Thames and are largely a result of runoff and pooling from the aggregate activities. EXP installed several piezometers in areas of surface water within the Subject

Lands between 2019 and 2020 (2022). Surface water levels are discussed in the context of vegetation communities in Section 4.2.2 of this EIS.

4.1.5 Hydrogeology

The Subject Lands are located in the Upper Thames River Source Protection Area. According to the Thames-Sydenham Source Protection Plan (TSSPP), the Subject Lands are located in a Significant Groundwater Recharge Area (SGRA), with a Highly Vulnerable Aquifer (HVA) in the north Adjacent Lands (TSRSPC, 2015). The Legal Parcel and surrounding lands are identified in the TSSPP as a moderate and low threat policy area.

Based on field investigations by EXP, shallow groundwater flow in the glacial till is north-northwest across the Subject Lands (2022). Wetland pockets that have formed on the tableland of the Subject Lands following extraction are fed by surface runoff and pooling and are dry in the summer months.

A groundwater seepage area (at elevation 254.99 m AMSL) is located in the northeast corner of the Subject Lands at the ESA interface. At this location, the silty sand/sand shallow aquifer layer daylights at the slope interface. However, no other seeps were observed along the valley slope suggesting the bulk of the seepage supply originates east of the Subject Lands. Further details on groundwater elevations, hydraulic conductivity, and other hydrogeological considerations are provided in the Hydrogeological Assessment (EXP, 2022).

4.2 Biological Setting

Life science data was collected within the Subject Lands and Adjacent Lands within the Legal Parcel between 2019 and 2021. This EIS will utilize the data collected during this period. This section summarizes the background review of the Subject Lands and 120 m Adjacent Lands, data collection methods, and the results of field investigations.

4.2.1 Records Review

4.2.1.1 Designated Natural Heritage Features

The Land Information Ontario (LIO) mapping (MNRF, 2021), Natural Heritage Information Centre (NHIC) online database (2021), and London Plan Map 5 were reviewed for natural heritage features in and adjacent to the Subject Lands.

A review of the LIO mapping identifies areas of Woodland within the Subject Lands and adjacent areas associated, in part, with the Kilally Woods ESA boundary and other identified natural features. No Areas of Natural and Scientific Interest (ANSI) are located within 120 m of the Subject Lands.

4.2.1.2 Historical Air Photo

Historically, the site was farmed and had limited wooded areas and almost no wetlands evident based on a review of a 1954 air photo [Appendix B]. Aggregate extraction has occurred since that time. The formation of wetlands on site due to pooling water is also apparent between 2000 and 2001 on historical air photos [Appendix B].

4.2.1.3 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* (2007). Only Protected Species receive protection for individuals or habitat 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 the Ontario Natural Heritage Information Centre (NHIC), Ontario Breeding Bird Atlas (OBBA), Ontario Reptile and Amphibian Atlas database, and Citizen Science sources (iNaturalist and eBird) identified several Protected Species and SOCC as potentially present in the area of the Subject Lands. The areas included in the background review vary, including 10 km Atlas squares (OBBA and Ontario Reptile/Amphibian Atlas), a 1 km Atlas square (NHIC), and the 120 m Adjacent Lands (Citizen Science sources). 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. The observation dates are provided for each species where possible. These sources display data for a broad area and therefore provide only a general potential for species presence on or near the Subject Lands.

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

Common Name	Scientific Name	SARO Status	SARA Status	Date Observed (If Known)	Source
Queensnake	*Regina septemvittata*	END	END	-	NHIC, 2022
Spiny Softshell		END	END	-	NHIC, 2022
Butternut	*Juglans cinerea*	END	END	-	NHIC, 2022
Bank Swallow	*Riparia riparia*	THR	THR	2021	eBird, 2021
Barn Swallow	*Hirundo rustica*	THR	THR	2021	eBird, 2021
Eastern Meadowlark	*Sturnella magna*	THR	THR	2001-2005, 2021	NHIC, 2022; Birds Canada, 2005; Ontario Nature, 2021
Chimney Swift	*Chaetura pelagica*	THR	THR	2001-2005	Birds Canada, 2005
Snapping Turtle	*Chelydra serpentina*	SC	SC	-	NHIC, 2022
Eastern Wood-pewee	*Contopus virens*	SC	SC	2021	eBird, 2021
Monarch	*Danaus plexippus*	SC	SC	2021	Ontario Nature, 2021
Northern Map Turtle	*Graptemys geographica*	SC	SC	-	NHIC, 2022
Green Dragon	*Arisaema dracontium*	SC	SC	-	NHIC, 2022
Red-headed Woodpecker	*Melanerpes erythrocephalus*	SC	END	2001-2005	Birds Canada, 2005

In addition to the above list, there are a number of other species that can be commonly found in the area but, while protected under the ESAct, are not always listed in the database and information sources. These additional species to consider include bat species (Little Brown Myotis [END], Northern Myotis [END], Tri-coloured Bat [END], Eastern Small-footed Myotis [END]), and Kentucky Coffee-tree [THR].

Targeted surveys or habitat assessments for these Protected Species and SOCC were 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.

4.2.2 Ecological Land Classification

The vegetation communities within the Subject Lands were assessed by MTE Plant and Wildlife Technician Will Huys, certified to conduct Ecological Land Classification (ELC) in Southern Ontario, on May 8, June 3, June 20, and August 20, 2019 [Figure 6]. Protocols outlined in the ELC System for Southern Ontario were used (Lee et al., 1998). ELC information sheets are provided in Appendix C. Provincial significance of vegetation communities is based on the rankings assigned by the NHIC (2020). All communities listed in Table 2 are secure in Ontario. Area measurements are based on interpretation of aerial photos.

Table 2: Ecological Land Classifications for the Subject Lands

Polygon	ELC Code	Description	S-rank	Area (ha) In the Subject Lands
Wetland Communities				
3a	SWT2-2	Willow Mineral Thicket Swamp	N/A	0.30
3b	SWT2-2	Willow Mineral Thicket Swamp	N/A	0.16
5	SWT2-9/MAM2	Gray Dogwood Mineral Thicket Swamp/Mineral Meadow Marsh	N/A	2.45*
6	SWT2-2	Willow Mineral Thicket Swamp	N/A	0.69
Cultural Communities				
1a	CUM1	Mineral Cultural Meadow (grass dominant)	N/A	6. 93
1b	CUM1	Mineral Cultural Meadow (forb dominant)	N/A	1.42
2	CUW1	Mineral Cultural Woodland	N/A	1.10*
4	CUT1	Mineral Cultural Thicket	N/A	1.75
7	CUM1	Mineral Cultural Meadow (*Phragmites* dominant)	N/A	0.37
E	E	Extraction Area	N/A	11.32

* Measured area within the Subject Lands only.

The majority of the Subject Lands is extracted area (E) that has been altered through aggregate activities under the approvals of a site alteration permit issued by the City of London. Approximately 11.32 ha of the Subject Lands are areas of extraction activities that have no vegetation community features. A few small areas of surface water have accumulated due to the altered topography on site. An area in the centre of the extraction area had surface water most of the year based on piezometer monitoring by EXP (2022).

Community 1 is a Mineral Cultural Meadow (CUM1) Ecosite that is subdivided into Communities 1a and 1b. This community was split because the plant species between both sub-communities is generally the same except for the dominant ground cover types. The eastern portion of Community 1a is a former farmyard with remaining concrete foundations, old telephone poles, and piles of demolition debris. The canopy of Community 1a includes some tree species near Kilally Road including Sugar Maple, Black Walnut, and White Spruce. The understorey of both communities are comprised of White Mulberry, Staghorn Sumac, and Tatarian Honeysuckle. The ground layer of this community is primarily Smooth Brome and Orchard Grass. Community 1b is a forb-dominated community which is regenerating from recent disturbance and includes a crescent-shaped spoil pile near Kilally Road. The ground layer of this community is composed of Canada Goldenrod, Bladder Campion, Common Milkweed, and Red Clover.

Community 2 is located at the north end of the Subject Lands and is classified as a 1.10 ha (on property) Mineral Cultural Woodland that is nearly a monoculture of Manitoba Maple in the east half and Norway Maple, Eastern Cottonwood, Scots Pine and Manitoba Maple in the west half where a residence was previously located. The remnants of a swimming pool and a concrete foundation

from this residence were present until at least 2020. The pool and foundation have since been removed with the debris being piled in that area based on field observations made in April 2022. Community 2 extends into the neighbouring property to the east, but was not investigated off-property. A 1954 air photo [Appendix B] shows that Community 2 did not exist within the Subject Lands at that time.

Community 3 is a Willow Mineral Thicket Swamp (SWT2-2) that is subdivided into Community 3a (0.30 ha) and 3b (0.16 ha). These features are low-lying depressions located within Community 1a that have succeeded to Willow Mineral Thicket Swamp inclusions. Dominant species include White Willow and Sandbar Willow. Surface water was monitored in these communities by EXP between November 2020 and April 2022. Community 3 had water above surface level a few times over the monitoring period, particularly from November 2020 to May 2021. The groundwater elevations in 3b decreased significantly in May 2021 and have been low since then (EXP, 2022).

Community 4 (1.75 ha) is classified as a Mineral Cultural Thicket (CUT1). This community is a cultural thicket that has established on un-graded spoil piles associated with the adjacent development at the southwest end of the Subject Lands. These stockpiles were to be seeded as per the Subdivision Agreement for the west adjacent development to mitigate erosion and sediment control concerns. Dominant species within this community include Trembling Aspen, Manitoba Maple, and Black Locust in the canopy layer and Sandbar Willow and Tatarian Honeysuckle in the understorey.

Community 5 (2.45 ha) is classified as a Gray Dogwood Mineral Thicket Swamp/Mineral Meadow Marsh (SWT2-9/MAM2). Community 5 is within the Kilally Forest ESA in adjacent lands to the north, except for a small portion that extends into the Subject Lands along the northern boundary. The limits of this wetland feature have been staked in the field with City staff (March 2021) and the current boundary is reflective of what has been agreed upon. Dominant species include Gray Dogwood, Nannyberry, *Phragmites*, Purple Loosestrife and Spotted Joe-pye Weed. Areas dominated by invasive *Phragmites* (approximately 0.6 ha of this community within the Subject Lands) have been identified through air photo interpretation on Figure 6. Piezometer monitoring in the east of this community near the north edge of Community 2 found that water levels were above surface level most of the year and were highest in spring (EXP, 2022).

Community 6 (0.69 ha) is classified as a Willow Mineral Thicket Swamp (SWT2-2). This is a thicket swamp that has established in a wet area that developed at the toe of the un-graded spoil piles (Community 4). Dominant species within the community include Eastern Cottonwood, White Willow, and Sandbar Willow. This community was created due to site disturbance and was heavily impacted by the surrounding aggregate activities. EXP confirmed surface water is seasonally present in this community (2022).

Community 7 (0.37 ha) is classified as a Mineral Cultural Meadow (CUM1). This community is a monoculture of non-native *Phragmites* that has colonized a slope created from grading of fill.

The lands surrounding the Subject Lands include residential housing to the west and agriculture to the south. An area heavily disturbed by vehicle traffic is also south of Kilally Road based on aerial photos. Adjacent Lands to the east include several developed buildings interspersed with meadow and forest communities and two ponds. The north Adjacent Lands appear to be a continuation of Community 5 (SWT2-2/MAM2) and some forested communities (FO) close to the Thames River.

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, 2021a). An assessment of candidate SWH was completed for the Subject Lands using a combination of desktop analysis and field observations, and is provided in Appendix D.

Candidate Seasonal Concentrations of Animals
Raptor Wintering Area – Subject Lands (CUM1, CUT1, CUW1) and Adjacent Lands (FO)
Bat Maternity Colonies – Adjacent Lands (forested Ecosites)
Reptile Hibernaculum – Subject Lands (Community 1a, 1b, 2, 4, and 7) and Adjacent Lands

Candidate Specialized Habitats of Wildlife Considered SWH
Amphibian Breeding Habitat (Wetlands) – Community 3a, 3b, 5, and 6

Candidate Habitats for Species of Conservation Concern Considered SWH
Marsh Breeding Bird Habitat – Community 5 (SWT2-2/MAM2)
Special Concern and Rare Wildlife Species – Subject Lands and 120 m Adjacent Lands

Candidate features were further evaluated using the results of targeted 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.

4.2.4 Floral Inventory

MTE Plant and Wildlife Technician Will Huys completed floral site investigations on May 8, June 3, June 20, and August 20, 2019 within the Subject Lands. Full floral inventory lists are provided in Appendix E. No floral SOCC or protected species were identified during site investigations.

4.2.4.1 Floristic Quality Analysis

Based on the floral inventories, the vegetation communities 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. 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 3 have been rounded to one decimal place.

Table 3: Southern Ontario Floral Inventory Analysis (SOFIA) Results

V	Mean CoC	FQI	% Native Species	Comments
Community 1a and 1b Mineral Cultural Meadow (grass dominant) and Mineral Cultural Meadow (forb dominant)	0.75	5.41	29%	• Poor floristic quality, low significance from a natural quality perspective
Community 2 Mineral Cultural Woodland	1.78	10.67	50%	• Poor floristic quality, low significance from a natural quality perspective
Community 3a and 3b Willow Mineral Thicket Swamp	1.76	10.69	70%	• Poor floristic quality, low significance from a natural quality perspective
Community 4 Mineral Cultural Thicket	0.46	2.25	42%	• Poor floristic quality, low significance from a natural quality perspective
Community 5 Gray Dogwood Mineral Thicket Swamp/Mineral Meadow Marsh	2.61	13.80	71%	• Poor floristic quality, low significance from a natural quality perspective
Community 6 Willow Mineral Thicket Swamp	1.77	9.88	65%	• Poor floristic quality, low significance from a natural quality perspective
Community 7 Mineral Cultural Meadow (*Phragmites* dominant)	-	-	-	• Community is a monoculture of non-native *Phragmites*

4.2.1 Faunal Site Investigations

Breeding bird surveys, amphibian breeding surveys, bat maternity roost surveys reptile basking surveys, and general observations of habitat suitability for Protected Species were completed on the Subject Lands. Survey stations and key field findings are shown on Figure 7.

4.2.5.1 Avifauna

Will Huys (MTE Consultants staff) conducted breeding bird surveys on June 3 and June 20, 2019 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 communities within the Subject Lands. The number of individuals and the highest level of breeding evidence were recorded for all avian species observed in each community. It should be noted that Communities 1 and 3 were combined during the first visit. A summary of breeding bird survey results is provided in Appendix F. A Wild Turkey, a pair of Mallards (near the removed swimming pool), and a Red-tailed Hawk (flying over) were incidentally observed on April 12, 2022.

Bank Swallows were observed foraging on site during the June 3 and June 20, 2019 breeding bird studies. Three nest holes were observed in an extracted vertical gravel face on the east side of the driveway near Kilally Road (Community 2). Successful nesting was not observed. During a subsequent site visit on August 20, 2019 the nest holes were observed to be inactive (one was collapsed, one was covered in spider webs, and one was not discernable). After confirmation of inactivity, the proponent regraded the slopes to discourage future nesting. The area was re-checked on January 9, 2020 to confirm grading had occurred and, in consultation with MECP, the potential habitat was confirmed to no longer be present.

On June 1, 2022 approximately 20 nest holes with actively nesting Bank Swallows were observed in the centre of the Subject Lands in the side of a small soil stockpile [Figure 7]. These nest holes were not observed in 2019, 2020, or April/May 2022 during site investigations, confirming this in the first year Bank Swallows are nesting in this soil pile.

No other avian species of provincial interest were observed within the Subject Lands. No observed birds are Species of Continental Importance (Partner's in Flight, 2016), but several Partners in Flight (PIF) species of importance were identified within the Subject Lands. PIF species of importance likely breeding within the Subject Lands include Eastern Kingbird (3 fledged young in

Community 2), Field Sparrow (Community 1), and Rose-breasted Grosbeak (2 fledged young in Community 2). The most common species observed in 2019 were Killdeer, American Robin, Song Sparrow, Red-winged Blackbird, and American Goldfinch.

4.2.5.2 Amphibians

Frog surveys were also completed by MTE in May and June 2021, missing the early spring. As a result, the site was re-surveyed in 2022 for a complete set of three surveys, and the stations were distributed to more effectively cover the Subject Lands.

MTE staff completed amphibian breeding surveys on April 12, May 5, and June 1, 2022 guided by the Marsh Monitoring Program (MMP) protocol (BSC, 2009). A summary of observations is provided in Table 4, below, where Call Code is provided along with the estimated number of individuals in brackets. Complete field data are provided in Appendix G and station locations are shown on Figure 7.

Table 4: Amphibian Call Count Code Results

Species	Station 1 (2022) – Community 6			Station 2 (2022) – Communities 3a/3b			Station 3 (2022) – Community 2 & ponded water		
	April	May	June	April	May	June	April	May	June
Spring Peeper	1(7)	2(~14)						1(2) far off to the north	
Gray Treefrog			1(2)			1(3)			1(3)
American Toad		1(3)							
Chorus Frog	1(1)								

Seven Spring Peepers and one Chorus Frog were heard from Community 6 in April, and approximately 14 (Call Code 2) Spring Peepers and three American Toads were heard from this community in May.

No amphibians were heard from Communities 3a or 3b in April or May. Three Gray Treefrogs were heard from the direction of 3b in June.

One American Toad was heard just west of Station 3 from a small area of pooled water in the aggregate extraction area in April and two Spring Peepers were heard from east Community 5 or beyond in May. Three Gray Treefrogs were heard from Community 2 in June, with two other Gray Treefrogs heard from east Adjacent Lands and farther northwest.

Although not heard calling, a Green Frog was observed along the gravel roadway through the site near Community 1b on June 1, 2022.

4.2.5.3 Bats

A bat habitat survey was conducted by MTE Ecologist Laura McLennan on April 8, 2019 within the Subject Lands. The survey was guided by MECP protocols (“Treed Habitats – Maternity Roost Surveys”, 2021) and MNRF survey guidelines (“Survey Protocols for Species at Risk Bats within Treed Habitats”, 2017). Four candidate maternity trees (i.e. trees with cracked/peeling bark, holes, etc.) were identified that may be suitable roosting habitat for Little Brown Myotis [END], Northern Myotis [END], or Tri-coloured Bat [END]. These trees were located in Community 2, Community 1a, and at the boundary of the extraction area and Kilally Road. These are not suitable ELC ecosites for bat maternity roost SWH. The candidate bat tree locations are shown on Figure 7 and field sheets are provided in Appendix H.

Eight observations were recorded of individual bats flying over Community 6 from the south to the north about 30 minutes past sunset during an amphibian survey on May 5, 2022.

4.2.5.4 Mammal Burrows/Underground Access

Three mammal burrows or underground access points were observed within the Subject Lands during field investigations [Figure 7]. One burrow was located in Community 1a in the east near the debris piles. Two underground access points were found in the area of the old swimming pool and concrete foundation, but these are no longer present.

4.2.5.5 Reptiles

Eastern Hog-nosed Snake [THR] was identified as potentially present in the general area of the Subject Lands by a 2013 observation in the Ontario Reptile and Amphibian Atlas (10 km atlas square incudes the Subject Lands). No evidence of this species was observed during site investigations, and Eastern Hog-nosed Snake is generally not found within the London City boundaries. Based on discussions with MECP as part of this review process, the tablelands would be considered movement habitat at best. Therefore, although unlikely, the unmaintained tableland sections of the Subject Lands would be capable of providing marginal movement habitat for Eastern Hog-nosed Snakes if they were present.

Targeted reptile basking investigations were initially conducted April 30 and May 2, 2019. The weather was cloudy and cool (8°C) during the preliminary reptile survey, however conditions were suitable (sunny, 13°C to 18°C) during the May visit (OMNRF, 2016). The investigator targeted the old foundation and old swimming pool on site. No snakes or turtles were observed on either date. The main basking survey location in 2019 is shown on Figure 7.

A targeted snake emergence surveys was completed in 2022 on April 12, 2022. The surveys targeted the debris piles and old foundations in the east. The swimming pool and main house foundation were removed prior to this survey. Three juvenile Dekay's Brownsnakes were observed under old carpeting material near the east foundation/debris piles on April 12, 2022.

Field sheets for 2019 and 2022 snake surveys are provided in Appendix I.

4.2.5.6 Terrestrial Crayfish

There were no terrestrial crayfish burrows observed within the Subject Lands during any site investigations in 2019, 2020, or 2021.

4.2.5.7 Aquatic

The Thames River is adjacent to the Legal Parcel but is outside of the Subject Lands. There are no additional aquatic habitat features that have not already been discussed (wetlands, old swimming pool). UTRCA confirmed in the Scoping Checklist (December 2020) that aquatic surveys were not required for this EIS.

4.2.5.8 Incidental Observations

Several common mammal species were observed within and adjacent to the Subject Lands including Gray Squirrel, Eastern Chipmunk, and Eastern Cottontail. A White-tailed Deer was observed on site as well April 12, 2022 along with a set of dropped antlers. Other observations include several common butterfly species, dragonfly species, and Monarchs during the 2019-2020 life science surveys.

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 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 28, 2021a),
- the City of London Environmental Management Guidelines (2021b),
- 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. Provincial policy is reviewed first, followed by City of London and UTRCA policies. Note, although this project was initiated and scoped prior to the adoption of the 2021 City of London Environmental Management Guidelines (EMG), features have been evaluated using criteria in the 2021 EMGs.

5.1 Provincial Policy

5.1.1 Provincially Significant Wetlands

No Provincially Significant Wetlands are identified within or adjacent to the Subject Lands. Unevaluated Wetlands will be discussed under municipal policy.

5.1.2 Provincially Significant Woodlands

Other than the woodland component of the Kilally Forest ESA identified within and adjacent to the Legal Parcel, no Significant Woodlands are identified within or adjacent to the Subject Lands on Map 5 of the London Plan (2021a). The ESA and their woodland components are discussed further under Municipal Policy (Section 5.2).

5.1.3 Provincially Significant Valleylands

A Significant Valleyland, associated with the ESA and the Thames River to the north, is identified within the Legal Parcel, north of the Subject Lands (London Plan, 2021a).

5.1.4 Significant Wildlife Habitat

Candidate significant wildlife habitat (SWH) is based on ELC communities that were identified in Section 4.3.1. 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). Candidate SWH identified on or adjacent to the Subject Lands is assessed below.

Raptor Wintering Area

A combination of forest and fields >20 ha is present within/adjacent to the Legal Parcel (including lands to the north and east). The open meadow habitats within the Legal Parcel are largely extractive (E) and have been altered (approved site works), with the remainder of open areas being meadow habitat. These areas are not extensive enough for Northern Harrier, Rough-legged Hawk, American Kestrel, or Short-eared Owl. No raptors were observed within the Subject Lands during the completed bird surveys in 2019 and one Red-tailed Hawk was observed flying over the Subject Lands in April 2022.

Less disturbed open/meadow habitat is present along Kilally Road to the east. Surveys were not completed through the north and east adjacent forest communities to confirm raptors are absent.

Not SWH – Confirmed Not Significant (Subject Lands)

Candidate SWH – Unconfirmed (Adjacent Lands)

Bat Maternity Colonies

The wooded areas to the north and east were not investigated as they are outside the Subject Lands to the north and outside the property boundary to the east, however suitable forested habitat is present. The potential bat maternity roosts did not meet SWH criteria within the Subject Lands based on maternity roost surveys [Appendix C].

Not SWH – Confirmed Not Significant (Subject Lands)

Candidate SWH – Unconfirmed (Adjacent Lands)

Reptile Hibernaculum

Three mammal burrows were identified within the Subject Lands: two by the house debris and one in the east of Community 1a [Figure 7]. An abandoned swimming pool with cracked cement, anthropogenic debris piles, and concrete foundations of old residential houses were also identified as potential hibernacula in 2019. The former swimming pool and foundation have since been removed. Targeted snake emergence surveys were completed on suitably warm and sunny days within the Subject Lands as discussed in Section 4.2.5.5. No snakes were identified during the 2019 surveys, however three juvenile Dekay's Brownsnakes were found under debris near the east debris piles in April 2022. Congregations of five individuals of one species or individuals of two or more species were not observed, therefore reptile hibernaculum SWH is not confirmed to exist within the Subject Lands.

The Adjacent Lands were not investigated for reptile hibernacula to confirm none are present. Community 5 to the north is likely too wet for a reptile hibernaculum, but hibernacula could exist to the east or farther north.

Not SWH – Confirmed Not Significant (Subject Lands)

Candidate SWH – Unconfirmed (Adjacent Lands)

Amphibian Breeding Habitat (Wetlands)

Amphibian breeding surveys were completed on May 25, and June 30, 2020, and April 12, 2022 guided by the Marsh Monitoring Program (MMP) protocol (BSC, 2009). Sufficient calling codes for significance were not identified.

Not SWH – Confirmed Not Significant (Subject Lands)

Amphibian Breeding (Woodlands)

The adjacent lands to the north (ESA) and east contain forested habitat based on aerial photos, and these woodlands may contain amphibian breeding habitat. However, amphibian breeding surveys completed in 2020 and 2022 did not identify sufficient numbers of breeding amphibians within the ESA or east woodlands to qualify as SWH.

Not SWH – Confirmed Not Significant (Adjacent Lands – ESA, east woodlands)

Marsh Breeding Bird Habitat

Breeding bird surveys completed within the Subject Lands in 2019 confirm that the defining criteria for significance are not met.

Not SWH - Confirmed Not Significant (Subject Lands and Adjacent Lands)

Special Concern and Rare Wildlife Species

NHIC and citizen science background sources identified several Special Concern or provincially rare species as potentially being present within the Subject Lands or Adjacent Lands. The Subject Lands and Adjacent Lands were searched for SOCC, including those listed in Table 1. No SOCC or provincially rare species were identified within the Subject Lands during site investigations.

Not SWH – Confirmed Not Significant (Subject Lands)

Candidate SWH – Unconfirmed (Adjacent Lands)

5.1.5 Areas of Natural and Scientific Interest

There are no ANSI's within or adjacent to the Subject Lands.

5.1.6 Fish Habitat

Detailed scale fish habitat considers fish habitat within the Subject Lands. There is no suitable habitat for fish within the Subject Lands.

Broad scale fish habitat considers downstream fisheries. The Thames River is located north of the Subject Lands and includes fish habitat.

5.1.7 Habitat of Endangered or Threatened Species

No floral species protected under the *Endangered Species Act, 2007* were identified within the Subject Lands during site investigations.

Bank Swallow nest holes and foraging individuals were identified within the Subject Lands in June 2022. Approximately 20 nest holes were located in a small soil pile in the spring of 2022 and were observed being used by multiple Bank Swallows. Breeding habitat for this species will need to be considered in this EIS.

Four candidate bat maternity roost trees were identified within the Subject Lands. These trees could potentially support maternity roosting of Little Brown Myotis [END], Northern Myotis [END], or Tri-colored Bat [END]. Additional candidate maternity roost trees may be present in the forested communities to the north or east, but the Adjacent Lands were not investigated in the field.

Potential movement habitat for Eastern Hog-nosed Snake [THR] likely does not exist within the tablelands of the Subject Lands, based on discussions with MECP, including the lack of recent records in the London region, the heavy disturbance of the tablelands from aggregate extraction and lack of evidence of use. Suitable habitat for Eastern Hog-nose Snake, if nearby, is more likely in the wetland, woodlands, and river system to the north (within the ESA).

MECP previously confirmed the proposed development is unlikely to contravene the *ESAct, 2007* if appropriate mitigation measures are provided [Appendix A]. Due to the more recent Bank Swallow

observations MECP has been contacted for updated guidance, and this will be discussed in the context of mitigation measures in Section 7.0.

5.2 Municipal Policy

The municipal Natural Heritage policy considerations are based on the London Plan, May 28 2021, 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)

As discussed in Section 5.1.1, there are no Provincially Significant Wetlands identified within or adjacent to the Subject Lands on Map 5 of the London Plan (2021a).

There are two Unevaluated Wetlands identified on Map 5 of the London Plan within the Subject Lands, and another is located approximately 80 m to the east. The wetland features within the Subject Lands (Communities 3a, 3b, and 6) were delineated based on field investigations and air photo interpretation. Communities 3a and 3b are small, do not contain significant habitat, and are in a heavily disturbed area. Inclusions 3a/3b are dry through late spring to fall and no frogs were heard from these communities. Community 6 (SWT2-2), while also disturbed, does support frog breeding habitat (not SWH) and contains water throughout the spring. Since these wetlands are small, have limited biological value, and have been created as a result of low spots in the aggregate extraction activities on site, a full OWES assessment was not completed. Inclusions 3a and 3b are of limited ecological value and therefore the focus of impact management will be on Community 6 within the Subject Lands. This will be further discussed in Section 7.1 in the context of the development.

Community 5 (SWT2-9/MAM2) was not identified on Map 5 of the London Plan, however it was identified during MTE field investigations in the north Subject Lands. This Unevaluated Wetland is already protected within the Kilally Woods ESA, so a full OWES evaluation was not completed. It should be noted a large portion of the edge of this community is dominated by invasive *Phragmites* [Figure 6], possibly due to water fluctuations and disturbance from the adjacent aggregate activities on site.

5.2.2 Significant Woodlands and Woodlands (1337-1343)

As discussed in Section 5.1.2, there are no Significant Woodlands or Woodlands within or adjacent to the Subject Lands identified on Map 5 of the London Plan (2021). However, the adjacent features (ESA and unevaluated vegetation patch) are discussed later in this section.

5.2.3 Significant Valleylands and Valleylands (1344-1351)

As discussed in Section 5.1.3, a Significant Valleyland is identified on Map 5 within the Thames River corridor, north of the Subject Lands within the Legal Parcel.

5.2.4 Significant Wildlife Habitat (1352-1355)

An assessment of candidate and confirmed SWH as determined by the provincial Ecoregion 7E Criteria Schedule is provided in Section 5.1.4. Additional SWH defined in the London Plan are described below.

As per Policy 1354 of the London Plan (2021), under-represented habitat types in the City of London should be considered as candidate SWH and assessed following the processes outlined in the Natural Heritage Reference Manual (MNRF, 2010). The NHRM Section 9.3 (Identification) notes that where other natural heritage features and areas have been identified, a proponent may not have to identify SWH provided the feature is already protected by Official Plan policies that ensure there will be no negative impacts on the feature and its ecological functions (including SWH functions).

Under-represented habitat types listed by the City of London (marshes, tall grass prairie and savannahs, bogs, fens, bluffs, shallow aquatic, and open aquatic types) were not identified within the Subject Lands.

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

As discussed in Section 5.1.5, there are no ANSI's within or adjacent to the Subject Lands.

5.2.6 Fish Habitat (1323-1324)

As noted in Section 5.1.6, there is no suitable fish habitat within the Subject Lands. Suitable fish habitat is present within the Thames River to the north of the Subject Lands, but this does not require consideration in this report.

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

Refer to Section 5.1.7 for discussion of Endangered and Threatened Species Habitat. Marginal habitat for Little Brown Myotis [END], Northern Myotis [END], Tri-colored Bat [END] may be present within the Subject Lands and active Bank Swallow nests are present in a soil stockpile in the central extraction area. Although unlikely to be present, mitigation measures for incidental encounters with Eastern Hog-nosed Snake [THR] will also be provided.

5.2.8 Water Resource Systems (1361-1366)

The Thames-Sydenham and Region Source Protection Committee and Map 6 of the London Plan indicates the Subject Lands are within a Significant Groundwater Recharge Area (SGRA) and a Highly Vulnerable Aquifer (HVA). A groundwater seepage area was identified along slope towards the ESA in the northeast Subject Lands, and shallow groundwater has been confirmed to be present (EXP, 2022).

Water inputs (quality and quantity) to groundwater and surface water features need to be managed during and post-construction to protect wildlife habitat and London's hydrological resources. Management of water resources is discussed in Section 7.0 of this EIS report.

5.2.9 Environmentally Significant Areas (1367-1371)

The Kilally Forest Environmentally Significant Area (ESA) is identified within and adjacent to the Subject Lands on Map 5 of the London Plan (2021a). The current ESA boundary is an expansion to the one identified in the prior Kilally Area Plan and resultant of City of London Official Plans. As part of this review, MTE staked the boundary of the wetland (Community 5) which generally followed the updated ESA boundary (London Plan Map 5, 2021a) albeit with some minor localized adjustments. This boundary line was reviewed and finalized with City of London staff and surveyed and added to the site plan.

This wetland (Community 5 and seep area) makes up the core ecological area of this edge of the Kilally Forest ESA. No additional vegetation has been added to the ESA as Community 1a and 2 do not improve ecological function, fill in 'bays', or connect patches to one another or a watercourse, and the meadow is not below the top-of-slope in a stream corridor or ravine (Guideline 6). Community 2 is a cultural community with a history of residential disruption in the west that largely consisting of Manitoba Maple and other non-natives. However, some of these features can be included to provide buffer to the ESA (buffers are not included in the ESA boundary delineation).

The revised ESA boundary, based on the staked wetland boundary, is shown on Figure 8. The revised boundary represents only minor adjustments to the ESA line on Map 5 of the London Plan (2021a).

5.2.10 Upland Corridors (1372-1377)

There are no Upland Corridors identified on Map 5 of the London Plan (2021a) within or adjacent to the Subject Lands.

5.2.11 Potential Naturalization Areas (1378-1381)

There are two Potential Naturalization Areas identified on Map 5 of the London Plan (2021a) within the Subject Lands; one is in the northwest corner, the other is in the west.

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

An Unevaluated Vegetation Patch is identified within and adjacent to the Subject Lands to the east on Map 5 of the London Plan (2021a). This feature is largely off-site on private lands and was not investigated in detail outside the property boundary.

Within the Subject Lands, Community 2 (CUW1) is a disturbed habitat which was part of a former residential area. Only a small segment of Community 2 is considered an Unevaluated Vegetation Patch and that area is impacted by Manitoba Maple. Due to the anthropogenic disturbance, lack of SWH or species protected under the *Endangered Species Act* found in this feature, and lack of biodiversity within Community 2, this community has not been considered further for review for significance. This community, however, is discussed further in the context of buffers later in this report.

There are no additional natural vegetation patches larger than 0.5 ha within the Subject Lands that have not already been discussed. Communities 1a/1b (Cultural Meadow) and 4 (Cultural Thicket) did not contain significant wildlife habitat, have very low floristic quality, and have been impacted by aggregate activities. Although these communities are larger than 0.5 ha, they are not significant vegetation patches.

5.2.13 Other Drainage Features (1387)

There are no other drainage features identified within the Subject Lands.

5.3 Thames Valley Corridor Plan (2011)

The area of the Legal Parcel within 100 m of the Thames River is considered an Edge Zone where no new urban development should occur according to the Thames Valley Corridor Plan. This Edge Zone and the 100 m setback will need to be considered in this EIS.

5.4 Conservation Authority Regulations

The Upper Thames River Conservation Authority (UTRCA) regulations fall across portions of the Subject Lands. The regulated areas are associated with the Unevaluated Wetland communities within the Kilally Forest ESA boundary and surrounding adjacent watercourses. A hazard area is also identified in the central Subject Lands, although this is not apparent on site and should be revised by UTRCA. Any development proposed within the regulated areas will require a Section 28 Permit Application from the UTRCA. It should be noted that text-based regulations supersede mapping, and the UTRCA regulates features defined as ‘wetlands’ in the *Conservation Authority Act*.

5.5 Summary of Identified Features and Functions

Table 5 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 (2021a).

Table 5: Environmental Considerations for the Subject Lands

Policy Category	Environmental Consideration	Natural Heritage Feature
Provincial Policy Statement	Significant Woodlands	• Woodlands in the north Kilally Forest ESA
	Significant Valleylands	• Thames River corridor (Adjacent Lands)
	Significant Wildlife Habitat	**Unconfirmed SWH (Adjacent Lands)** • Raptor Wintering Area • Bat Maternity Colonies • Reptile Hibernaculum • Amphibian Breeding Habitat (Woodland) • Special Concern and Rare Wildlife Species
	Habitat of Endangered and Threatened Species	• Four candidate bat maternity roost trees • Active Bank Swallow [THR] nests
The London Plan (2021a)	Unevaluated Wetlands	• Associated with the staked ESA boundary (Community 5) and a wetland within the Subject Lands (Community 6)
	Water Resources System	• Subject Lands are within a SGRA and HVA
	Environmentally Significant Areas	• Kilally Forest ESA
	Potential Naturalization Areas	• Two potential naturalization areas identified within the Subject Lands
	Unevaluated Vegetation	• Community 2 is not considered Significant for this report - further discussed in the context of mitigation and buffers
Thames Valley Corridor Plan (2011)	Edge Zone	• No new urban development within 100 m of the Thames River
UTRCA Regulations	Regulated Area	• UTRCA regulations fall across portions of the Subject Lands - Associated with Thames River and the ESA wetlands • The central regulated area (in Community 1a and extraction area) should be revised by UTRCA

5.6 Ecological Buffers and Pre-Development Considerations

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

5.6.1 Public Ownership/Acquisition

In policy section 1404-1407 of the London Plan (2021), the City recognizes not all natural heritage areas will be brought into public ownership, or shall be open and accessible for public use.

5.6.2 Ecological Buffers

The London Plan (2021) 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 Section 5.0 Guidelines for Determining Setbacks and Ecological Buffers in the *City of London Environmental Management Guidelines* (EMG, 2007).

Features including Unevaluated Wetlands, an ESA, a Significant Valleyland, and an Unevaluated Vegetation Patch are present within and adjacent to the Subject Lands. The updated Environmental Management Guidelines (EMG) document (2021b) suggests a minimum buffer width of 30 m between development and wetlands and a minimum setback of 30 m from permanent

watercourses. The EMG (2021b) recommends that Significant Woodlands have a buffer of at least 30 m from the dripline, and Woodlands have at least a 10 m buffer from the dripline. The EMG-recommended buffers and other protection considerations are shown on Figure 8. The suggested buffer widths will be taken into account along with the sensitivity and quality of the features to determine appropriate buffers. Buffers will be further discussed in Section 7.0 in the context of impact avoidance and mitigation.

5.6.3 Stewardship

Under the stewardship policies 1408-1411 of the London Plan, protection is required for natural heritage systems remaining in private lands. Protections 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 settings in context of mitigation measures and their contribution to the refinement of setbacks and buffers.

6.0 Description of the Development

The Proponent (Drewlo Holdings Inc.) has proposed a residential subdivision within the Subject Lands. The subdivision is proposed to include 239 single family residential lots and medium density residential housing blocks (7.992 ha). The subdivision would also include park space, Open Space, and internal roadways. Access to the subdivision is proposed via Agathos Street to the west (one connection) and Kilally Road to the south (two connections). The development will require Kilally Road be widened into the Subject Lands. The Site Plan is shown on Figure 9 (MTE, June 2022) and the development overlay is shown on Figure 10. The Kilally Forest ESA will be maintained as Open Space outside the development. A pathway is proposed in Block 244 between the limit of residential development and the ESA boundary.

The proposed development will be fully serviced with associated services to standard depths of approximately 2-4 metres below grade. The development is proposed to be serviced with local storm sewers that direct flows northwest to a trunk storm sewer in Block 270. Stormwater runoff from the proposed subdivision will be directed to an existing stormwater management (SWM) facility that was constructed as a part of Phase 1 of the Edgevalley development. This SWM facility outlets to the Thames River. A trunk storm sewer will be extended through the site to convey runoff from external contributing areas (Drewlo Holdings Inc., 2020). Further SWM details are provided in the Stormwater Management Report (MTE, 2022).

7.0 Impacts and Mitigation

This section reviews the development proposal [Figures 9 and 10] and identifies potential direct and indirect impacts to the significant natural heritage features within and adjacent to the development footprint [Figure 10]. 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 7].

Based on the analysis in Section 5.0, the significant features identified are summarized in Table 5. Significant natural heritage features identified on or adjacent to the Subject Lands are:

- Unevaluated Wetlands
- Significant Woodlands (Kilally Forest ESA)
- Significant Valleylands
- Significant Wildlife Habitat
- Water Resources System
- Environmentally Significant Areas (Kilally Forest ESA)
- Potential Naturalization Areas
- Unevaluated Vegetation Patches

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

7.1 Direct Impacts and Mitigation

7.1.1 Vegetation Removal

Based on the development plan presented in Figure 9 and Figure 10, the proposed development will require the alteration of the majority of the Subject Lands. A large portion of the development area has been part of a previous aggregate extraction. Nevertheless, there will still be some removal of cultural and naturalized vegetation. The vegetation within the ESA and a tree protection area in the northeast will be retained with no direct impacts. A summary of proposed vegetation removal by ELC community is provided in Table 6, below.

Table 6: Direct Impact by Vegetation Community Type Within the Subject Lands

Pol	ELC Code	Description	Area (ha) Proposed for Removal
Anthropogenic			
E		Aggregate Extraction Area	11.32
Cultural			
1a	CUM1	Mineral Cultural Meadow	6.93
1b	CUM1	Mineral Cultural Meadow	1.42
2	CUW1	Mineral Cultural Woodland	0.28
3a	SWT2-2	Willow Mineral Thicket Swamp	0.30
3b	SWT2-2	Willow Mineral Thicket Swamp	0.16
4	CUT1	Mineral Cultural Thicket	1.75
7	CUM1	Mineral Cultural Meadow	0.37
		Total Cultural Vegetation Proposed for Removal:	11.21
Natural			
5	SWT2-9/MAM2	Gray Dogwood Mineral Thicket Swamp/Phragmites/Cattail Marsh	0.0
6	SWD2-2	Willow Mineral Thicket Swamp	0.69
		Total Natural Vegetation Proposed for Removal:	0.69

Recommendation 1:
The limits of clearing should be surveyed and staked in the field to allow for the protection of off-site natural areas and vegetation.

Recommendation 2:
A tree preservation plan (TPP) should be completed to identify trees for retention and propose appropriate tree protection measures within the Subject Lands, particularly along the north and east property boundary. A TPP will also determine the compensation plantings required for the proposed tree removals.

Recommendation 3:
Prior to any construction activity, tree preservation fencing is to be installed to protect adjacent retained trees from damage to their limbs and roots. Tree preservation fencing should be inspected regularly, with any issues preferably being resolved the same day.

Recommendation 4:
A site restoration or re-vegetation plan should be developed using plant species native to Ecoregion 7E and appropriate for the existing site conditions. The buffer areas between the proposed development and the designated setbacks, as discussed in the sections below, will be actively naturalized with native tree and shrub species to improve the ecological function of the area and to provide natural buffers to adjacent natural heritage features. Plant species chosen should preferably be included in the UTRCA recommended plant lists (UTRCA, 2021a).

Recommendation 5:
Invasive plant species that are identified within setbacks should be removed and best management practices for limiting the spread of floral invasive species should be followed during development. See Section 7.3 for details on invasive species management.

Recommendation 6:
Areas of exposed soil following construction should be stabilized with a fast-germinating cover crop (e.g. oats, millet) or other suitable ground cover, avoiding plant species with the potential to invade adjacent woodlands. For information on invasive, non-native plant species in the Upper Thames watershed refer to *Invasive Non-Native Plants in the Upper Thames River Watershed* (UTRCA, 2021).

Recommendation 7:
Develop an ecological monitoring program for newly vegetated or enhanced areas. The monitoring plan is discussed in Section 7.5 below.

7.1.2 Wetlands

Wetland Communities 3a (SWT2-2), 3b (SWT2-2), and 6 (SWT2-2) are proposed to be removed for the development. The London Plan Policy 1334 states that for non-provincially significant wetlands there shall be no net loss of the wetlands' features or functions. The City may consider the replacement of wetlands rather than in situ protection where the features and functions of the wetland may be provided elsewhere and would enhance or restore the Natural Heritage System. Replacement for wetlands between 0.1 ha and 0.5 ha 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 (City of London, 2021a).

Communities 3a and 3b are man-made artefacts as a result of aggregate extraction and grading without outlet. With a low biological quality in these features, it is our opinion these wetlands should not be considered features under the London Plan policies. Stormwater management can address the minor hydrologic contribution these pockets serve and there will be no net loss of wetland features or functions.

Community 6 (0.69 ha) was originally agricultural, then began to accumulate water between 2000 and 2001 due to pooling at the toe of un-graded spoil piles from the aggregate extraction activities. This is shown in air photos between these years [Appendix B]. The function of this wetland includes hydrological function, habitat for common species (ex: Canada Goose, Mallards) and non-significant amphibian breeding habitat. Currently Community 6 is greater than 0.5 ha and, while of anthropogenic origin, has started to naturalize and is of sufficient size to consider under OWES. Community 6 does not meet any threshold of significance, but it is considered a Wetland under London Plan policies. It should still be noted that this community is isolated by roadways and aggregate extraction from other natural heritage features.

A combination of invasive species management in the 0.6 ha *Phragmites* patches of the core wetland feature (Community 5) and some additional off-site wetland creation and/or enhancement is proposed. The off-site compensation will occur on lands owned by the proponent south of the Subject Lands across Kilally Road. Compensation details will be developed with the City of London through the detailed design.

The improved quality of the core wetland (Community 5) and expansion of natural habitat off-site, may result in more improved biodiversity, habitat quality, and linkages than retaining the feature in situ. The target off-site wetland community will be the wetland community located on a south adjacent property across Kilally Road. This feature should be enhanced through expansion with a shallow meadow marsh with deeper pools (i.e. 0.5 metres deep for seasonal amphibian breeding habitat). Variable topography, native species appropriate for Middlesex County, and seasonally-wet pools will provide a more diverse plant community than is currently present in the existing wetland (Community 6). Rock or log features can also be added to encourage use by wildlife. The wetland will be need to receive overland flow from the surrounding area and be constructed with a compacted silt or clay bottom in order to maintain water levels. It must be confirmed that there will be adequate hydrological inputs to the wetlands to provide seasonal amphibian breeding habitat.

In addition to off-site wetland compensation for retention of hydrogeological and biological functions, additional biological compensation within the Subject Lands will be provided through invasive species management within the retained vegetation communities in the Kilally Forest ESA. Currently Community 5 (SWT2-9/MAM2) has low floristic quality and is largely impacted by Common Reed (*Phragmites australis*) as shown on Figure 11. The areas dominated by *Phragmites* in the 2.35 ha of Community within the Subject Lands, are estimated at about 0.6 ha based on air photo interpretation and field investigations. Community 5 also contains Common Buckthorn, Purple Loosestrife, and Garlic Mustard which are identified by the City of London as invasive species of concern on their “watch list” (Ontario Invasive Plant Council, 2020). Removal of these species, particularly *Phragmites,* from Community 5 would be beneficial not only for that community, but also for the Kilally Forest ESA as a whole since invasive species will continue to spread if left unchecked. The exact area proposed for invasive species management will be determined through discussions with the City of London. Best management practices and invasive species management details are provided in Section 7.3.

Recommendation 8:
Enhance an existing wetland community located south across Kilally Road (483509.50 m E 4764742.38 m N) by expanding the wetland and creating native meadow marsh habitat features to help compensate for the removal of wetland Community 6. Compensation approaches and location will be discussed with the City of London and wetland design will be provided at the detailed design phase.

Recommendation 9:
Improve the natural heritage quality of the retained SWT2-9/MAM2 wetland (Community 5) through invasive species management activities, with a focus on the removal of Common Reed (*Phragmites*).

Recommendation 10:
LID measures, as recommended in the Hydrogeological Assessment (EXP, 2022), should be implemented to ensure the hydrological functions (ex: surface water storage, water quality improvement) of the removed wetlands are compensated for post-development.

Recommendation 11:
When the wetland enhancement/creation area is designed, a water balance will need to be completed to ensure the new wetland area can provide suitable ephemeral ponding for amphibian breeding and wetland plants long-term.

7.1.3 Significant Woodlands and Woodlands

The forest communities within the Kilally Forest ESA were not evaluated as a part of this EIS as they are outside the Subject Lands and were identified through aerial photos. These woodlands are considered Significant in this EIS as they are within the ESA boundary. No trees are proposed to be removed from the Significant Woodlands and no direct impacts are expected.

Community 2 (CUW1) is heavily dominated by Manitoba Maple and impacted by past residential activities, and is not considered a Significant Woodland. A small section of the west of this community is proposed to be removed for residential development and construction of a pathway along the north development limit. Details for tree compensation will be determined in the Tree Preservation report at a later stage.

Recommendation 12:
As recommended in Recommendation 2, identify which trees in Community 2 are proposed for removal and provide a plan for compensation planting.

7.1.4 Significant Valleylands

A Significant Valleyland associated with the Thames River corridor is adjacent to the Subject Lands to the north. The recommended buffer from the EMG for this Significant Valleyland is 30 m as the natural heritage components in the Significant Valleyland in this area are wetlands or Significant Woodlands (City of London, 2021b). The proposed development footprint is on average 300 m south of the Thames River and is outside of the EMG recommended Significant Valleyland buffer. No impacts to the Significant Valleyland feature are anticipated with the currently proposed development limits.

7.1.5 Significant Wildlife Habitat

There is no SWH within the Subject Lands. Adjacent unconfirmed SWH is outside the development limit and no direct impacts are anticipated. Indirect impacts to adjacent natural heritage features are discussed in Section 7.2.

7.1.6 Habitat of Threatened or Endangered Species

Active Bank Swallow [THR] nesting holes are present in the central extraction area within the Subject Lands. About 20 holes and multiple individuals were observed in June 2022. The nesting habitat must continue to be protected throughout the active season in accordance with Best Management Practices (OMNRF, 2017) using fencing to identify and cordon off the area as well as on-site worker awareness. A minimum of 50 m will be kept open in front of the nest holes to allow unobstructed entry. MECP was immediately contacted for guidance, and they have confirmed that the mound with nest habitat can be removed without authorization after the active nesting season (i.e. after September 15) since the nesting habitat was only created this year. Site management according to BMPs (OMNRF, 2017) to prevent nesting on site in subsequent years is also recommended. MECP confirmation is provided in Appendix A. Site visits will be conducted every few weeks to ensure protections are adequate and no new nests have been established.

Four candidate bat maternity roost trees were identified within the Subject Lands and all four of these trees are proposed for removal within the development footprint. These trees could potentially support maternity roosting of Little Brown Myotis [END], Northern Myotis [END], and Tri-colored Bat [END]. Removal of potential bat roost trees should be completed between September 1 and April 30 to avoid the bat active roosting season (May 1 – August 31). One rocket-style bat box should be installed near the north woodland feature on the property to compensate for removal of potential habitat. Each rocket-style bat box provides the habitat equivalent of five roost trees. A conceptual location for the bat box is shown on Figure 11. The location of the bat box should be incorporated into the landscape plan and installation should be supervised by a qualified biologist. Candidate bat maternity roost habitat will likely remain in Adjacent Lands to the north and east.

A 2013 observation of an Eastern Hog-nosed Snake [THR] was recorded by the Ontario Reptile and Amphibian Atlas in the 10 km square where the Subject Lands are located. MECP has agreed that no impacts to Eastern Hog-nosed Snake are expected as this species is unlikely to be present and mitigation measures have been provided to manage unlikely incidental encounters during construction [Appendix A].

Recommendation 12:
Continue to protect existing Bank Swallow [THR] nesting habitat and monitor for new nesting habitat throughout the 2022 active season. The mound with nests can be removed in the inactive season (after September 15).

Recommendation 13:
The creation of additional suitable habitat (e.g. soil stockpiles with vertical faces) prior to and 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.

Recommendation 14:
Remove candidate bat maternity roost trees between September 1 and April 30, outside the active roosting season for bats. One rocket-style box should be installed in a suitable location outside the development footprint. Placement should be included on the landscape plan at detailed design, and should be approved by a qualified biologist.

Recommendation 15:
Implement general mitigation measures for construction activities near habitat for protected reptiles to ensure no contraventions of the *Endangered Species Act, 2007* occur. The complete reptile mitigation measures are provided in Appendix J.

7.1.7 Water Resource Systems

The Subject Lands are within an SGRA and HVA (TSRSPC, 2015) and the development limit is about 200 m from the Thames River. A groundwater seepage area is also present in the northeast. The Hydrogeological Assessment (EXP, 2022) discusses potential impacts to surface and groundwater features, as well as recommends mitigation measures to ensure the quality and quantity of groundwater and surface water resources post-development. In addition to MTE recommendations, EXP's recommended mitigation measures will be summarized below for clarity. Further detail is provided in the Hydrogeological Assessment and Water Balance Report (EXP, 2022). EXP determined that the recommended secondary infiltration measures will preserve the current recharge into the unconfined aquifer and maintain groundwater discharge along the northern slope (EXP, 2022).

Recommendation 16:
Passive infiltration measures (ex: thick topsoil in yard and boulevard areas, redirection of downspouts to side yard swales) should be applied throughout the residential development area to

mitigate the impacts of increased runoff and decreased infiltration caused by development (EXP, 2022).

Recommendation 17:
Sedimentation controls will be required during grading to mitigate the turbidity of runoff that may flow north to the ESA (EXP, 2022).

Recommendation 18:
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 (EXP, 2022). 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 19:
Vegetative cover should be re-established in disturbed areas following construction to minimize erosion.

Recommendation 20:
Limit the use of commercial fertilizers or other applied chemicals within the Subject Lands, particularly near adjacent natural heritage features (EXP, 2022). 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 and parking areas (EXP, 2022).

Recommendation 22:
Where infiltration of run-off from roads or driveways is considered, additional measures to treat the water may be required to minimize potential for groundwater contamination (EXP, 2022).

Recommendation 23:
Discharge of collected water from service trenches and excavations should be located away from retained wetlands and the ESA. Sediment control measures should be implemented at the dewatering discharge point (EXP, 2022).

Recommendation 24:
If imported materials are required to restore onsite excavations or to raise grades, consider analytical testing of the imported material to ensure that any material brought to the site meets the applicable standards under Ontario Regulation 153 for residential lands (EXP, 2022).

7.1.8 Environmentally Significant Areas

The Kilally Forest ESA is identified adjacent to the development footprint but within the Legal Parcel. The recommended buffer from an Environmentally Significant Area composed of wetlands and Significant Wildlife Habitat is 30 m (City of London, 2021b). The 30 m ESA buffer has been used to inform the limit of proposed development, so natural heritage features contained within the ESA (Unevaluated Wetlands, Significant Woodlands, Woodlands, candidate SWH, etc.) will be protected by and within the 30 m buffer. This will include a portion of the disturbed Community 2 (Cultural Woodland) as a vegetated buffer. The 30 metre buffer should be vegetated with native species appropriate for the surrounding vegetation communities wherever vegetation does not already exist. A landscape plan will be provided at detailed design. If the buffer is successfully vegetated with native species, the buffer can eventually contribute habitat and act as an extension of the ESA instead of just a buffer. The ESA should be further protected with appropriate sediment and erosion control measures and other indirect impact mitigations, which are discussed further in Section 7.2.

7.1.9 Potential Naturalization Areas

Two Potential Naturalization Areas are identified within the Subject Lands. With the definition of the ESA and buffers, the development limits have maintained the linkage connection between these two areas. This will result in the improvement of wildlife habitat in the Kilally Forest ESA. Invasive species management will be further detailed in Section 7.3.

7.1.10 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, amphibians, and reptiles.

Recommendation 25:
Avoid vegetation clearing and site disturbance during migratory bird breeding season in open habitats and wetlands in region C2 (April 9 to August 16) (ECCC, 2018) 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 16 or until the nest has been confirmed inactive (e.g. young have fledged).

Recommendation 26:
Plan major site grading activities to avoid breeding, nesting 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 27:
Ensure workers are aware of potential incidental encounters with wildlife and the necessary protective measures that can be implemented. 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.

7.2 Indirect Impacts and Mitigation

Natural heritage features may also experience indirect effects during construction, including sedimentation and erosion, or post-construction, such as inadvertent encroachment. Indirect impacts on natural features will be mitigated through the implementation of standard environmental protection measures, discussed below.

7.2.1 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 ESA and other natural heritage features identified in this report are avoided or mitigated.

Recommendation 28:
A detailed interim stormwater management plan is needed to guide the construction phase and protect the ESA and unevaluated wetland boundary. Stormwater must be discharged away from the adjacent ESA and unevaluated wetland features. This will be provided along with LID measures at detail design.

Recommendation 29:
A multi-barrier approach for sediment and erosion control will 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 will act as a barrier to keep construction equipment and spoil away from the slopes and vegetation to remain, and prevent erosion and sedimentation of the adjacent wetland features. Sediment and erosion control fencing will 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 30:
During construction, the lands between the sediment and erosion control fencing should be maintained.

Recommendation 31:
Soil stockpiles should be established in locations where natural drainage is away from the adjacent wetlands and Kilally Forest ESA. If this is not possible and there is a possibility of any stock pile slumping and moving toward the edge of 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 32:
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 are resolved as quickly as possible, ideally the same day.

Recommendation 33:
Sediment and erosion control fencing should not be removed until adequate re-vegetation and site stabilization has occurred. 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. 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 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.

7.2.2 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.

7.2.3 Protection of Water Resources

Recommendation 37:
Sedimentation controls during site grading work must help control and reduce the turbidity of runoff that could flow to adjacent wetlands (i.e. Community 5).

Recommendation 38:
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 39:
Limit the use of commercial fertilizers and other chemical applications within the Subject Lands, especially in landscaped areas that border the ESA buffer. Consideration may be given to using grass varieties which are heartier and require less extensive watering or fertilizers.

Recommendation 40:
Limit the use of salts or other additives for ice and snow control on the roadways.

7.2.4 Landowner(s) Education

Recommendation 41:
Develop an information package (brochure and web-based resources) to educate the future residents on appropriate ways to dispose of landscaping and lawn maintenance waste, garbage, and protect the natural heritage components beyond the property boundaries. This should include information on the impact of pets on wildlife and natural areas, how to limit attraction of nuisance urban wildlife, and potential impacts of recreational activities in natural features. This is important for preservation of the adjacent natural heritage features (i.e. the Kilally Forest ESA).

Recommendation 42:
The installation of educational signage along boundaries adjacent to the Kilally Forest ESA area post-development is recommended to inform residents of the significance of the adjacent features. Signage discussing the ecological value of the wetland areas and wildlife species present may be particularly effective. 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). Educational materials should address potential impacts of invasive species, vegetation trampling, unleashed pets, tree damage, and recreational uses. Education of residents should be implemented with the guidance of a qualified biologist where appropriate.

7.3 Invasive Species Management

Several priority invasive plant species from the City of London Invasive Plant Management Strategy have been identified on the Subject Lands, including Common Buckthorn and *Phragmites australis* (Common Reed). Policy 1417 of the London Plan states that management of invasive plant species will focus on key components of the natural heritage system, including Significant Valleylands, Wetlands, and ESAs. In addition, invasive species removal is proposed to help compensate for the removal of low-quality wetlands within the Subject Lands. As such, an invasive species management strategy should be developed for the Subject Lands.

Inventory and mapping of invasive plants will be incorporated into the monitoring plan. Removal and control of invasive species should follow published Best Management Practices, such as those published by the Ontario Invasive Plant Council (2020). Once invasives are controlled, restoration using native species as well as quick-establishing cover crops should be undertaken to avoid reestablishment of invasives or other nuisance plant species.

7.4 Monitoring Plan

Mitigation and compensation measures recommended in this EIS aim to minimize and compensate for the direct and indirect impacts to the 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 will be 2-phase and will consist of a construction monitoring plan and a long-term post-construction plan. 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 apartment building construction until grounds adjacent to natural features are vegetated and stabilized. This plan will be developed during the detailed design stage. Reports should be made available to the UTRCA and City design services staff.

Long-term post-construction monitoring shall evaluate the success of the proposed active naturalization efforts and planting compensation, as well as areas of invasive species management. This plan should include remedial actions that are triggered if effects exceed pre-determined thresholds (e.g. supplemental plantings if survival rates are low). Monitoring requirements should be determined at the detailed design stage in consultation with agency staff. Recommendations for monitoring include, but are not limited to:

- Encroachment activities and correction – monitoring should be completed every other year until the development is at 70% build-out, then reporting to the City of London should be completed for one year. After this, monitoring of encroachment will be handed over to the City.
- Encroachment into the adjacent ESA should be monitored for one year post-construction (e.g., litter present in natural features, informal trail creation) and additional strategies should be implemented if required. If encroachment is an issue, documentation will be provided to by-law enforcement and potential additional educational strategies will be considered.
- Vegetation monitoring completed for two years after planting to document compliance with the plans (e.g., the correct species and quantities were planted, tree protection measures were effective, wetland creation was successful), and establishment of planted material. Implementation of adaptive management to correct deficiencies.
- Amphibian breeding monitoring for two years' post-wetland enhancement/creation is recommended to determine the success of created wetland breeding habitat on the south adjacent property.
- Adaptive management strategies such as supplemental plantings, and/or control of non-native invasive species. Adaptive management may be triggered by poor survival of planted material, insufficient vegetation cover, and the presence of unacceptable non-native and invasive species.

7.5 Thames Valley Corridor Plan (2011)

The area within 100 m of the Thames River is considered an Edge Zone where no new urban development should occur in accordance with the Thames Valley Corridor Plan (City of London, 2011). As shown on Figure 10, no urban development is proposed as a part of the Project within

100 m of the Thames River. The Development Limit is a minimum of approximately 160 m from the south bank of the Thames River, therefore the proposed development is in agreement with the Thames Valley Corridor Plan.

7.6 UTRCA Regulation

UTRCA regulates a portion of the Subject Lands under Ontario Regulation 157/06 based on UTRCA regulation mapping (UTRCA, 2018). Regulated features include Unevaluated Wetlands contained within the Kilally Forest ESA. The Unevaluated Wetlands may also be regulated based on text-based UTRCA policy. An erosion hazard is identified within the central Subject Lands, but is not apparent on-sire. Any development proposed within the regulated areas will require a Section 28 Permit Application from the UTRCA.

7.7 Net Effects

Table 7, below, summarizes potential impacts to natural heritage features and functions as well as proposed mitigation, compensation or enhancement measures.

Table 7: Net Effects

Source of Impact	Affected Feature	Predictions of Impact	Mitigation Strategy	Net Effects	Recommendations for Management and Monitoring
Artificial Lighting	Kilally Forest ESA	Low impacts expected - residential lights	30 m ESA buffer; “dark sky” lights will be used as required by City standards; residential lighting is unlikely to significantly impact common wildlife species	No net effect	
Litter and Garbage	Kilally Forest ESA	Low impacts expected - garbage/litter from residential area	Garbage bins along sidewalks; public education (brochures, signage, and/or web resources) 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	Kilally Forest ESA	Low impacts expected - vegetation could get trampled	Educational materials and signage to discourage off-path wandering; natural slope along edge of ESA may discourage entry into the ESA; proposed trail along the ESA buffer will encourage use of appropriate walking areas	No net effect	Monitoring and ongoing education.
Creation of new trails	Kilally Forest ESA	Low impacts expected - ad-hoc trails may trample ground cover, transport invasive species	Educational materials and signage to discourage off-path wandering; natural slope along edge of ESA may discourage entry into the ESA; proposed trail along the ESA buffer will encourage use of appropriate walking areas	No net effect	Monitoring and ongoing education.
Tree damage	Kilally Forest ESA, Retained Community 2	Low impacts expected - limb removal	Tree Preservation Report mitigation measures; educational materials	No net effect	Monitor for tree damage post-construction.
Increased noise	Kilally Forest ESA	Low impacts expected - only common faunal species present	30 m vegetated buffer from the ESA; low level noise from adjacent houses 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 9 to August 16 in open habitats and wetlands in region C2) to avoid disturbance of birds nesting	No net effect	Residential by-laws restrict excessive noise.

Disturbance to wildlife during construction	Kilally Forest ESA	Low impacts expected - disruption to activities of nearby wildlife will be temporary	30 m buffer from the ESA; restrict timing of habitat and vegetation removal to outside breeding and sensitive periods for birds and other wildlife; reptile mitigation measures have been provided; 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	Kilally Forest ESA (includes wetlands)	Low to medium impacts expected - impervious surfaces decrease infiltration	Implement secondary infiltration measures and LID measures as provided in the EXP Hydrogeological Assessment (2022); 30 m buffer from the ESA; 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	No net effect	Refer to the EXP Hydrogeological Assessment (2022)
Increased erosion	Kilally Forest ESA (includes wetlands)	Low impacts expected	30 m buffer from the ESA; sediment and erosion control fencing installed at development limit; implement sediment controls at the dewatering output point; 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.
Increased nutrient, pesticide, chemicals, and sediment	Kilally Forest ESA (includes wetlands)	Low impacts expected - The ESA may receive regular seasonal nutrient and sediment loads	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 (EXP, 2022)	No net effect	Monitor sediment and erosion control fencing.

Visual intrusion	Kilally Forest ESA	Low impacts expected - residential housing is not visually intrusive	Subject Lands are currently heavily disturbed by aggregate extraction; surrounding lands are residential; no significant decrease in visual appeal is anticipated	No net effect	
Domestic animals	Kilally Forest ESA	Medium impacts expected - off-leash dogs can trample plants - outdoor cats can kill wildlife	Public education (brochures, signage, web-based resources) to educate about the importance about the adjacent natural features	No net effect	Ongoing education.
Introduced invasive plants	Kilally Forest ESA	Low impacts expected - inappropriate disposal of lawn/gardening waste - encroachment into ESA	30 m buffer from ESA; active invasive species management plan; native compensation plantings and wetland creation	Positive net effect	Ongoing education. Monitor the success of invasive species management and establishment of native species.
Air pollution	Kilally Forest ESA	No impacts expected	The subdivision will not generate substantial air pollution in the region	No net effect	
Fire Hazards	Kilally Forest ESA	Low impacts expected - potential for recreational gatherings	30 m buffer from the ESA; educational materials and signage to discourage physical encroachment; natural slope into ESA may discourage entry	No net effect	Ongoing education.
Use of heavy machinery – tree damage	Kilally Forest ESA, retained Community 2	Medium impacts expected - machinery too close to retained vegetation can break off branches or wound trunks	30 m buffer from the ESA; implement tree protection measures from a Tree Preservation Report; all issues with protection 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 – soil compaction	Kilally Forest ESA	Low impacts expected - machinery too close to retained trees can compact soils over vital tree roots	30 m buffer from ESA and setbacks from retained tree driplines (tree protection area on Development Plan); implement tree protection measures; 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	Kilally Forest ESA (includes wetlands)	Medium impacts expected - machinery can leak or refueling can generate spills	Establish storage/refueling area away from wetland edges; 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 (EXP, 2022); contractors working at the site should ensure that construction equipment is in good working order; equipment operators should have spill-prevention kits, where appropriate (EXP, 2022)	No net effect	Containment of spills should be included in plan.
Changes in soil grade	Kilally Forest ESA, retained Community 2	Medium impacts expected - raising the grades may result in root suffocation - lowering grade may result in removal of tree roots	30 m buffer from ESA and setbacks from retained tree driplines (tree protection area on Development Plan); implement tree protection measures from a Tree Preservation Report	No net effect	Regular monitoring by an ecological consultant during construction to ensure trees are protected. Post-construction monitoring to ensure tree protection measures and wetland retention were successful.

8.0 Summary and Conclusions

Drewlo Holdings Inc. is proposing the construction of a single family (239 lots) and medium density residential subdivision within the Subject Lands, located at 1782 Kilally Road, east of the Highbury Avenue and Kilally Road intersection in the City of London.

The proposed development avoids direct impact to the features and functions of the significant natural heritage features, including the Kilally Forest ESA, as well as the species and habitat associated with this feature. Appropriate setbacks and buffers have been recommended to mitigate indirect impacts to the adjacent natural heritage features. Buffer areas should be landscaped with native species to establish enhanced buffers and provide additional wildlife habitat. Three small disturbed wetland communities within the Subject Lands are proposed for removal, and off-site wetland creation/enhancement along with invasive species management in the ESA is recommended as compensation.

This EIS has also set out recommendations to protect the adjacent significant natural heritage features from indirect impacts, such as erosion and sediment control measures.

Provided the recommendations in this EIS are followed, it is our opinion that the proposed development can proceed.

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,

MTE Consultants Inc.

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ACL:sdm
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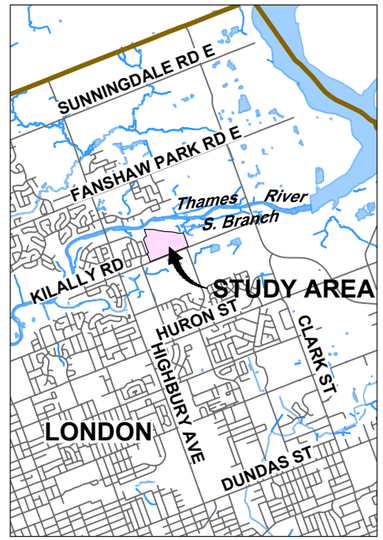
Figures

Client: Drewlo Holdings Inc.



KEY PLAN

SCALE IN METRES
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LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET.

NOTES

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

ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT

ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7,
CONCESSION 4, LONDON, ONTARIO

TITLE

SITE LOCATION

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 42024-601
Date: June 2/22	Rev No.: 0

FIGURE 1

CAD: P:\42024\601\2_PROD\42024-601-R01 ENVIRONMENTAL IMPACT STUDY\42024-601-R01001.DWG
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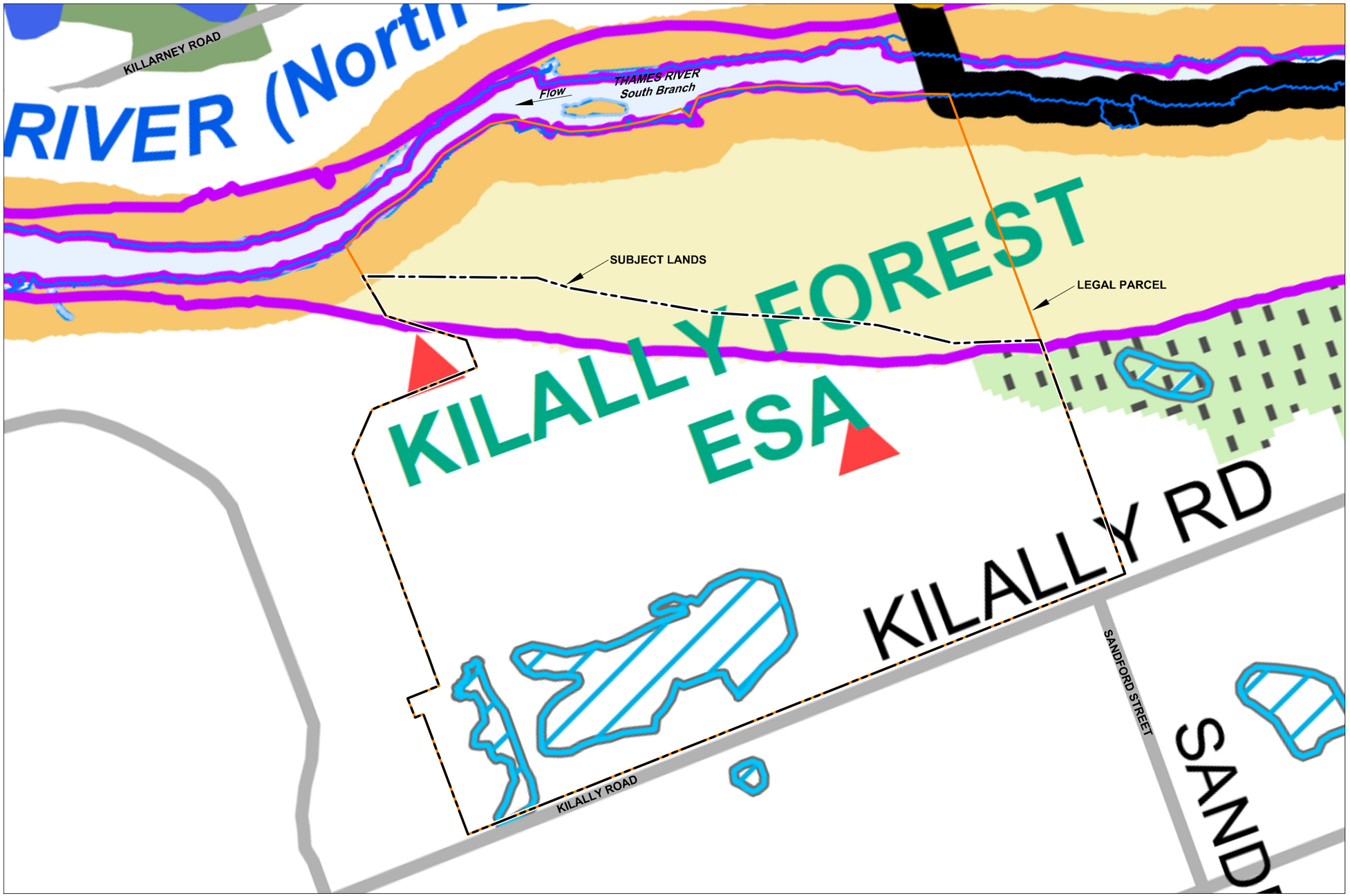

N

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- NAME — ENVIRONMENTALLY SIGNIFICANT AREA (ESA)
- POTENTIAL NATURALIZATION AREA
- PROVINCIALLY SIGNIFICANT WETLAND
- SIGNIFICANT VALLEYLAND
- UNEVALUATED VEGETATION PATCH
- UNEVALUATED WETLAND
- VALLEYLAND
- WOODLAND

SCALE IN METRES
0 50 100
1:4,000

REFERENCES

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PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7,
CONCESSION 4, LONDON, ONTARIO

TITLE
NATURAL HERITAGE

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 42024-601
Date: June 2/22	Rev No.: 0

FIGURE 2

Client: Drewlo Holdings Inc.

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Client: Drewlo Holdings Inc.

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LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- GREEN SPACE
- ENVIRONMENTAL REVIEW
- NEIGHTBOURHOODS
- AREAS WITHHELD FROM LPAT APPROVAL

SCALE IN METRES
0 50 100
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REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET; AND
CITY OF LONDON MAP 1 - PLACE TYPES, JUNE 23 - 2016 .

NOTES

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PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7,
CONCESSION 4, LONDON, ONTARIO

TITLE
LAND USE

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 42024-601
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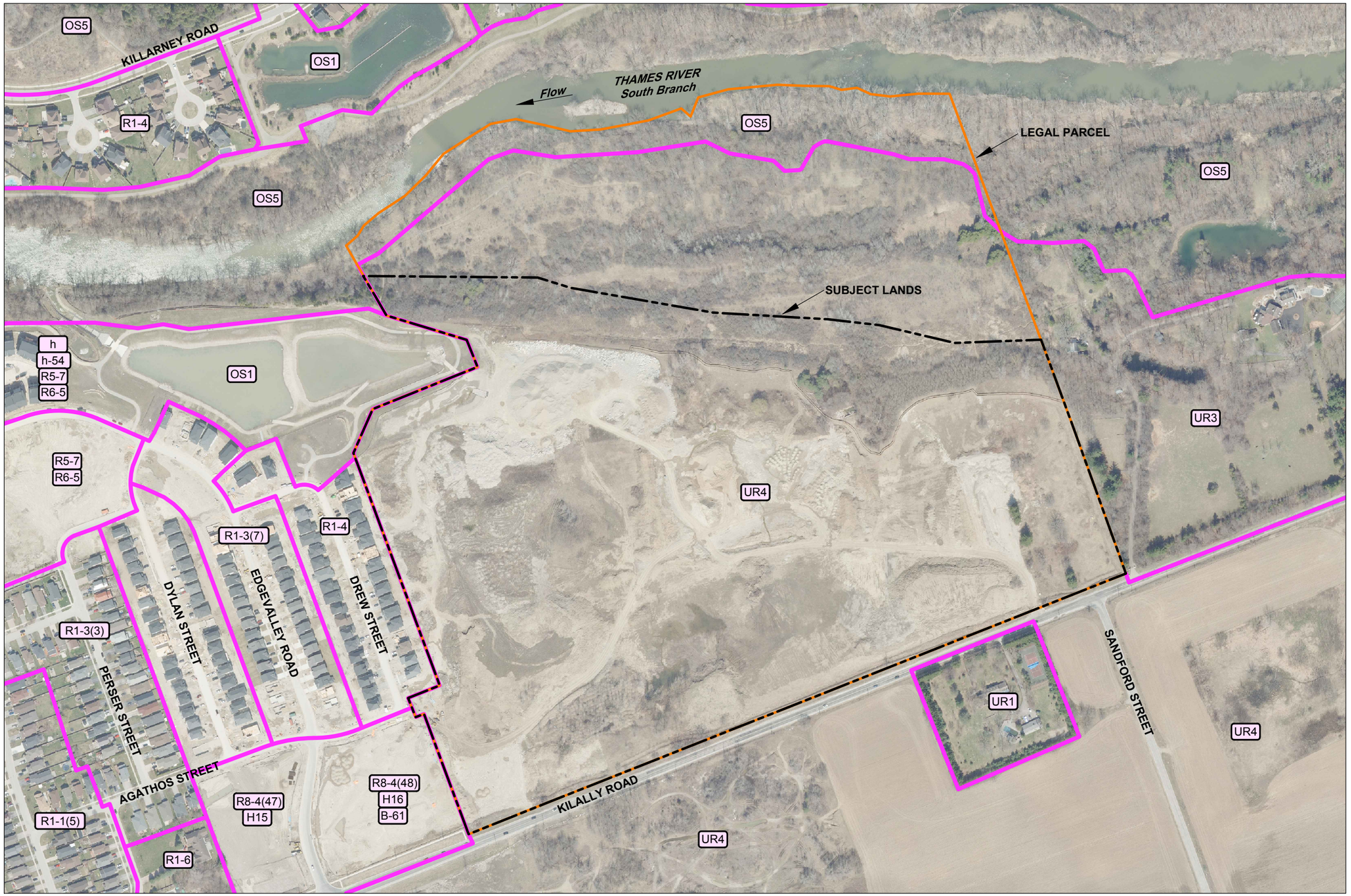

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LEGEND

- SUBJECT LANDS
- LEGAL PARCEL

- ER ENVIRONMENTAL REVIEW ZONE
- OS OPEN SPACE ZONE
- R RESIDENTIAL ZONE
- UR URBAN RESERVE ZONE

- h HOLDING ZONE PROVISION
- H MAXIMUM DENSITY PERMITTED
- D MAXIMUM HEIGHT PERMITTED

SCALE IN METRES
0 50 100
1:4,000

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET; AND
CITY OF LONDON ZONING INTERACTIVE MAP.

NOTES

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ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7,
CONCESSION 4, LONDON, ONTARIO

TITLE
ZONING

Drawn: DCH	Scale: AS SHOWN
Checked	Project No.: 42024-601
Date: June 2/22	Rev No.: 0

FIGURE 4

Client: Drewlo Holdings Inc.

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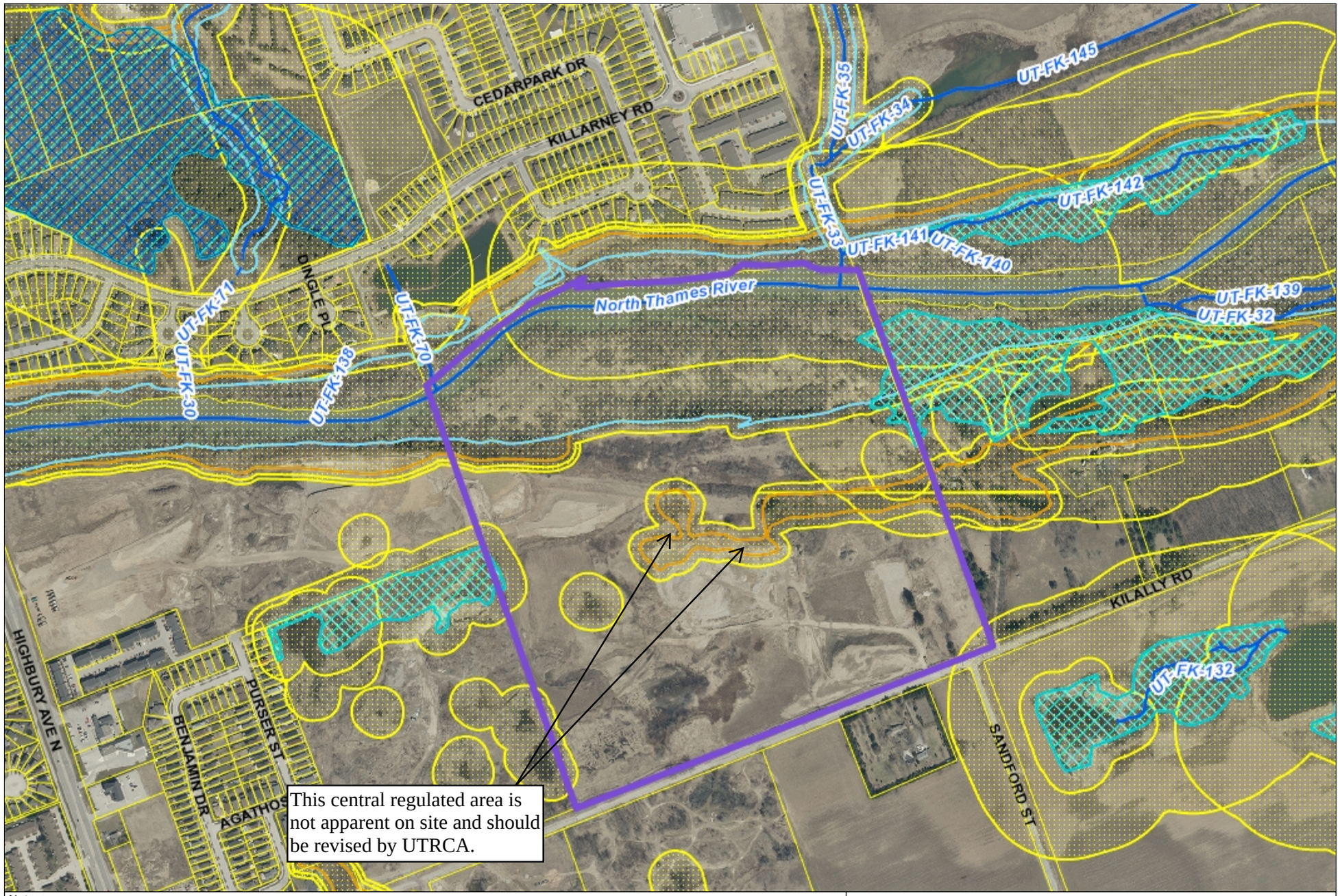

Regulation Limit

Regulation under s.28 of the *Conservation Authorities Act*

Development, interference with wetlands, and alterations to shorelines and watercourses. O.Reg 157/06, 97/04.

Legend

- Assessment Parcel (MPAC)
- Watercourse (UTRCA, 2015)
  - Open
  - Tiled
- Wetlands (MNRF)
  - Evaluated-Provincial
  - Evaluated-Other
  - Not Evaluated
- Wetland Hazard
- Flooding Hazard
- Erosion Hazard
- Regulation Limit 2018
- Regulation Limit (2006, Historic)

The Regulation Limit depicted on this map schedule is a representation of O.Reg 157/06 under O.Reg 97/04.

The Regulation Limit is a conservative estimation of the hazard lands within the UTRCA watershed. In the case of discrepancies between the mapping and the actual features on a property, the text of Ontario Regulation 157/06 prevails and the jurisdiction of the UTRCA may extend beyond areas shown on the maps.

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The UTRCA assumes no liability for any errors, omissions or inaccuracies in the information provided herein and further assumes no liability for any decisions made or actions taken or not taken by any person in reliance upon the information and data furnished hereunder.

This map is not a substitute for professional advice. Please contact UTRCA staff for any changes, updates and amendments to the information provided.

This document is not a Plan of Survey.

Sources: Base data, 2015 Aerial Photography used under licence with the Ontario Ministry of Natural Resources Copyright © Queen's Printer for Ontario; City of London.

UPPER THAMES RIVER CONSERVATION AUTHORITY

Notes:
1782 Kilally Road, London - Edgevalley Phase 2

Created By: CC September 14, 2020

Figure 5: UTRCA Regulated Areas

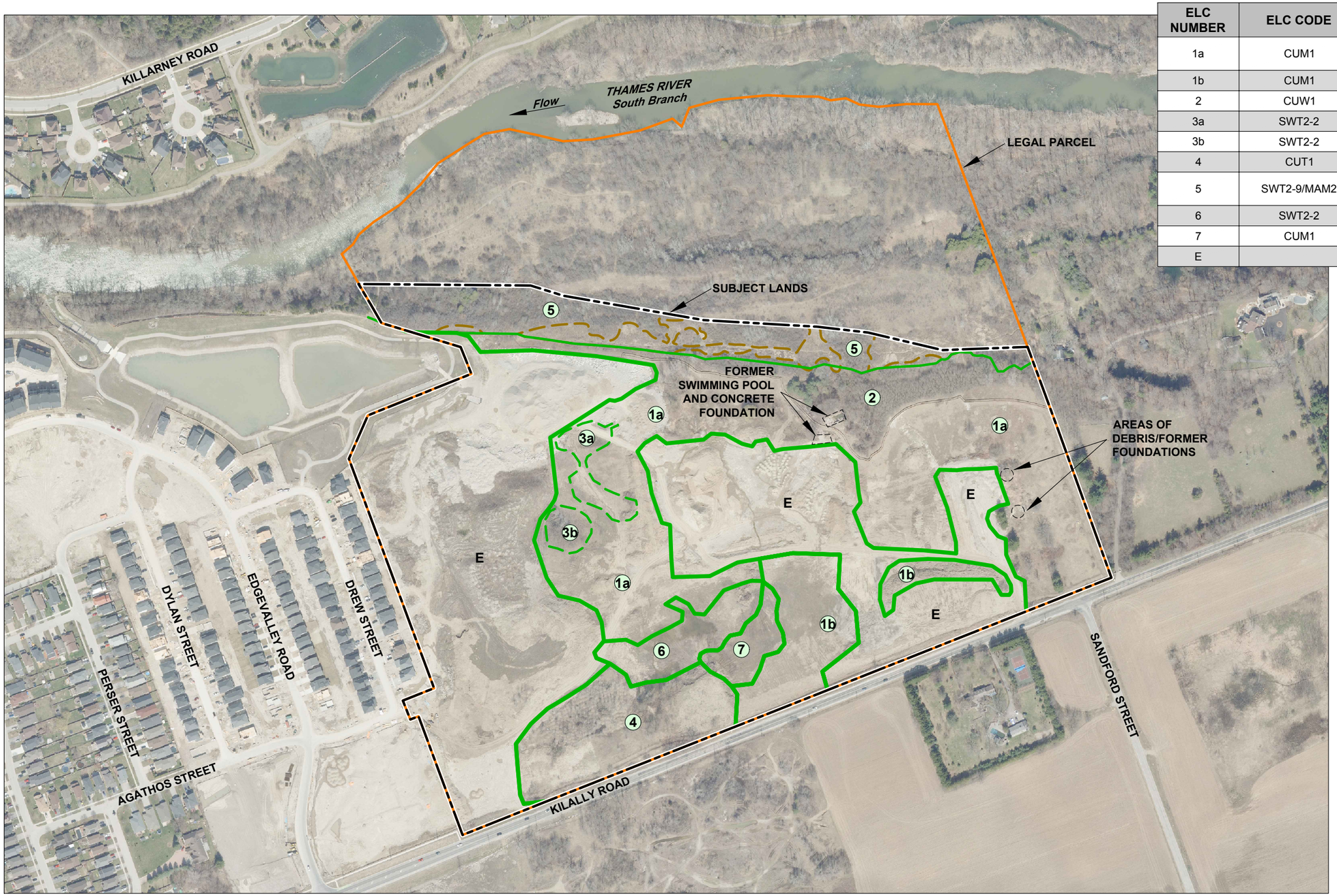
* Please note: Any reference to scale on this map is only appropriate when it is printed landscape on legal-sized (8.5" x 14") paper.

0 129 258 515
metres
1:6,441

N

Client: Drewlo Holdings Inc.

ELC NUMBER	ELC CODE	Description
1a	CUM1	Mineral Cultural Meadow - Grass Dominant (6.62ha)
1b	CUM1	Mineral Cultural Meadow (1.42ha)
2	CUW1	Mineral Cultural Woodland (1.11ha)
3a	SWT2-2	Willow Mineral Thicket Swamp (0.30ha)
3b	SWT2-2	Willow Mineral Thicket Swamp (0.16ha)
4	CUT1	Mineral Cultural Thicket (1.75ha)
5	SWT2-9/MAM2	Gray Dogwood Mineral Thicket Swamp/Phragmites/Cattail Marsh (2.35ha)
6	SWT2-2	Willow Mineral Thicket Swamp (0.69ha)
7	CUM1	Cultural Meadow - Phragmites (0.37ha)
E		Extraction (11.32ha)



N

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- (1) VEGETATION COMMUNITY
- VEGETATION COMMUNITY (Willow Mineral Thicket Swamp Inclusion)
- VEGETATION COMMUNITY (Phragmites Inclusions)

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET.

NOTES

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ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7, CONCESSION 4, LONDON, ONTARIO

TITLE
VEGETATION COMMUNITIES

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 42024-601
Date: June 2/22	Rev No.: 0

FIGURE 6

CAD: P:\42024\601\2_PROD\42024-601-R01 ENVIRONMENTAL IMPACT STUDY\42024-601-R01006.DWG
Original Format in Tabloid (279mm x 432mm; 11" x 17")
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0

Client: Drewlo Holdings Inc.

ELC NUMBER	ELC CODE	Description
1a	CUM1	Mineral Cultural Meadow - Grass Dominant (6.62ha)
1b	CUM1	Mineral Cultural Meadow (1.42ha)
2	CUW1	Mineral Cultural Woodland (1.11ha)
3a	SWT2-2	Willow Mineral Thicket Swamp (0.30ha)
3b	SWT2-2	Willow Mineral Thicket Swamp (0.16ha)
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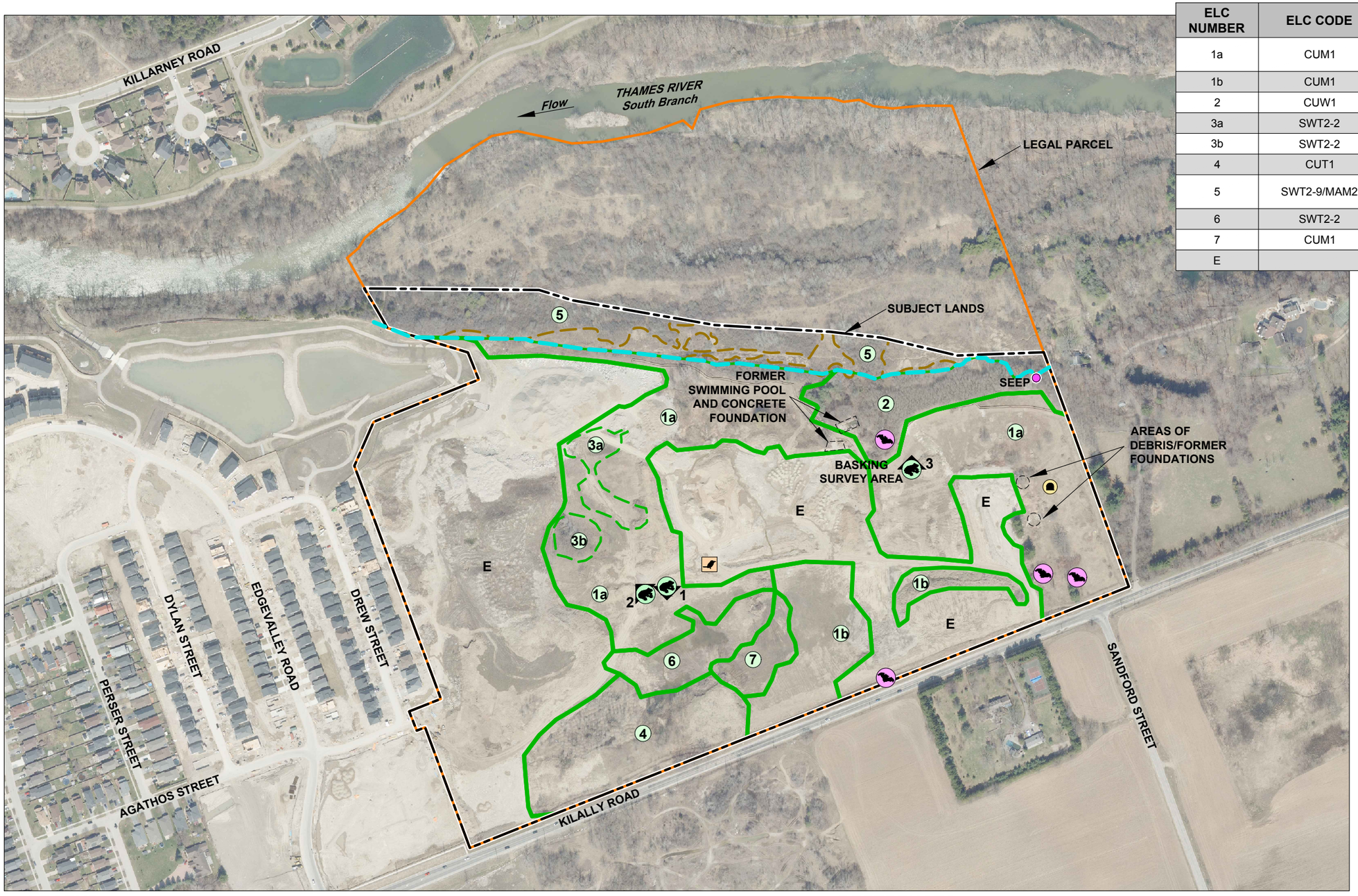
6	SWT2-2	Willow Mineral Thicket Swamp (0.69ha)
7	CUM1	Cultural Meadow - Phragmites (0.37ha)
E		Extraction (11.32ha)



N

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- (1) VEGETATION COMMUNITY
- VEGETATION COMMUNITY (Willow Mineral Thicket Swamp Inclusion)
- VEGETATION COMMUNITY (Phragmites Inclusions)
- ESA BOUNDARY
- CANDIDATE MATERNITY ROOST TREE
- AMPHIBIAN BREEDING SURVEY STATION (LOCATION AND VIEWING DIRECTION)
- MAMMAL BURROW/UNDERGROUND ACCESS
- ACTIVE BARN SWALLOW NEST (2022)

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET; AND
EXP, BOREHOLE LOCATION PLAN, APRIL 2022 HYDROGEOLOGICAL REPORT.

NOTES

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

ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7,
CONCESSION 4, LONDON, ONTARIO

TITLE
SURVEY STATIONS AND KEY FIELD FINDINGS

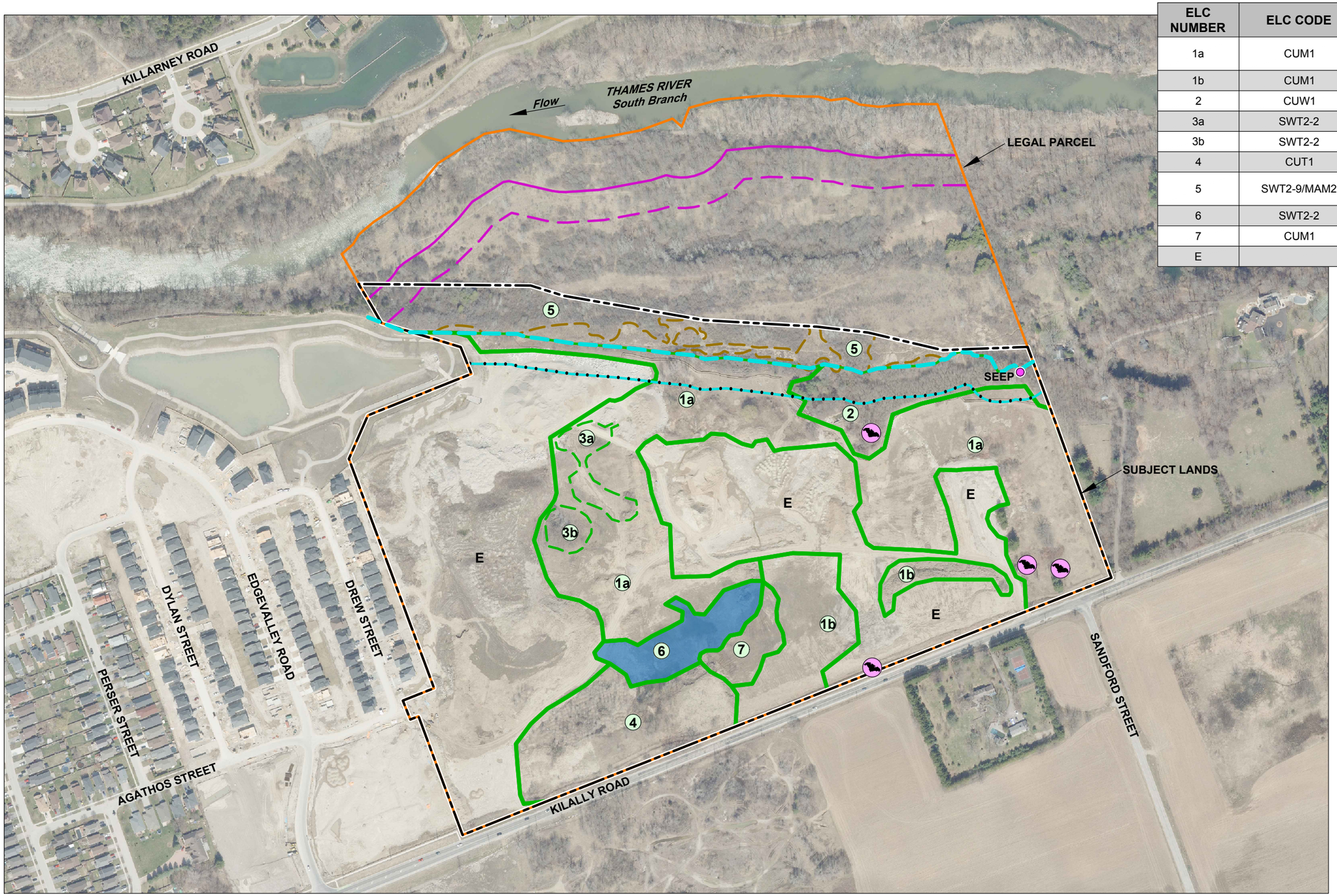
Drawn	DCH	Scale	AS SHOWN
Checked		Project No.	42024-601
Date	June 9/22	Rev No.	0

FIGURE 7

CAD: P:\42024\601\2_PROD\42024-601-R01 ENVIRONMENTAL IMPACT STUDY\42024-601-R01007.DWG
Original Format in Tabloid (279mm x 432mm; 11" x 17")
0 25mm

Client: Drewlo Holdings Inc.

ELC NUMBER	ELC CODE	Description
1a	CUM1	Mineral Cultural Meadow - Grass Dominant (6.62ha)
1b	CUM1	Mineral Cultural Meadow (1.42ha)
2	CUW1	Mineral Cultural Woodland (1.11ha)
3a	SWT2-2	Willow Mineral Thicket Swamp (0.30ha)
3b	SWT2-2	Willow Mineral Thicket Swamp (0.16ha)
4	CUT1	Mineral Cultural Thicket (1.75ha)
5	SWT2-9/MAM2	Gray Dogwood Mineral Thicket Swamp/Phragmites/Cattail Marsh (2.35ha)
6	SWT2-2	Willow Mineral Thicket Swamp (0.69ha)
7	CUM1	Cultural Meadow - Phragmites (0.37ha)
E		Extraction (11.32ha)



N

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- (1) VEGETATION COMMUNITY
- VEGETATION COMMUNITY (Willow Mineral Thicket Swamp Inclusion)
- VEGETATION COMMUNITY (Phragmites Inclusions)
- LONDON PLAN WETLAND
- SIGNIFICANT VALLEYLAND (London Plan Map 5, 2021a)
- EMG RECOMMENDED 30m BUFFER FROM SIGNIFICANT VALLEYLAND (London Plan Map 5, 2021a)
- ESA BOUNDARY
- EMG RECOMMENDED 30m BUFFER (2021) FROM ESA BOUNDARY
- CANDIDATE MATERNITY ROOST TREE

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET; AND
DEVELOPMENT PLAN PROVIDED BY DREWLOAD HOLDINGS INC. ON APRIL 8 - 2022, AUTOCAD FILE "42024-124 150m NEW ESA-SK1.dwg"

NOTES

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

ALL LOCATIONS ARE APPROXIMATE.

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7,
CONCESSION 4, LONDON, ONTARIO

TITLE
PROTECTION OF NATURAL HERITAGE FEATURES CONSIDERATIONS

Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 42024-601
Date: June 2/22	Rev No.: 0

FIGURE 8

CAD: P:\42024\601\2_PROD\42024-601-R01 ENVIRONMENTAL IMPACT STUDY\42024-601-R01008.DWG
Original Format in Tabloid (279mm x 432mm; 11" x 17")
0 25mm

Figure 9: Development Plan (MTE, June 2022)

MTE FILE No: P:\PV\42024\124\DWG\42024-124 150M NEW ESA-SK1

date – time – CADTAG

THAMES RIVER (NORTH BRANCH) FLOW

P.I.N. 08146 – 0149

UNPATENTED LAND

SEE DETAIL

BLOCK 131 (0.3m RESERVE) P.I.N. 08146-1335

BLOCK 130 P.I.N. 08146-1340

BLOCK 245
WALKWAY BLOCK
AREA=0.061 HA

BLOCK 243
PARK
AREA=0.118 HA

LIMIT OF DEVELOPMENT

APPROX. VISIBLE SLOPE CHANGE (TOP OF SLOPE)

LIMIT OF DEVELOPMENT

BLOCK 244
WALKWAY BLOCK
AREA=0.573 HA

BLOCK 247
OPEN SPACE
AREA=14.471 HA

WETLAND BOUNDARY

DRIPLINE OF BUCKTHORNE AND MANITOBA MAPLE

LIMIT OF DEVELOPMENT

BLOCK 246
WALKWAY BLOCK
AREA=0.034 HA

TREE PRESERVATION AREA

32m TEMPORARY TURNING CIRCLE EASEMENT

BLOCK 251
0.3m RESERVE
AREA=0.001 HA

DREW STREET

AGATHOS STREET

STREET 'B'

STREET 'C'

STREET 'A'

STREET 'D'

BLOCK 240
M.D. RESIDENTIAL
AREA=4.200 HA

BLOCK 241
M.D. RESIDENTIAL
AREA=1.882 HA

BLOCK 242
M.D. RESIDENTIAL
AREA=1.882 HA

BLOCK 248
0.3m RESERVE
AREA=0.0089 HA

BLOCK 249
0.3m RESERVE
AREA=0.0057 HA

BLOCK 250
0.3m RESERVE
AREA=0.0052 HA

BLOCK 252
ROAD WIDENING
AREA=0.554 HA

ROAD ALLOWANCE BETWEEN CONCESSIONS 3 AND 4

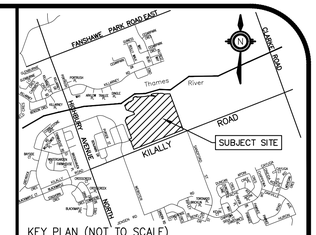
KNOWN AS KILALLY ROAD (WIDTH VARIES) P.I.N. 08146 – 0121

EDGE OF ASPHALT

CENTRE LINE OF ROAD

DETAIL not to scale

STADIA TABLE		
STATIONS	BEARING	DISTANCE
A – A1	N14°12'05"E	0.79
A – A2	N43°57'17"E	16.41
B – B1	N40°29'30"W	13.53
B – B2	N21°00'15"E	27.67
B – B3	N45°23'56"E	47.84
B – B4	N50°48'18"E	55.15
C – C1	N89°44'23"E	5.72
C – C2	N13°22'57"E	21.59
C – C3	N19°42'30"E	42.03
C – C4	N28°14'45"E	53.27
C – C5	N38°25'24"E	65.02
C – C6	N52°46'25"E	68.51
C – C7	N57°56'56"E	87.81
C – C8	N68°59'23"E	136.38
C – C9	N72°49'48"E	188.70
D – D1	N68°28'22"E	37.97
D – D2	N50°16'29"E	20.93
D – D3	N52°03'13"W	33.96
D – D4	N89°38'22"E	27.81
D – D5	N35°52'34"W	12.91
D – D6	N41°35'27"E	19.34
D – D7	N73°24'51"E	61.32
E – E1	N82°55'02"W	122.92
E – E2	N81°26'23"W	98.82
E – E3	N86°11'43"W	79.81
E – E4	N78°23'34"W	40.30
E – E5	N31°12'24"W	10.23



KEY PLAN (NOT TO SCALE)

OWNER'S CERTIFICATE

I HEREBY AUTHORIZE:
MTE CONSULTANTS INC.
TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF LONDON

ALLAN DREWLO
DREWLO HOLDINGS INC.
DATE

SURVEYOR'S CERTIFICATE

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

PATRICK LEVAC
ONTARIO LAND SURVEYOR
MTE OLS LTD.
DATE

REQUIREMENTS of SECTION 51(17) of the PLANNING ACT

(A) SEE PLAN	(E) SEE PLAN	(I) SILTY LOAM 50% POROSITY
(B) SEE PLAN	(F) SEE PLAN	(J) SEE PLAN
(C) SEE PLAN	(G) SEE PLAN	(K) FULL MUNICIPAL SERVICES
(D) SEE PLAN	(H) MUNICIPAL WATER	(L) NONE

	(IN Ha)
LOTS 1–239 – SINGLE FAMILY RESIDENTIAL	8.748 ha
BLOCKS 240–242 – MED. DENSITY RESIDENTIAL	7.964 ha
BLOCK 243 – PARK	0.118 ha
BLOCK 244–246 – WALKWAY BLOCK	0.668 ha
BLOCKS 247 – OPEN SPACE	14.471 ha
BLOCKS 248–251 – 0.3m RESERVE	0.021 ha
BLOCK 252 – ROAD WIDENING	0.554 ha
ROADS	4.208 ha
TOTAL	36.752 ha

No.	REVISION	BY	DATE
6.			
5.			
4.			
3.			
2.			
1.			

City of London

MTE

519-204-6510 www.mte85.com

OWNER
DREWLO HOLDINGS INC.

PROJECT
EDGEVALLEY SUBDIVISION PHASE 2
LONDON ONTARIO

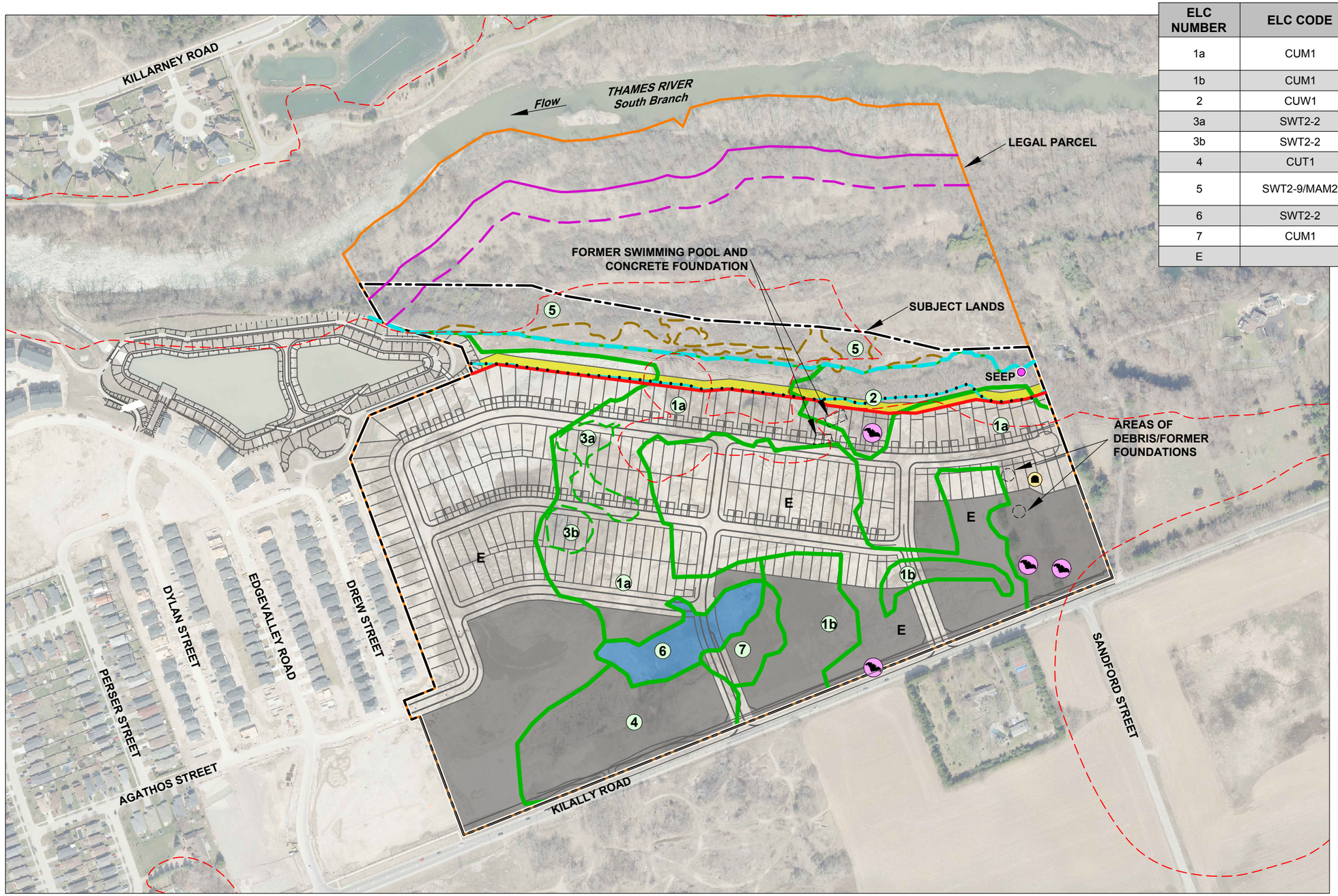
DRAWING
DRAFT PLAN OF SUBDIVISION

LEGAL DESCRIPTION

PLAN OF SURVEY
OF PART OF
LOT 7, CONCESSION 4
(GEOGRAPHIC TOWNSHIP OF LONDON)
AND PART OF
LOTS 10 AND 17
REGISTERED PLAN No. 91
IN THE
CITY OF LONDON
COUNTY OF MIDDLESEX

Project Manager JPF	Project No.
Design By MTE	Checked By
Drawn By MTE	Checked By
Surveyed By MTE	Drawing No.
Date MAR/22	
Scale 1:1250	Sheet 1 of 1

Client: Drewlo Holdings Inc.



ELC NUMBER	ELC CODE	Description
1a	CUM1	Mineral Cultural Meadow - Grass Dominant (6.62ha)
1b	CUM1	Mineral Cultural Meadow (1.42ha)
2	CUW1	Mineral Cultural Woodland (1.11ha)
3a	SWT2-2	Willow Mineral Thicket Swamp (0.30ha)
3b	SWT2-2	Willow Mineral Thicket Swamp (0.16ha)
4	CUT1	Mineral Cultural Thicket (1.75ha)
5	SWT2-9/MAM2	Gray Dogwood Mineral Thicket Swamp/Phragmites/Cattail Marsh (2.35ha)
6	SWT2-2	Willow Mineral Thicket Swamp (0.69ha)
7	CUM1	Cultural Meadow - Phragmites (0.37ha)
E		Extraction (11.32ha)

N

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- VEGETATION COMMUNITY
- VEGETATION COMMUNITY (Willow Mineral Thicket Swamp Inclusion)
- VEGETATION COMMUNITY (Phragmites Inclusions)
- LIMIT OF PROPOSED DEVELOPMENT
- SIGNIFICANT VALLEYLAND (London Plan Map 5, 2021a)
- EMG RECOMMENDED 30m BUFFER FROM SIGNIFICANT VALLEYLAND (London Plan Map 5, 2021a)
- LONDON PLAN WETLAND
- MEDIUM DENSITY RESIDENTIAL BLOCK (Undefined Lots)
- ESA BOUNDARY
- EMG RECOMMENDED 30m BUFFER (2021) FROM ESA BOUNDARY
- UTRCA REGULATION LIMIT
- BLOCK 244 (WALKWAY)
- CANDIDATE MATERNITY ROOST TREE
- MAMMAL BURROW/UNDERGROUND ACCESS

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET; AND
MTE DRAFT PLAN OF DEVELOPMENT, JUNE 2022.

NOTES

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ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 50 100
1:4,000

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7, CONCESSION 4, LONDON, ONTARIO

TITLE
DEVELOPMENT OVERLAY

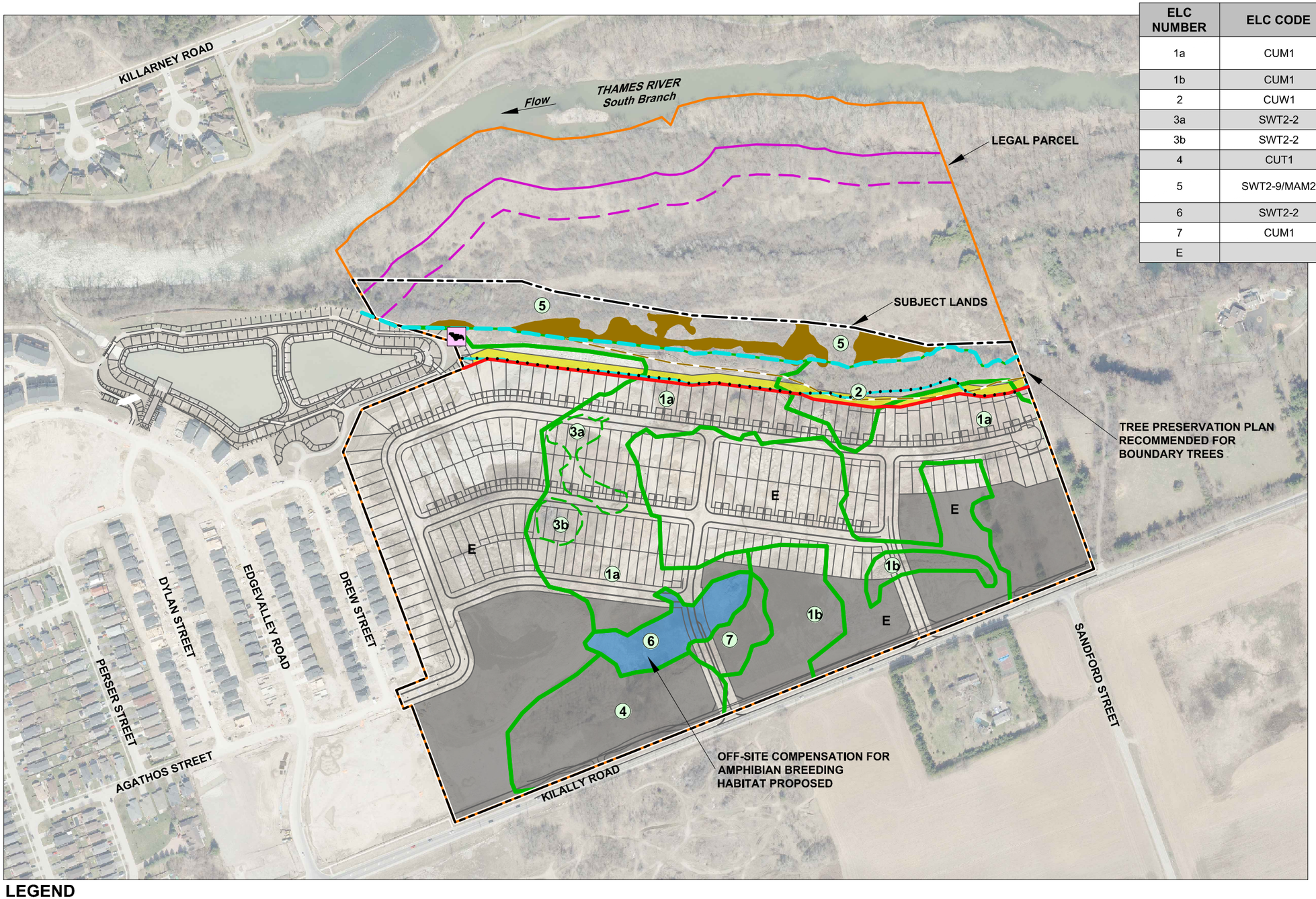
Drawn: DCH	Scale: AS SHOWN
Checked:	Project No.: 42024-601
Date: June 27/22	Rev No.: 0

FIGURE 10

CAD: P:\42024\601\2_PROD\42024-601-R01 ENVIRONMENTAL IMPACT STUDY\42024-601-R01010.DWG
25mm
0
Original Format in Tabloid (279mm x 432mm; 11" x 17")

Client: Drewlo Holdings Inc.

ELC NUMBER	ELC CODE	Description
1a	CUM1	Mineral Cultural Meadow - Grass Dominant (6.93ha)
1b	CUM1	Mineral Cultural Meadow (1.42ha)
2	CUW1	Mineral Cultural Woodland (1.10ha)
3a	SWT2-2	Willow Mineral Thicket Swamp (0.30ha)
3b	SWT2-2	Willow Mineral Thicket Swamp (0.16ha)
4	CUT1	Mineral Cultural Thicket (1.75ha)
5	SWT2-9/MAM2	Gray Dogwood Mineral Thicket Swamp/Phragmites/Cattail Marsh (2.45ha)
6	SWT2-2	Willow Mineral Thicket Swamp (0.69ha)
7	CUM1	Cultural Meadow - Phragmites (0.37ha)
E		Extraction (11.32ha)



N

REFERENCES

CITY OF 2021 LONDON PARCEL, ROAD AND WATER FEATURES, AND AERIAL IMAGERY, OPEN DATA SET; AND
MTE DRAFT PLAN OF DEVELOPMENT, JUNE 2022.

NOTES

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ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES
0 50 100
1:4,000

LEGEND

- SUBJECT LANDS
- LEGAL PARCEL
- (1) VEGETATION COMMUNITY
- VEGETATION COMMUNITY (Willow Mineral Thicket Swamp Inclusion)
- PHRAGMITES INCLUSIONS IN VEGETATION COMMUNITY 5
- LIMIT OF DEVELOPMENT
- APPROXIMATE TOP OF SLOPE (MTE, 2022)
- SIGNIFICANT VALLEYLAND (London Plan Map 5, 2021a)
- EMG RECOMMENDED 30m BUFFER FROM SIGNIFICANT VALLEYLAND (London Plan Map 5, 2021a)
- OFF-SITE COMPENSATION FOR AMPHIBIAN BREEDING HABITAT PROPOSED
- MEDIUM DENSITY RESIDENTIAL BLOCK (Undefined Lots)
- ESA BOUNDARY
- EMG RECOMMENDED 30m BUFFER (2021) FROM ESA BOUNDARY
- BLOCK 244 (WALKWAY)
- CONCEPTUAL ROCKET-STYLE BAT BOX

MTE
Engineers, Scientists, Surveyors

PROJECT
ENVIRONMENTAL IMPACT STUDY
1782 KILALLY ROAD, PART LOT 7, CONCESSION 4, LONDON, ONTARIO

TITLE
BUFFERS AND RECOMMENDED MITIGATION MEASURES

Drawn	Scale
DCH	AS SHOWN
Checked	Project No.
	42024-601
Date	Rev No.
June 27/22	0

FIGURE 11

CAD: P:\42024\601\2_PROD\42024-601-R01 ENVIRONMENTAL IMPACT STUDY\42024-601-R01011.DWG
25mm
0
Original Format in Tabloid (279mm x 432mm; 11" x 17")

Appendix A

Record of Pre-Application Consultation

Laura McLennan

From: Species at Risk (MECP) <SAROntario@ontario.ca>
Sent: Friday, February 28, 2020 2:06 PM
To: Laura McLennan
Cc: Dave Hayman; 'Carrie O'Brien'; 'George Bikas'
Subject: RE: Drewlo - Edgevalley Phase 2, London, Middlesex
Attachments: 42024-601L01 20200108 MECP response_final_compiled.pdf

Hello Laura,

RE: Edgevalley Subdivision Phase 2, Kilally Road, City of London and the *Endangered Species Act, 2007*

The Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) has reviewed the attached information, in addition to the information provided August 29, 2019, to assess the potential impacts of the development project on endangered and threatened species at risk (SAR) protected under the *Endangered Species Act, 2007* (ESA 2007).

Based on SARB's review of the project documentation and information that has been provided, the conclusions that you and Drewlo Holdings Inc. have made - that neither section 9 (species protection) nor section 10 (habitat protection) of the ESA 2007 will be contravened for endangered and threatened SAR - appear reasonable and valid.

Should any of the project activities change from what has been presented to MECP, please notify SARB immediately (SAROntario@ontario.ca) to obtain guidance on whether the changes require authorization under the ESA 2007 in order to remain in compliance with the Act. Failure to carry out the project as described to MECP could potentially result in contravention of the ESA 2007. Please be advised that it is the proponent's responsibility to be aware of and comply with all other relevant provincial or federal requirements, municipal by-laws or required approvals from other agencies.

MECP notes that Drewlo Holdings Inc. has committed to mitigation measures being implemented as part of the project to ensure that unanticipated impacts to Eastern Hog-nosed Snake do not occur. We encourage Drewlo Holdings Inc. to carry out such mitigation measures, and other best management practices as deemed appropriate. Further, it is recommended that you and the proponent continue to monitor for SAR activity during the course of the project to document changes, in the event that there should be any.

The position of SARB is based on the information that has been provided by you on behalf of Drewlo Holdings Inc. Should information not have been made available and considered in our review, or new information comes to light that changes the conclusions made by you and the proponent, or if on-site conditions and circumstances change so as to alter the basis for your conclusions, please contact SARB as soon as possible (SAROntario@ontario.ca) to discuss next steps.

Regards,

Catherine Stewart
Management Biologist
Permissions and Compliance, Species at Risk Branch
Ministry of the Environment, Conservation and Parks

From: Laura McLennan <LMcLennan@mte85.com>
Sent: January-13-20 4:17 PM

Allie Leadbetter

From: Species at Risk (MECP) <SAROntario@ontario.ca>
Sent: Wednesday, June 15, 2022 4:06 PM
To: Allie Leadbetter
Subject: RE: Bank Swallow Habitat Protection Inquiry

Hi Allie,

If the birds have only recently started nesting (as of this year) and this has been confirmed through multi-year surveys, once the active season is completed (after September 15th) you would be able to remove the mound to prevent further nesting without need for authorization. I would recommend placing mitigation measures prior to next year's breeding season (April) to prevent the mound from being utilized by the birds again once they've returned – which I see you've mentioned doing in your email and continued active monitoring of the site throughout the breeding season.

Please let me know if you have any further questions.

Thanks,
Mandy

Mandy Shepherd
A/Fish and Wildlife Technical Specialist, Permissions Section
Species at Risk Branch
Ministry of the Environment, Conservation and Parks (MECP)
Peterborough, ON K9J 3C7

Please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Allie Leadbetter <ALeadbetter@mte85.com>
Sent: June 15, 2022 3:29 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Subject: RE: Bank Swallow Habitat Protection Inquiry

Hello,

The mound is quite small and hasn't been specifically monitored for when it was formed. The site has seen some disturbance from aggregate work and so it's uncertain exactly how long it's been there. Possibly it was altered this year and became more suitable for nesting, because no Bank Swallows were nesting there prior to this 2022 season based on surveys conducted in 2019, 2020 and 2022.

Bank Swallow began nesting only recently this year (first observed June 1, 2022). This mound did not have nest holes during site investigations in April and May 2022. They've only been present in this mound for the first time this year.

The entire site has since been searched and this is the only location they're currently present.

Let me know if you need any additional information.

Thanks,

Allie Leadbetter

Allie Leadbetter, B.Sc. | Biologist
MTE Consultants Inc.
T: 519-204-6510 x2243 | ALeadbetter@mte85.com
On Jun. 14, 2022 10:16 a.m., "Species at Risk (MECP)" <SAROntario@ontario.ca> wrote:

> Hi Allie,
>
> How long has the mound been there, and when did Bank Swallows begin nesting in it (this year, last two years etc.)?
>
> **Mandy Shepherd**
>
> A/Fish and Wildlife Technical Specialist, Permissions Section
>
> Species at Risk Branch
>
> Ministry of the Environment, Conservation and Parks (MECP)
>
> Peterborough, ON K9J 3C7
>
> Please let me know if you have any accommodation needs or require communication supports or alternate formats.
>
> ---
>
> **From:** Allie Leadbetter <ALeadbetter@mte85.com>
> **Sent:** June 9, 2022 10:49 AM
> **To:** Species at Risk (MECP) <SAROntario@ontario.ca>
> **Cc:** Dave Hayman <DHayman@mte85.com>
> **Subject:** Bank Swallow Habitat Protection Inquiry
> **Importance:** High
>
> **CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**
>
> Hello,

I was hoping to receive some guidance regarding some Bank Swallow habitat found on a site that has been proposed for residential development. The site was previously used for aggregate extraction, but is no longer under an active aggregate license. A small soil pile (see photo) has just become active nesting habitat for Bank Swallow this year, with about 20 nest holes having been excavated sometime in the last month or so. It has appropriately been sectioned off and the BMPs for protection of active nesting habitat are being followed (ex: informing workers on site, keeping 50 m in front of the entrance clear, etc.). These protections will obviously continue through the breeding season with frequent site visits to ensure protections are adequate.

Our question concerns what can be done after the breeding season is over. The BMP document (MNRF, 2017) focuses on protections and avoidance during the breeding season (Section 4.1) , but suggests in Section 4.2 that nest habitat does not need to be maintained in the same location year to year. Is it acceptable for the small area of nesting habitat on site to be removed after the breeding season is over and the nests are inactive? Soil stockpiles would then be managed to have slopes < 70 degrees to prevent further nesting before construction begins.

Guidance would be greatly appreciated and further details can be provided if necessary.

Thanks,

Allie Leadbetter

Allie Leadbetter, B.Sc. | **Biologist**
MTE Consultants Inc.
T: 519-204-6510 x2243 | ALeadbetter@mte85.com
123 St George St., London, Ontario N6A 3A1
www.mte85.com | Twitter | LinkedIn | Instagram | Facebook

On Jun. 14, 2022 10:16 a.m., "Species at Risk (MECP)" <SAROntario@ontario.ca> wrote:

Hi Allie,

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Mandy Shepherd

A/Fish and Wildlife Technical Specialist, Permissions Section

Species at Risk Branch

Ministry of the Environment, Conservation and Parks (MECP)

Peterborough, ON K9J 3C7

Please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Allie Leadbetter <ALeadbetter@mte85.com>
Sent: June 9, 2022 10:49 AM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Dave Hayman <DHayman@mte85.com>
Subject: Bank Swallow Habitat Protection Inquiry
Importance: High

Hello,

I was hoping to receive some guidance regarding some Bank Swallow habitat found on a site that has been proposed for residential development. The site was previously used for aggregate extraction, but is no longer under an active aggregate license. A small soil pile (see photo) has just become active nesting habitat for Bank Swallow this year, with about 20 nest holes having been excavated sometime in the last month or so. It has appropriately been sectioned off and the BMPs for protection of active nesting habitat are being followed (ex: informing workers on site, keeping 50 m in front of the entrance clear, etc.). These protections will obviously continue through the breeding season with frequent site visits to ensure protections are adequate.

Our question concerns what can be done after the breeding season is over. The BMP document (MNRF, 2017) focuses on protections and avoidance during the breeding season (Section 4.1) , but suggests in Section 4.2 that nest habitat does not need to be maintained in the same location year to year. Is it acceptable for the small area of nesting habitat on site to be removed after the breeding season is over and the nests are inactive? Soil

stockpiles would then be managed to have slopes < 70 degrees to prevent further nesting before construction begins.

Guidance would be greatly appreciated and further details can be provided if necessary.

Thanks,

Allie Leadbetter

Allie Leadbetter, B.Sc. | **Biologist**
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123 St George St., London, Ontario N6A 3A1
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How long has the mound been there, and when did Bank Swallows begin nesting in it (this year, last two years etc.)?

Mandy Shepherd

A/Fish and Wildlife Technical Specialist, Permissions Section

Species at Risk Branch

Ministry of the Environment, Conservation and Parks (MECP)

Peterborough, ON K9J 3C7

Please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Allie Leadbetter <ALeadbetter@mte85.com>
Sent: June 9, 2022 10:49 AM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Dave Hayman <DHayman@mte85.com>
Subject: Bank Swallow Habitat Protection Inquiry
Importance: High

Hello,

I was hoping to receive some guidance regarding some Bank Swallow habitat found on a site that has been proposed for residential development. The site was previously used for aggregate extraction, but is no longer under an active aggregate license. A small soil pile (see photo) has just become active nesting habitat for Bank Swallow this year, with about 20 nest holes having been excavated sometime in the last month or so. It has appropriately been sectioned off and the BMPs for protection of active nesting habitat are being followed (ex: informing workers on site, keeping 50 m in front of the entrance clear, etc.). These protections will obviously continue through the breeding season with frequent site visits to ensure protections are adequate.

Our question concerns what can be done after the breeding season is over. The BMP document (MNRF, 2017) focuses on protections and avoidance during the breeding season (Section 4.1) , but suggests in Section 4.2 that nest habitat does not need to be maintained in the same location year to year. Is it acceptable for the small area of nesting habitat on site to be removed after the breeding season is over and the nests are inactive? Soil stockpiles would then be managed to have slopes < 70 degrees to prevent further nesting before construction begins.

Guidance would be greatly appreciated and further details can be provided if necessary.

Thanks,

Allie Leadbetter

Allie Leadbetter, B.Sc. | **Biologist**
MTE Consultants Inc.
T: 519-204-6510 x2243 | ALeadbetter@mte85.com
123 St George St., London, Ontario N6A 3A1
www.mte85.com | Twitter | LinkedIn | Instagram | Facebook

On Jun. 14, 2022 10:16 a.m., "Species at Risk (MECP)" <SAROntario@ontario.ca> wrote:

Hi Allie,

How long has the mound been there, and when did Bank Swallows begin nesting in it (this year, last two years etc.)?

Mandy Shepherd

A/Fish and Wildlife Technical Specialist, Permissions Section

Species at Risk Branch

Ministry of the Environment, Conservation and Parks (MECP)

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>
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> **Sent:** June 9, 2022 10:49 AM
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> **Subject:** Bank Swallow Habitat Protection Inquiry
> **Importance:** High
>
> **CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**
>
> Hello,
>
> I was hoping to receive some guidance regarding some Bank Swallow habitat found on a site that has been proposed for residential development. The site was previously used for aggregate extraction, but is no longer under an active aggregate license. A small soil pile (see photo) has just become active nesting habitat for Bank Swallow this year, with about 20 nest holes having been excavated sometime in the last month or so. It has appropriately been sectioned off and the BMPs for protection of active nesting habitat are being followed (ex: informing workers on site, keeping 50 m in front of the entrance clear, etc.). These protections will obviously continue through the breeding season with frequent site visits to ensure protections are adequate.

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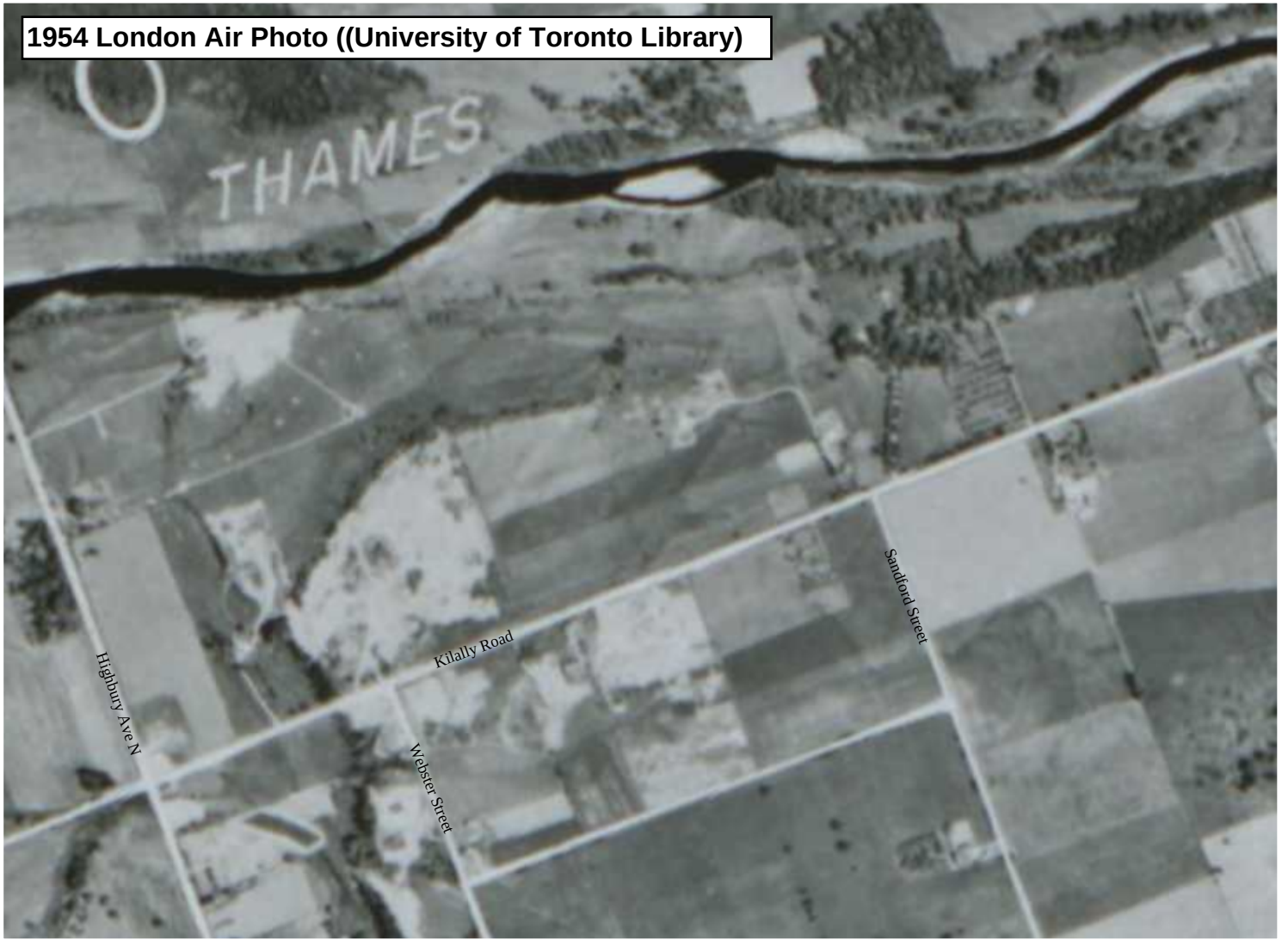
Appendix B

Historical Air Photos


City of London Air Photo - 2000
Killarney Rd
Drew St
Dylan St
Edgevalley Rd
Agathos St
Kilally Rd
Kilally Rd
Kilally Rd
Sandford St


City of London Air Photo - 2001
Killarney Rd
Drew St
Dylan St
Edgevalley Rd
Agathos St
Kilally Rd
Kilally Rd
Kilally Rd
Sandford St


1954 London Air Photo ((University of Toronto Library)
THAMES
Highbury Ave N
Kilally Road
Webster Street
Sandford Street

Appendix C

Ecological Land Classification

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Edge Valley - 42024-601		POLYGON: 1	
SURVEYOR(S): WH	DATE: Jn3 May 8	TIME: start	finish
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☒ GRAMINOID	☐ STREAM
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	1	ACERsas = JUGLnig = PICEabi
2	SUB-CANOPY			
3	UNDERSTOREY	3	1	MORUalba = RHUStyp > LONI tat
4	GRD. LAYER	6	4	BRO.Mine = DACTglo

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:	MEADOW	CUM
ECOSITE:	MINERAL	CUM1-
VEGETATION TYPE:	DRY-MOIST OLD FIELD MEADOW	CUM1-1
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE: 42024
POLYGON: 1
DATE: May 8
SURVEYOR(S): WH

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	0
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	0
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 PLANT SPECIES LIST

SITE: 42024-601
POLYGON: 1
DATE: May 8, Jn 3, Jn 19, Aug 20
SURVEYOR(S): MN

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.
ACERsac	O				
MALUcom		O			
PICEabi	O				
ACERneg	O	O			
JUGLnig	O	O			
CELTocc		O			
MORMalb					
ELEAumb					
CLEMvir					
ROSA					PINK
RHUSty			O		
LONIdat			O		

SPECIES CODE	LAYER 1	2	3	4	COL.
RANUacr					
HYDRvir					
SYMPpar					
TRAGoff					
ARCTmin					
COTUcor					
HESPmat					
TRIFarv					
PLANlan					
SILEvul					
RUMEcri					
CIRSvul					
ERIGann					
MELLoff					
MELLalb					
VICIcra					
TRIFprat					
LEUCvul					
SILEauc					
CIRCvul				O	
NEPAcat				O	
FALOjap			O		
RUBUocc			O		
GLECher				A	
BROMine				D	
ELEAumb		O			
VERBtha				A	
DAUCcar				O	
TARAoff				O	
BARBvul				O	
ALLIpet				A	

ELC PLANT SPECIES LIST

SITE:
POLYGON: 1
DATE: Jn 20, Aug 20
SURVEYOR(S):

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.

SPECIES CODE	LAYER 1	2	3	4	COL.
ECHIhis					
SONCole					
TANAvul					
AMBRart					
SOLIcan					
MISCsac					
HIERvul					
ARGRaig					
CONVarv					
POAPalu					
PINEpra					
ASCLsyr					
HELIann					

ELC — WILDLIFE

SITE:	42024-661
POLYGON:	1
DATE:	Jn 3, 2019
SURVEYOR(S):	WN
START TIME:	6:30
END TIME:	

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
8	0	0	0

CONDITIONS: clear, cool, light breeze

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	YEWA	SM	III	
	AMGO	P	HHT II	
	WIFL	SM	III	
	AMRO	FY FS	HHT II	
	WAVI	SM	II	
	RWBL	P	HHT II	
	SOSP	P FY	HHT HHT	
	BLJA	VO	III	
	FISP	SM	III	
	KILL	P	HHT II	
	INBU		II	
	WITU	TK OB	3	
	BHCO	O	HHT II	
	NOFL	SM	I	
	SPSA	T	IIII	

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 — WILDLIFE

SITE:	42024
POLYGON:	1
DATE:	Jn 20, 2019
SURVEYOR(S):	WN
START TIME:	8:15
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	#
	BHCO		HHT II	
	SOSP		II	
	RWBL		II	
	CEDW	FY	HHT	
	BLJA		I	
	COGR	T	II	
	RBWO	VO	I	
	NOFL	T	I	
	AMGO	FY	HHT I	
	GRCA	T	III	
	INBU	P	III	
	YEWA	SM	HHT	
	COYE	SM	I	
	BAOR	OB	I	
	FISP	SM	II	
	RANS	NE	III holes	
	SPSA	T	IIII	
	KILL	P	HHT III	

TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

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OTHER WILDLIFE EVIDENCE:
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DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 42024-601		POLYGON: 2	
SURVEYOR(S): WN	DATE: May 8	TIME: start / finish	
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
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	3	ACERnegu ≥ ACERpla = POPdelt
2	SUB-CANOPY			
3	UNDERSTOREY	3	3	LONItat = RHAMcat
4	GRD. LAYER	6	4	ALLIpet = GEUMall

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:

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

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:	WOODLAND	CUW
ECOSITE:	MINERAL	CUW1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE: 42024
POLYGON: 2 bank
DATE: May 8
SURVEYOR(S): WN

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	3
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	1
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	4
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	6
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	2
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	0
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC
PLANT SPECIES LIST

SITE: 42024-601
POLYGON: 2 bank
DATE: May 8 Jn 3, June 25
SURVEYOR(S): WN

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.
ACERneg	D				
POPUdel					
CELTocc					
CORNser					
ACERpla					
BETUpen					
PINUres					
PINUsyl					
FAGUgra					
QUERmac		R			
CORNser					
PARTvit					
SYRYvul					
CORNalt					
VITIrip					
PRUNvir					
LONIhat					
FALLjap					

SPECIES CODE	LAYER 1	2	3	4	COL.
SYMPfoe				R	
ACERgla				R	
SALIalb			O		
LYTHsal					
MENTspi					
BROMine					
GEUMcan					
SOLAdul					
VICIcra					
SYMPpan					
GALImul					
BARBvul					
LEUCvulg					
VINCmin					
PODOpel					
EQUIarv					
PHRAaust					
TUSSfar					
GEUMall					
ALLIpet					

Page ..... of .....

ELC
PLANT SPECIES LIST

SITE: 42024
POLYGON: 2 bank
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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

Page ..... of .....

ELC WILDLIFE	SITE: 42024-601	
	POLYGON: 2	
	DATE:	
	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	#
	NOCA	SM	1	
	RSVI		1	
	AMRO	P FS	HH	
	BCCH	P	11	
	HOWR	SM	11	
	AMCR	VO	1	
	YSWA	SM	111	
	GRCA	SM	11	
	BAOR	SM	1	
	BHCO		111	
	WIFL	SM	11	
	WAVI	SM	1	

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 WILDLIFE	SITE: 42024	
	POLYGON: 2	
	DATE:	
	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	#
	RBGR	FY	11	
	RWBL	FY	11	
	SOSP	SM	11	
	HOWR	SM	1	
	BRTH	SM	1	
	EAKI	FY	111	
	EAPH	SM	1	
	YBCU	VO	1	

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
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 42024-667		POLYGON: 3	
SURVEYOR(S): WH	DATE: May 8	TIME: start	finish
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

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

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

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	3	3	POPUdel > SALlalb
2	SUB-CANOPY	3	3	SALlint >> VITrip
3	UNDERSTOREY			
4	GRD. LAYER	4	4	AGROstol=SOLlcan>SYMPlan>LYCAame

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:

		< 10		10 - 24		25 - 50		> 50
SIZE CLASS ANALYSIS:								
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:	SWAMP	SW
COMMUNITY SERIES:	THICKET	SWT
ECOSITE:	MINERAL	SWT2
VEGETATION TYPE:	WILLOW MINERAL THICKET SWAMP TYPE	SWT2-2
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE: 42024
POLYGON: 3
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 PLANT SPECIES LIST	
	SITE: 42024 -601
	POLYGON: 3
	DATE: May 8, 2019
	SURVEYOR(S): WN

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	LAYER 2	LAYER 3	LAYER 4	COL.
SALIint					
POPUdel					
ACERneg					
PARTvit					
VITIrip					
CORNser					
FRANaln					
RUBUocc					
SALIalb					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
CIRSarv					
VERBhas					
DIPSful					
EQUIarv					
SOLAdul					
LYCOame					
EPILvir					
SYMPeri					
GALIbor					
SYMPnov					
RUMEcri					
APOCcan					
LEERvir					
GEUMcan					
GEUMale					
SOLIcan					
PHALaru					
PHLEpra					
SYMPlanc					
JUNCten					
SCIRval					
CAREvul					
VICIcra					
ASCLsyr					
EUTHgra					
AGROgig					
LYTHsal					
AGROsto					

ELC PLANT SPECIES LIST	
	SITE: 42024
	POLYGON: 3
	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

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.

ELC WILDLIFE	SITE: 42024 -601	
	POLYGON: 3 - See Comm	
	DATE: Jn 3.	
	SURVEYOR(S): WN	
	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 WILDLIFE	SITE: 42024	
	POLYGON: 3	
	DATE: Aug 27	
	SURVEYOR(S): WH	
	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	#
	GRCA	FY	4						
	AMGO	F1	1111						
	COYE	T	11						
	BCCH	V04	111						
	SOSP	Sn	1						
	WIFL	VO	1						

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
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 42024-601		POLYGON: 4	
SURVEYOR(S): WH	DATE: May 8	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

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

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	3	2	POPUtre=ACSAmeg=ROBIpse
2	SUB-CANOPY			
3	UNDERSTOREY	3	3	SALint=LONtata
4	GRD. LAYER			

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

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

STAND COMPOSITION:	BA:

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

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

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	THICKET	CUT
ECOSITE:	MINERAL	CUT1
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE: 42024
POLYGON: 4
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
PLANT SPECIES LIST

SITE: 42024-601 SW
POLYGON: 4 SW
DATE: May 8, Jn 3, Jn 20
SURVEYOR(S):

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.
POPUtre	D	D	D		
ACERneg					
ROBIpse					
CRATpun					
RHUStyp					
ELEA umb					
SALIint					
LONIhat			o		
CORNser			r		

SPECIES CODE	LAYER 1	2	3	4	COL.
CIRSarv					
DACTglo					
SILEvul					
EUPH					
FILEsm					
PHALaru					
POA prat					
HESPmatr					
DAUcar					
SOLIcan					
LEUCvul					
SILEcuc					
BROMine					
TANAvulg					
BARBvulg					
PHRAaus					

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ELC
PLANT SPECIES LIST

SITE: 42024
POLYGON: 4 SW
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

SPECIES CODE	LAYER 1	2	3	4	COL.
CORNseri					

SPECIES CODE	LAYER 1	2	3	4	COL.

Page ..... of .....

ELC WILDLIFE	SITE: 42024 -601	
	POLYGON: 4	
	DATE: Jun 3, 2019	
	SURVEYOR(S): MW	
	START TIME: 6:30	END TIME:

TEMP (°C): 0	CLOUD (10th): 0	WIND: 2	PRECIPITATION: 0
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
	YEWA	SM	11						
	AMGO	P	11						
	WIFL	SM	1						
	AMRO	P	111						
	WAVI	SM	1						
	RWBL	FY	111						
	SOSP	P	11						
	AJCA	SM	1						
	CEDW	OB	1						

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 WILDLIFE	SITE: 42024	
	POLYGON: 4	
	DATE: Jun 20	
	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	#
	MODO	P	11						
	WAVI	SM	1						
	COYE	SM	1						
	FISP		1						

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
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 42024-601		POLYGON: 5	
SURVEYOR(S): WH	DATE: May 8	TIME: start	
		finish	
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

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

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

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			CORNser = SALIspp > VIBLIlen
2	SUB-CANOPY			
3	UNDERSTOREY			PHRAaus?
4	GRD. LAYER			LYTHsal = EUTRmac = SYMPtar RANUlin

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	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	SWAMP / MARSH	SW / MA
COMMUNITY SERIES:	THICKET / MEADOW	SWT / MAM
ECOSITE:	MINERAL	SWT2 / MAM2
VEGETATION TYPE:	GREY DOGWOOD MINERAL THICKET / MINERAL MEADOW MARSH	SWT2-9 / MAM2
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE: 42024
POLYGON: 5
DATE:
SURVEYOR(S): WH

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
PLANT SPECIES LIST

SITE: 42024-661
POLYGON: 5
DATE: May 8, In3, In20
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.
CORNser					
CORNrac					
ACERneg					
SALLint					
SALLamy					
SALLpra					
SALLdisc					
RHAMcat					
SALLluci					

SPECIES CODE	LAYER 1	2	3	4	COL.
EUTRmac					
CARExer					
SOLdulc					
CARExt					
CHELgla					
EQUIarv					
CAREgra					
ERIGphi					
NASTOff					
CIRSarv					
LYTHsal					
TANAvul					
BARBvul g					
RANUhis					
PHRAaus					
PHALarn					
SYMPfoe					
GEUMall					
ALLIpet					

ELC
PLANT SPECIES LIST

SITE: 42024
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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

ELC

WILDLIFE

SITE: 42024 - 601
POLYGON: 5
DATE: Jn 3, 2019
SURVEYOR(S): WH
START TIME: 7:15 END TIME:

TEMP (°C): 8 | CLOUD (10th): 0 | WIND: 3 | PRECIPITATION: 0

CONDITIONS: Cold north wind, clear skies

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
	COYE	SM	1						
	SOSP	SM	1						
	YEWA	SM	1						
	FISP	SM	1						

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

WILDLIFE

SITE: 42024
POLYGON: 5
DATE: Jn 20, 2019
SURVEYOR(S): WH
START TIME: 9:00 END TIME:

TEMP (°C): 18 | CLOUD (10th): 0 | WIND: 2 | PRECIPITATION: 0

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
	ALFL	SM	1						
	GRCA	VO	1						
	SOSP	T	11						
	NOCA	P	11						

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
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: 42024 -601		POLYGON: 6	
SURVEYOR(S): WH	DATE: May 8	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

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

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

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	3	3	POPUtre1 = SALIalb >> PLATocc
2	SUB-CANOPY			
3	UNDERSTOREY			SALIint > SALIlucl
4	GRD. LAYER			VICIcra = CYSIfmm = BOREfra

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

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

STAND COMPOSITION:	BA:

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

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

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	SWAMP	SW
COMMUNITY SERIES:	THICKET	SWT
ECOSITE:	MINERAL	SWT2
VEGETATION TYPE:	WILLOW MINERAL THICKET SWAMP	SWT2-2
INCLUSION		
COMPLEX		

Notes:

ELC
MANAGEMENT / DISTURBANCE

SITE: 42024
POLYGON: 6
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 PLANT SPECIES LIST

SITE: 42024-601
POLYGON: 6
DATE: May 8
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.
SALIint					
ACERnegu					
POPUdel					
SALIalb					
PLATocc	O				
CORNser					
PARTvit					
LONItat					
PHYSopu					
FRANaln					

SPECIES CODE	LAYER 1	2	3	4	COL.
BIDEfro					
ELEOobt					
ALISpla					
SCIRval					
CAREvul					
SCIRatr					
ALISpla					
RUMEobt					
ERIGann					
JUNCeff					
LYTHsal					
RUMEcri					
LYSInum					
CONVarv					
CAREbeb					
ELYMrep					
SYMPnov					
JUNCten					
LEUCvul					
VICIcra					
PHALaru					
PHRAaus					

ELC PLANT SPECIES LIST

SITE: 42024
POLYGON: 6
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

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

ELC

WILDLIFE

SITE: 42024 -661
POLYGON: 6
DATE: June 3 2019
SURVEYOR(S): WH
START TIME: END TIME:

TEMP (°C): 8	CLOUD (10th): 0	WIND: 3	PRECIPITATION: 0

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	YEWA	SM	11
	SOSP	SM	1
	RWBL	P	11
	AMRO	OB	1
	COGR	OB	2
	WYE	SM	1
	WIFL	SM	1

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

WILDLIFE

SITE: 42024
POLYGON: 6
DATE: Jn 20
SURVEYOR(S): WN
START TIME: 9:45 END TIME:

TEMP (°C): 19	CLOUD (10th): 00	WIND: 2	PRECIPITATION: 0

CONDITIONS: —

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	YEWA	SM	11
	NOCA	P	11
	RWBL	P	HH 1
	SOSP		11
	HOWR	T	1
	AMRO	FY	111
	WIFL	T	1

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)

Appendix D

Significant Wildlife Habitat Table

ELCs: CUM1, CUW1, SWT2-2, CUT1, SWT2-9/MAM2, SWT2-2, FO

Seasonal Concentration of Animals

Wildlife Habitat	ELC Code Triggers	Additional Habitat Criteria	Candidate SWH	SWH Defining Criteria	Confirmed SWH
Waterfowl Stopover and Staging Areas (Terrestrial)	CUT1, CUM1	- No large areas of sheet water or congregations of migratory waterfowl observed incidentally in the spring. - Subject Lands and Adjacent Lands are not a Waterfowl Staging Area on LIO mapping.	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.	**No**
Waterfowl Stopover and Staging Areas (Aquatic)	Northwest adjacent ponds	- No suitable ELC present within the Subject Lands. - Subject Lands and Adjacent Lands are not a Waterfowl Staging Area on LIO mapping.	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.	**No**
Shorebird Migratory Stopover Area	MAM2	- No beach areas, bars, seasonally flooded, muddy and un-vegetated shoreline habitat available.	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.	**No**
Raptor Wintering Area	Adjacent FO, CUM1, CUT1, CUW1	- A combination of forest and fields >20 ha is present within/adjacent to the Subject Lands if lands to the north and east are included. - The Thames River and shoreline area to the north may support Bald Eagles.	Yes (Subject Lands and Adjacent Lands)	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two 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.	**Confirmed Not SWH – Subject Lands** The open meadow habitats within the Legal Parcel are largely extractive (E) and disturbed, with the remainder of open areas being meadow habitat. These areas are not extensive enough for Northern Harrier, Rough-legged Hawk, American Kestrel, or Short-eared Owl. No raptors were observed within the Study Area. **Unconfirmed – Adjacent Lands** Less disturbed open/meadow habitat is present along Kilally Road to the east. Surveys were not completed through the north and east adjacent forest communities to confirm raptors are absent.
Bat Hibernacula	-	- No suitable features (caves, mines) present. - Old foundations are present, however buildings are not considered SWH.	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**
Bat Maternity Colonies	FO	- A candidate bat maternity roost survey was conducted in April 2019, however communities outside the property line were not assessed. - Only four potential wildlife trees were found in the Subject Lands (near Kilally Road), and these are not in a qualifying ELC community. - The adjacent forest communities to the north and east were not investigated.	Yes - Adjacent Lands (forested Ecosites)	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”	**Unconfirmed – Adjacent Lands** **Confirmed Not SWH – Subject Lands**
Turtle Wintering	SWT2-2,	- Over-wintering sites are permanent water	No	Presence of 5 over-wintering Midland Painted Turtles is significant.	**No**

Areas	SWT2-9	bodies, large wetlands, and bogs and fens with adequate dissolved oxygen. Wetland communities within the Legal Parcel are shallow or only seasonally wet. - Manmade ponds (including stormwater management facilities) are not considered SWH.		• 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).	
Reptile Hibernaculum	All other than really wet	- Several features potentially suitable for snake hibernacula were identified within the Subject Lands: old swimming pool with cracks, several mammal burrows, old residential foundations.	Yes – Subject Lands and Adjacent Lands	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). • If there are Special Concern Species present, then site is SWH. • The feature the hibernaculum is located in plus a 30 m radius area is SWH.	**Unconfirmed – Adjacent Lands** **Confirmed Not SWH – Subject Lands** No snakes observed during targeted snake emergence field investigations. No incidental observations of snakes.
Colonially-Nesting Bird Breeding Habitat (Bank/Cliff)	CUT1, CUM1	- No naturally exposed soil banks, cliff faces, sandy hills, borrow pits, steep slopes, or other suitable habitat observed. - Aggregate areas do not qualify.	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 nests observed within the Subject Lands and no qualifying ELC communities. - No heron nesting sites/colonies are present based on LIO mapping (wildlife values area map) or Citizen Science data.	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)	CUT1, CUM1, MAM2	- No islands, peninsulas, or low bushes close to streams/ditches in farmlands 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**
Migratory Butterfly Stopover Areas	CUT1, CUM1, FO	- 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 lack of suitable habitat and the large distance from both Lake Erie and Lake Ontario.	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	FO	- The site is >5 km from 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	FO	- No woodlots >100 ha in size. Criteria not met. - No White-tailed Deer wintering areas identified in the area by LIO wildlife values area	No	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF.	**No**

		mapping.		• 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.	

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	FO	Wooded communities are present, but are not Old Growth. History of disturbance in the area.	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**
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	SWT2-9/MAM2, SWT2-2	- Community 6 (SWT2-2) is small (~0.7 ha), and the surrounding upland habitat is disturbed by aggregate activities. - Upland habitat for Community 5 (SWT2-9/MAM2) is not >120 m wide. Surrounding upland areas to the south include old residential houses and aggregate extraction, not suitable upland habitat with habitat trees. - Community 3 (SWT2-2) is surrounded by aggregate extraction areas and disturbed habitat. No habitat trees observed.	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”.	**No**
Bald Eagle and Osprey Nesting, Foraging, Perching	FO	- There may be nesting, foraging, and/or perching habitat for Bald Eagle or Osprey along the Thames River to the north, however this is largely outside the 120 m Adjacent Lands and was not investigated. - No Osprey feeding or resting areas identified in the area of the Subject Lands on LIO wildlife values mapping.	No	• Studies confirm 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. • 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”.	**No**
Woodland Raptor Nesting Habitat	FO	- No natural or conifer plantation woodlands/forest stands >30ha with >4ha of interior habitat. Criteria not met.	No	• 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: 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk: 100m radius around the nest is SWH. • Sharp-Shinned Hawk: 50m radius around the nest is the SWH. • Conduct field investigations from early March to end of May.	**No**
Turtle Nesting Areas	-	- No permanent aquatic habitat with adjacent areas of exposed soil suitable for turtle nesting identified within the Subject Lands.	No	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles. • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m 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.	**No**
Springs and Seeps	-	- No headwater areas identified by UTRCA within or adjacent to the Subject Lands. - No streams identified within or adjacent to the Subject Lands aside from the Thames River (OMAFRA, 2022). - One seep identified out of the river slope in the ESA on May 8, 2019.	No	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered 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	FO, SWT2-9/MAM2	- Community 5, ESA lands to the north, and the east adjacent woodlands (which appear to contain ponds	Yes (Community 5, Adjacent Lands)	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2	**No**

Habitat (Woodland)		based on aerial photos) may provide breeding habitat to amphibians within 120 m of woodlands.		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	
Amphibian Breeding Habitat (Wetlands)	SWT2-9/MAM2, SWT2-2	- Communities 3a (SWT2-2), 3b (SWT2-2) and 6 (SWT2-2) contain wetland habitat that may support amphibian breeding.	Yes (Communities 3a, 3b, and 6 in the Subject Lands)	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.	**Confirmed Not SWH – Subject Lands** Amphibian surveys in 2020 and 2022 confirm significant breeding is not present within the Subject Lands.
Woodland Area-Sensitive Bird Breeding Habitat	FO	- No mature forests/woodlots >30 ha with interior habitat (interior habitat is at least 200 m from the forest edge).	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	SWT2-9/MAM2	- Community 5 contains some marsh habitat, although the community is also partially a Swamp Thicket.	Yes (Community 5)	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 nesting. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	**Confirmed Not SWH – Community 5** No relevant species or nests were identified during breeding bird surveys.
Open Country Bird Breeding Habitat	CUM1	- Natural and/or cultural fields >30 ha are not 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, CUW1	- There is not >10 ha of field habitat succeeding to shrub/thicket present within or adjacent to the Subject Lands.	No	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • Habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is SWH. • The area of the SWH is the contiguous ELC Ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	**No**
Terrestrial Crayfish	SWT2-9/MAM2,	- Several Swamp Thicket or Meadow Marsh communities are present within the Subject Lands.	Yes (Communities 3a, 3b, 5, 6)	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in	**Confirmed Not SWH – Subject Lands**

	SWT2-2			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.	No chimneys/burrows were observed during field investigations.
Special Concern and Rare Wildlife Species	-	- Background records review identified several Special Concern or rare species as potentially present within the area of the Subject Lands: Bald Eagle [SC], Common Nighthawk [SC], Eastern Wood-Pewee [SC], Grasshopper Sparrow [SC], Monarch [SC], Red-headed Woodpecker [SC], Wood Thrush [SC], Snapping Turtle [SC], Northern Brook Lamprey [SC], Cleland's Evening Primrose [S1], and Winged Loosestrife [S3]. - Aquatic habitat is not present which would support Snapping Turtle or Northern Brook Lamprey, or provide foraging habitat for Bald Eagle (Thames River is farther to the north). - Open meadow is not present which would support Grasshopper Sparrow or Monarch. - Dry forest and dry forest clearings are not present which would support Common Nighthawk or Red-headed Woodpecker. - The Adjacent Lands were not investigated for Special Concern or rare wildlife (off-property).	Candidate for Eastern Wood-Pewee, Wood Thrush, Cleland's Evening Primrose and Winged Loosestrife based on habitat suitability	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.	**Confirmed Not SWH – Subject Lands** No Special Concern or rare species were observed within the Subject Lands **Unconfirmed - Adjacent Lands**

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 in wetlands. Criteria not met.	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	• Long Point has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration. • The confirmation criteria and habitat areas for this SWH are still being determined.	**No**

Appendix E

Floral Inventory Data

Community 1 (CUM1) Floral Inventory (2019/05/08; 2019/06/03; 2019/06/20; 2019/08/20)										
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**		**Type**	
Acer negundo	Manitoba Maple	0.0	G5		N5		S5	C	TR	
Acer saccharum	Sugar Maple	3.0	G5		N5		S5	C	TR	
Alliaria petiolata	Garlic Mustard	0.0	GNR		NNA		SE5	IC	FO	
Ambrosia artemisiifolia	Common Ragweed		G5		N5		S5	C	FO	
Arctium minus	Common Burdock		GNR		NNA		SE5	IC	FO	
Argemone mexicana	Mexican Prickly-poppy	5.0	G5		NNA		SEH		FO	
Asclepias syriaca	Common Milkweed	5.0	G5		N5		S5	C	FO	
Barbarea vulgaris	Bitter Wintercress		GNR		NNA		SE5	IC	FO	
Bromus inermis	Smooth Brome	5.0	G5		NNA		SE5	IC	GR	
Celtis occidentalis	Common Hackberry	0.0	G5		N4		S4	X	TR	
Cirsium vulgare	Bull Thistle	3.0	GNR		NNA		SE5	IX	FO	
Clematis virginiana	Virginia Virgin's-bower		G5		NNR		S5	C	VI	
Convolvulus arvensis	Field Bindweed	5.0	GNR		NNA		SE5	IX	VI	
Daucus carota	Wild Carrot	5.0	GNR		NNA		SE5	IC	FO	
Elaeagnus umbellata	Autumn Olive		GNR		NNA		SE3	IR	SH	
Erigeron annuus	Annual Fleabane	3.0	G5		N5		S5	C	FO	
Euthamia graminifolia	Grass-leaved Goldenrod	0.0	G5		N5		S5	C	FO	
Glechoma hederacea	Ground Ivy		GNR		NNA		SE5	IX	FO	
Helianthus annuus	Common Sunflower		G5		N5		SE4	IR	FO	
Hesperis matronalis	Dame's Rocket		G4G5		NNA		SE5	IX	FO	
Hieracium vulgatum	Common Hawkweed	5.0	GNR		NNA		SE2?	IR	FO	
Hydrophyllum virginianum	Virginia Waterleaf	0.0	G5		N5		S5	C	FO	
Juglans nigra	Black Walnut		G5		N4		S4?	X	TR	
Leucanthemum vulgare	Oxeye Daisy	5.0	GNR		NNA		SE5	IC	FO	
Lonicera tatarica	Tartarian Honeysuckle		GNR		NNA		SE5	IX	SH	
Lotus corniculatus	Garden Bird's-foot Trefoil		GNR		NNA		SE5	IX	FO	
Malus pumila	Common Apple	5.0	G5		NNA		SE4	IX	SH	
Melilotus albus	White Sweet-clover		G5		NNA		SE5	IC	FO	
Melilotus officinalis	Yellow Sweet-clover		GNR		NNA		SE5	IC	FO	
Miscanthus sacchariflorus	Japanese Silver Grass	5.0	GNR		NNA		SE3	IX	GR	
Morus alba	White Mulberry	0.0	GNR		NNA		SE5	IX	TR	
Nepeta cataria	Catnip		GNR		NNA		SE5	IC	FO	
Phleum pratense ssp. pratense	Common Timothy		GNRTNR		NNA		SE5		GR	
Picea abies	Norway Spruce	5.0	G5		NNA		SE3	IX	TR	
Plantago lanceolata	English Plantain		G5		NNA		SE5	IC	FO	
Poa palustris	Fowl Bluegrass	-3.0	G5		N5		S5	X	GR	
Ranunculus acris	Tall Buttercup	0.0	G5		NNA		SE5	IC	FO	
Reynoutria japonica	Japanese Knotweed		GNR		NNA		SE5	IU	FO	
Rhus typhina	Staghorn Sumac		G5		N5		S5	C	SH	
Rosa multiflora	Multiflora Rose		GNR		NNA		SE5	IX	SH	
Rubus occidentalis	Black Raspberry	5.0	G5		N5		S5	C	SH	
Rumex crispus	Curly Dock		GNR		NNA		SE5	IC	FO	
Silene vulgaris	Bladder Campion	5.0	GNR		NNA		SE5	IX	FO	
Solidago canadensis	Canada Goldenrod		G5		N5		S5		FO	
Sonchus oleraceus	Common Sow-thistle		GNR		NNA		SE5	IX	FO	
Symphyotrichum novae-angliae	New England Aster	-3.0	G5		N5		S5	C	FO	
Tanacetum vulgare	Common Tansy	5.0	GNR		NNA		SE5	IX	FO	
Taraxacum officinale	Common Dandelion		G5		N5		SE5	IC	FO	
Trifolium arvense	Rabbit-foot Clover	5.0	GNR		NNA		SE4		FO	
Trifolium pratense	Red Clover	3.0	GNR		NNA		SE5	IX	FO	
Verbascum thapsus	Common Mullein		GNR		NNA		SE5	IC	FO	
Vicia cracca	Tufted Vetch		GNR		NNA		SE5	IX	VI	

Community 2 (CUW1) Floral Inventory (2019/05/08; 2019/06/03; 2019/06/20; 2019/08/20)										
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**		**Type**	**Invasive**
Acer negundo	Manitoba Maple		G5		N5		S5	C	TR	
Acer platanoides	Norway Maple	5.0	GNR		NNA		SE5	IU	TR	
Alliaria petiolata	Garlic Mustard		GNR		NNA		SE5	IC	FO	
Barbarea vulgaris	Bitter Wintercress	0.0	GNR		NNA		SE5	IC	FO	
Betula pendula	Weeping Birch		GNR		NNA		SE4	IR	TR	
Bromus inermis	Smooth Brome	5.0	G5		NNA		SE5	IC	GR	
Celtis occidentalis	Common Hackberry	0.0	G5		N4		S4	X	TR	
Cornus alternifolia	Alternate-leaved Dogwood		G5		N5		S5	X	SH	
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C	SH	
Equisetum arvense	Field Horsetail	0.0	G5		N5		S5	C	FE	
Fagus grandifolia	American Beech		G5		N5		S4	C	TR	
Galium mollugo	Smooth Bedstraw	5.0	GNR		NNA		SE5	IX	FO	
Geum aleppicum	Yellow Avens		G5		N5		S5	X	FO	
Geum canadense	White Avens		G5		N5		S5	X	FO	
Leucanthemum vulgare	Oxeye Daisy	5.0	GNR		NNA		SE5	IC	FO	
Lonicera tatarica	Tartarian Honeysuckle		GNR		NNA		SE5	IX	SH	
Lythrum salicaria	Purple Loosestrife	-5.0	G5		NNA		SE5	IC	FO	
Mentha spicata	Spearmint	-3.0	GNR		NNA		SE4	IX	FO	
Parthenocissus vitacea	Thicket Creeper		G5		N5		S5	X	VW	
Phragmites australis	Common Reed	-3.0	G5		N5		S4?		GR	
Pinus resinosa	Red Pine		G5		N5		S5	IR	TR	
Pinus sylvestris	Scots Pine		GNR		NNA		SE5	IR	TR	
Podophyllum peltatum	May-apple	3.0	G5		N5		S5	X	FO	
Populus deltoides	Eastern Cottonwood	0.0	G5		N5		S5		TR	
Prunus virginiana	Choke Cherry		G5		NNR		S5	C	TR	
Quercus macrocarpa	Bur Oak		G5		N5		S5	C	TR	
Reynoutria japonica	Japanese Knotweed		GNR		NNA		SE5	IU	FO	
Salix alba	White Willow	-3.0	G5		NNA		SE4	IX	TR	
Solanum dulcamara	Bittersweet Nightshade		GNR		NNA		SE5	IC	VW	
Symphyotrichum novae-angliae	New England Aster	-3.0	G5		N5		S5	C	FO	
Symplocarpus foetidus	Skunk Cabbage	-5.0	G5		N5		S5	C	FO	
Syringa vulgaris	Common Lilac	5.0	GNR		NNA		SE5	IX	SH	
Tussilago farfara	Colt's-foot		GNR		NNA		SE5	IC	FO	
Vicia cracca	Tufted Vetch	5.0	GNR		NNA		SE5	IX	VI	
Vinca minor	Periwinkle	5.0	GNR		NNA		SE5	IR	VW	
Vitis riparia	Riverbank Grape		G5		N5		S5	C	VW	

Community 3 (SWT2 2) Floral Inventory (2019/05/08; 2019/06/03; 2019/06/20; 2019/08/20)										
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**		**Type**	**Invasive**
Acer negundo	Manitoba Maple	0.0	G5		N5		S5	C	TR	
Agrostemma githago var. githago	Common Corncockle		GNRTNR		NNA		SE3		FO	
Agrostis stolonifera	Creeping Bentgrass	-3.0	G5		N5		SE5	IC	GR	
Apocynum cannabinum	Hemp Dogbane		G5		N5		S5		FO	
Asclepias syriaca	Common Milkweed	5.0	G5		N5		S5	C	FO	
Carex vulpinoidea	Fox Sedge	-5.0	G5		N5		S5	C	SE	
Cirsium arvense	Canada Thistle		G5		NNA		SE5	IC	FO	
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C	SH	
Dipsacus fullonum	Common Teasel		GNR		NNA		SE5	IC	FO	
Epilobium ciliatum	Northern Willowherb	-3.0	G5		N5		S5		FO	
Equisetum arvense	Field Horsetail		G5		N5		S5	C	FE	
Euthamia graminifolia	Grass-leaved Goldenrod		G5		N5		S5	C	FO	
Frangula alnus	Glossy Buckthorn		GNR		NNA		SE5	IU	SH	
Galium boreale	Northern Bedstraw		G5		NNR		S5	X	FO	
Geum aleppicum	Yellow Avens		G5		N5		S5	X	FO	
Geum canadense	White Avens		G5		N5		S5	X	FO	
Juncus tenuis	Path Rush		G5		N5		S5	X	RU	
Leersia virginica	Virginia Cutgrass	-3.0	G5		N4N5		S4	X	GR	
Lycopus americanus	American Water-horehound	-5.0	G5		N5		S5	C	FO	
Lythrum salicaria	Purple Loosestrife	-5.0	G5		NNA		SE5	IC	FO	
Parthenocissus vitacea	Thicket Creeper		G5		N5		S5	X	VW	
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	X	GR	
Phleum pratense	Common Timothy	3.0	GNR		NNA		SE5	IC	GR	
Populus deltoides	Eastern Cottonwood		G5		N5		S5		TR	
Rubus occidentalis	Black Raspberry	5.0	G5		N5		S5	C	SH	
Rumex crispus	Curly Dock		GNR		NNA		SE5	IC	FO	
Salix alba	White Willow	-3.0	G5		NNA		SE4	IX	TR	
Salix interior	Sandbar Willow	-3.0	GNR		NNR		S5	C	SH	
Schoenoplectus tabernaemontani	Soft-stemmed Bulrush	-5.0	G5		N5		S5	C	SE	
Solanum dulcamara	Bittersweet Nightshade	0.0	GNR		NNA		SE5	IC	VW	
Solidago canadensis	Canada Goldenrod		G5		N5		S5		FO	
Symphyotrichum ericoides	White Heath Aster		G5		N5		S5		FO	
Symphyotrichum lanceolatum	Panicled Aster	-3.0	G5		N5		S5	C	FO	
Symphyotrichum novae-angliae	New England Aster	-3.0	G5		N5		S5	C	FO	
Verbena hastata	Blue Vervain	-3.0	G5		NNR		S5	C	FO	
Vicia cracca	Tufted Vetch	5.0	GNR		NNA		SE5	IX	VI	
Vitis riparia	Riverbank Grape		G5		N5		S5	C	VW	

Community 4 (CUT1) Floral Inventory (2019/05/08; 2019/06/03; 2019/06/20; 2019/08/20)										
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**		**Type**	
Acer negundo	Manitoba Maple		G5		N5		S5	C	TR	
Barbarea vulgaris	Bitter Wintercress		GNR		NNA		SE5	IC	FO	
Bromus inermis	Smooth Brome	5.0	G5		NNA		SE5	IC	GR	
Cirsium arvense	Canada Thistle		G5		NNA		SE5	IC	FO	
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C	SH	
Crataegus punctata	Dotted Hawthorn	5.0	G5		N5		S5	C	SH	
Dactylis glomerata	Orchard Grass		GNR		NNA		SE5	IC	GR	
Daucus carota	Wild Carrot	5.0	GNR		NNA		SE5	IC	FO	
Elaeagnus umbellata	Autumn Olive		GNR		NNA		SE3	IR	SH	
Euphorbia cyparissias	Cypress Spurge	5.0	G5		NNA		SE5	IX	FO	
Hesperis matronalis	Dame's Rocket		G4G5		NNA		SE5	IX	FO	
Leucanthemum vulgare	Oxeye Daisy	5.0	GNR		NNA		SE5	IC	FO	
Lonicera tatarica	Tartarian Honeysuckle		GNR		NNA		SE5	IX	SH	
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	X	GR	
Phragmites australis	Common Reed	-3.0	G5		N5		S4?		GR	
Poa pratensis	Kentucky Bluegrass	3.0	G5		N5		S5		GR	
Populus tremuloides	Trembling Aspen	0.0	G5		N5		S5	X	TR	
Rhus typhina	Staghorn Sumac		G5		N5		S5	C	SH	
Robinia pseudoacacia	Black Locust		G5		NNA		SE5	IC	TR	
Salix interior	Sandbar Willow	-3.0	GNR		NNR		S5	C	SH	
Silene vulgaris	Bladder Campion	5.0	GNR		NNA		SE5	IX	FO	
Solidago canadensis	Canada Goldenrod	3.0	G5		N5		S5		FO	
Tanacetum vulgare	Common Tansy		GNR		NNA		SE5	IX	FO	
Tilia cordata	Little-leaf Linden		GNR		NNA		SE1		TR	

Community 5 (SWT2 9/MAM2) Floral Inventory (2019/05/08; 2019/06/03; 2019/06/20; 2019/08/20)										
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**		**Type**	**Invasive**
Acer negundo	Manitoba Maple		G5		N5		S5	C	TR	
Alliaria petiolata	Garlic Mustard		GNR		NNA		SE5	IC	FO	
Barbarea vulgaris	Bitter Wintercress		GNR		NNA		SE5	IC	FO	
Carex gracilescens	Slender Loose-flowered Sedge	5.0	G5?		N4		S4	U	SE	
Carex retrorsa	Retrorse Sedge	-5.0	G5		N5		S5	C	SE	
Carex stipata	Awl-fruited Sedge	-5.0	G5		N5		S5	C	SE	
Chelone glabra	White Turtlehead	-5.0	G5		N5		S5	X	FO	
Cirsium arvense	Canada Thistle	3.0	G5		NNA		SE5	IC	FO	
Cornus racemosa	Gray Dogwood		G5		N5		S5	X	SH	
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C	SH	
Equisetum arvense	Field Horsetail		G5		N5		S5	C	FE	
Erigeron philadelphicus	Philadelphia Fleabane	-3.0	G5		N5		S5	C	FO	
Eutrochium maculatum	Spotted Joe Pye Weed	-5.0	G5		N5		S5		FO	
Geum aleppicum	Yellow Avens		G5		N5		S5	X	FO	
Lythrum salicaria	Purple Loosestrife	-5.0	G5		NNA		SE5	IC	FO	
Nasturtium officinale	Watercress	-5.0	GNR		NNA		SE	IX	FO	
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	X	GR	
Phragmites australis	Common Reed	-3.0	G5		N5		S4?		GR	
Ranunculus pensylvanicus	Pennsylvania Buttercup	-5.0	G5		NNR		S5	X	FO	
Rhamnus cathartica	Common Buckthorn		GNR		NNA		SE5	IC	SH	
Salix amygdaloides	Peach-leaved Willow	-3.0	G5		N5		S5	X	TR	
Salix discolor	Pussy Willow	-3.0	G5		N5		S5	X	SH	
Salix interior	Sandbar Willow	-3.0	GNR		NNR		S5	C	SH	
Salix lucida	Shining Willow	-3.0	G5		NNR		S5	X	SH	
Salix planifolia	Tea-leaved Willow	-5.0	G5		N5		S5		TR	
Solanum dulcamara	Bittersweet Nightshade		GNR		NNA		SE5	IC	VW	
Symplocarpus foetidus	Skunk Cabbage	-5.0	G5		N5		S5	C	FO	
Tanacetum vulgare	Common Tansy		GNR		NNA		SE5	IX	FO	

Community 6 (SWT2 2) Floral Inventory (2019/05/08; 2019/06/03; 2019/06/20; 2019/08/20)										
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**		**Type**	**Invasive**
Acer negundo	Manitoba Maple		G5		N5		S5	C	TR	
Alisma subcordatum	Southern Water-plantain	-5.0	G5		N5		S4?	X	FO	
Bidens frondosa	Devil's Beggarticks	-3.0	G5		N5		S5	X	FO	
Carex bebbii	Bebb's Sedge	-5.0	G5		N5		S5	C	SE	
Carex vulpinoidea	Fox Sedge	-5.0	G5		N5		S5	C	SE	
Convolvulus arvensis	Field Bindweed	5.0	GNR		NNA		SE5	IX	VI	
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C	SH	
Eleocharis obtusa	Blunt Spikerush	-5.0	G5		N5		S5	C	SE	
Elymus repens	Creeping Wildrye	3.0	GNR		NNA		SE5	IC	GR	
Erigeron annuus	Annual Fleabane	3.0	G5		N5		S5	C	FO	
Frangula alnus	Glossy Buckthorn		GNR		NNA		SE5	IU	SH	
Juncus effusus	Soft Rush	-5.0	G5		N5		S5		RU	
Juncus tenuis	Path Rush		G5		N5		S5	X	RU	
Leucanthemum vulgare	Oxeye Daisy	5.0	GNR		NNA		SE5	IC	FO	
Lonicera tatarica	Tartarian Honeysuckle		GNR		NNA		SE5	IX	SH	
Lysimachia nummularia	Creeping Jennie	-3.0	GNR		NNA		SE5	IX	FO	
Lythrum salicaria	Purple Loosestrife	-5.0	G5		NNA		SE5	IC	FO	
Parthenocissus vitacea	Thicket Creeper		G5		N5		S5	X	VW	
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	X	GR	
Phragmites australis	Common Reed	-3.0	G5		N5		S4?		GR	
Physocarpus opulifolius	Eastern Ninebark	-3.0	G5		N5		S5	X	SH	
Platanus occidentalis	Sycamore	-3.0	G5		N4		S4	C	TR	
Populus deltoides	Eastern Cottonwood		G5		N5		S5		TR	
Rumex crispus	Curly Dock		GNR		NNA		SE5	IC	FO	
Rumex obtusifolius	Bitter Dock	-3.0	GNR		NNA		SE5	IX	FO	
Salix alba	White Willow	-3.0	G5		NNA		SE4	IX	TR	
Salix interior	Sandbar Willow	-3.0	GNR		NNR		S5	C	SH	
Schoenoplectus tabernaemontani	Soft-stemmed Bulrush	-5.0	G5		N5		S5	C	SE	
Scirpus atrocinctus	Black-girdled Bulrush	-5.0	G5		N5		S5		SE	
Symphyotrichum novae-angliae	New England Aster	-3.0	G5		N5		S5	C	FO	
Vicia cracca	Tufted Vetch		GNR		NNA		SE5	IX	VI	

Appendix F

Breeding Bird Survey Data

AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project Name: Edgevalley Phase II EIS **MTE File No.:** 42024-601
Collector(s): Will Huys

	Date	Start	Finish	Weather
Visit 1	3-Jun-19	6:30	9:30	clear, cool, light breeze
Visit 2	20-Jun-19	8:15	10:30	clear, cool

Species Abbr.	Species Name	Comm. 1				Comm. 2				Comm. 3		Comm. 4				Comm. 5				Comm. 6				S Rank	ESA Status	PIF Status
		Visit 1		Visit 2		Visit 1		Visit 2		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2				
		Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.			
WITU	Wild Turkey	OB	1																					S5	-	
KILL	Killdeer	P	7	P	8																			S5		
SPSA	Spotted Sandpiper	T	4	T	4																			S5		
MODO	Mourning Dove													P	2									S5		
YBCU	Yellow-billed Cuckoo							VO	1															S4		
RBWO	Red-bellied Woodpecker			VO	1																			S4	-	
NOFL	Northern Flicker			T	1																			S4		RC
ALFL	Alder Flycatcher																	SM	1					S5		
WIFL	Willow Flycatcher	SM	3			SM	2			VO	1	SM	1							SM	1	T	1	S4		CC
EAPH	Eastern Phoebe							SM	1															S5		
GCFL	Great Crested Flycatcher																							S4	-	
EAKI	Eastern Kingbird							FY	3															S4		RC
WAVI	Warbling Vireo	SM	3			SM	1					SM	1	SM	1									S5		
REVI	Red-eyed Vireo					SM	1																	S5		
BLJA	Blue Jay	VO	3	VO	1																			S5		
AMCR	American Crow					VO	1																	S5		
BANS	Bank Swallow			AE	3																			S4	THR	RS
BCCH	Black-capped Chickadee					P	2			YOY	3													S5	-	
HOWR	House Wren					SM	2	SM	1													T	1	S5		
AMRO	American Robin	FY	7			P	5					OB	3							OB	1	FY	3	S5		
GRCA	Gray Catbird			T	3	SM	2			FY	2							VO	1					S4		
BRTH	Brown Thrasher							SM	1															S4		RC
CEDW	Cedar Waxwing			FY	5							OB	1											S5		
YWAR	Yellow Warbler	SM	3	SM	5	SM	3					SM	2			SM	1			SM	2	SM	2	S5		
COYE	Common Yellowthroat			SM	1					T	2			SM	1	SM	1			SM	1			S5	-	
FISP	Field Sparrow	SM	3	SM	2									OB	1	SM	1							S4		RC
SOSP	Song Sparrow	P/FY	10	OB	2			SM	2	SM	1	P	2			SM	1	SM	2	SM	1	OB	2	S5		
NOCA	Northern Cardinal					SM	1					SM	1					P	2			P	2	S5		
RBGR	Rose-breasted Grosbeak							FY	2															S4		RS
INBU	Indigo Bunting	OB	2	P	3																			S4		
RWBL	Red-winged Blackbird	P	7	OB	2			FY	2			FY	3							P	2	P	6	S4		
COGR	Common Grackle			T	2															OB	2			S5		
BHCO	Brown-headed Cowbird	OB	7	OB	7	OB	3																	S4		
BAOR	Baltimore Oriole			OB	1	SM	1																	S4		RC,RS
HOFI	House Finch	SM	1																					SNA		
AMGO	American Goldfinch	P	7	FY	6					FY	4	P	2											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

Species Abbr.	Species Name	Comm. 1				Comm. 2				Comm. 3		Comm. 4				Comm. 5				Comm. 6				S Rank	ESA Status	PIF Status
		Visit 1		Visit 2		Visit 1		Visit 2		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2		Visit 1		Visit 2				
		Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.			

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

Appendix G

Amphibian Breeding Survey Data

GENERAL SITE INFORMATION FIELD SHEET

Project: 42024-601 (Edgevalley)
Date: April 12, 2022 Project Manager: DH
Collector(s): AL ER Visit #:
Time started: 7:43 PM Time finished: 9 PM Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind: 2 (13 km/h)		Cloud Cover (%)	Precipitation
14°C	Direction: S		75%	Today: No Yesterday: Yes

DATA FOCUS							
☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey	4	Wind raises dust and paper
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical	5	Small trees sway
☒	Amphibians (1) 2_ 3_	☐	Wetland	☐	Aquatic - Biological	6	Large branches sway
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat	7	Lots of resistance when walking into
☐	Inverterbrates	☐	other SAR	☐	Other - see notes	8	Limbs breaking off trees

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:

Lots of SPPE SE across Kilally

One Canada Goose in Comm 6

Turkey noise from 6

Owl sound (?) circling us at station 1

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

AMPHIBIAN MONITORING FIELD SHEET

Project: 42024-601 (Edgevalley)
Date: April 12, 2022 Project Manager: DH
Collector(s): AL ER Visit #:

WEATHER CONDITIONS					
Temp.	Wind: 2		Cloud Cover (%)	Precipitation	
14°C	Direction: S		75%	☐ 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 South across Kilally

Station: 1 (482670 4764789)

*Towards Comm 6

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

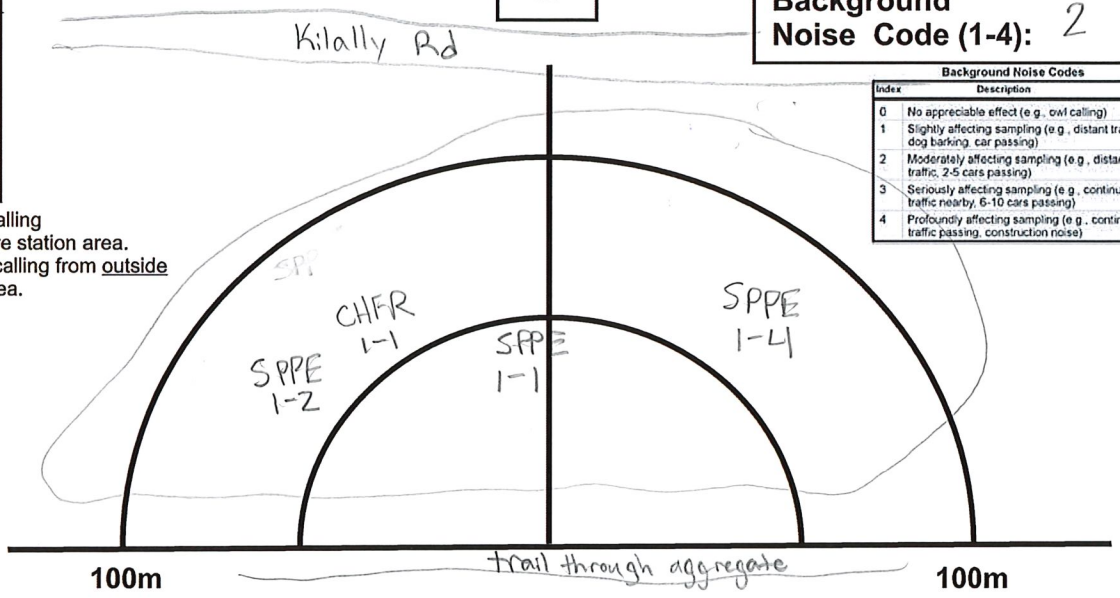
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 8:33

Background Noise Code (1-4): 2

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: 2 (482669 4764789)

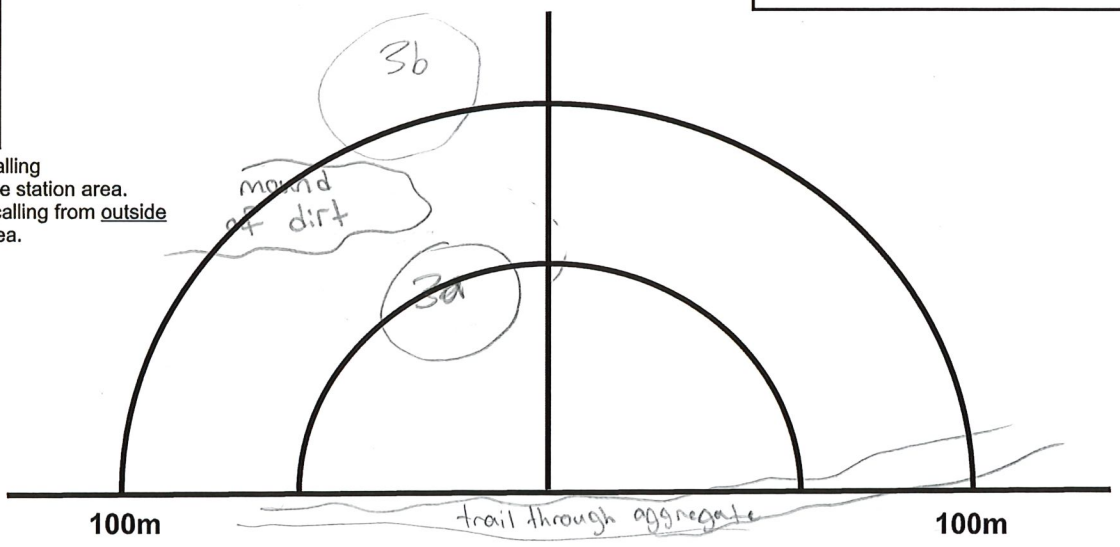
*Towards Comm 3a, 3b

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): 8:30

Background Noise Code (1-4): 2



AMPHIBIAN MONITORING FIELD SHEET

Project: Edgevalley (42024-601)
Date: April 12 2022 Project Manager: DH
Collector(s): AL ER Visit #:

WEATHER CONDITIONS					
Temp.	Wind: 2		Cloud Cover (%)	Precipitation	
14°C	Direction: S		75%	☐ 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		
WOFR		

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

Station: 3

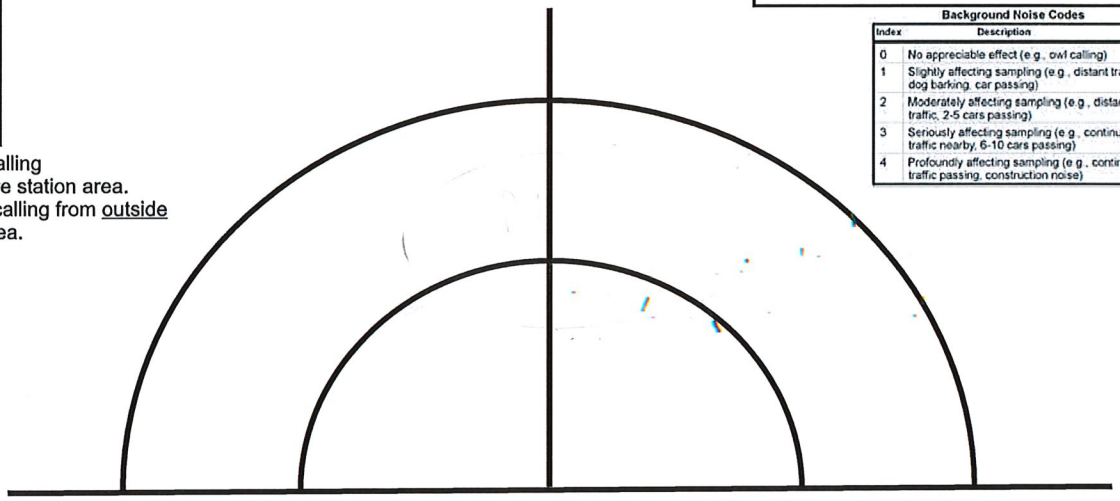
W

Station Start Time (24 hr):

Background Noise Code (1-4):

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		X
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.

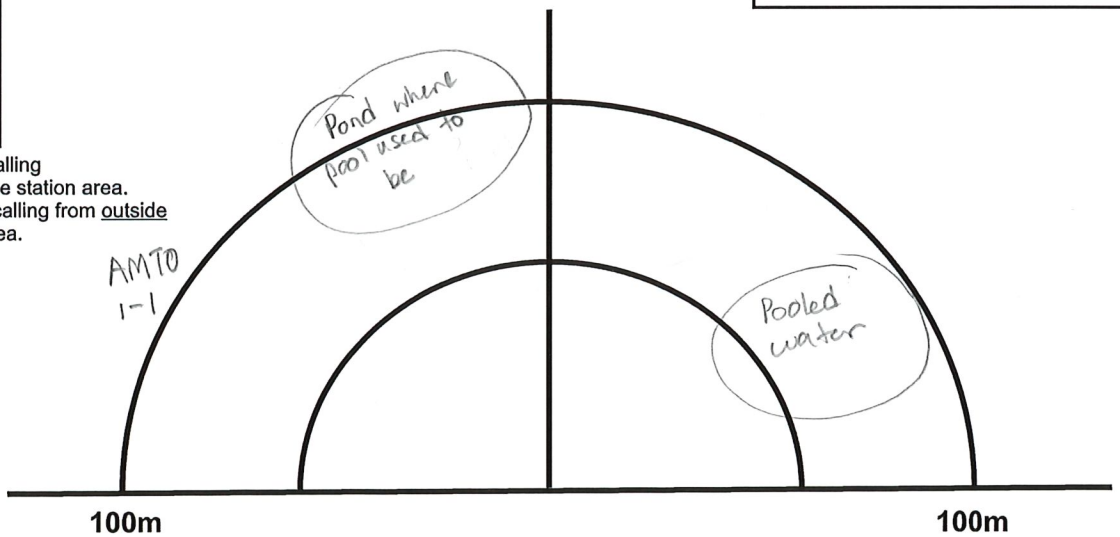
Station: 3 (482918 4764908)

*Towards ponded water near where pool was

N

Station Start Time (24 hr): 8:45 PM

Background Noise Code (1-4): 2



GENERAL SITE INFORMATION FIELD SHEET

Project: 42024-601 (Edgevalley Ph2)
Date: May 5, 2022 Project Manager: DH
Collector(s): AL TC Visit #:
Time started: 8:45PM Time finished: 9:30PM Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind: \		Cloud Cover (%)	Precipitation
12°C	Direction: E		95%	Today: None Yesterday: Light rain (mornings)

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				
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 Aggregate				
☒ ☐ 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:

SPPE and AMTO off site to SE

Deer III

~~HHHH~~ Bats flew over from near Comm 6

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

AMPHIBIAN MONITORING FIELD SHEET

Project: 42024-601 (Edgevalley Ph2)
Date: May 5, 2022 Project Manager: DH
Collector(s): D AL TC Visit #:

WEATHER CONDITIONS					
Temp.	Wind:		Cloud Cover (%)	Precipitation	
12°C	Direction: E		95%	☒ 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: 2

Towards Comm 3a/b

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

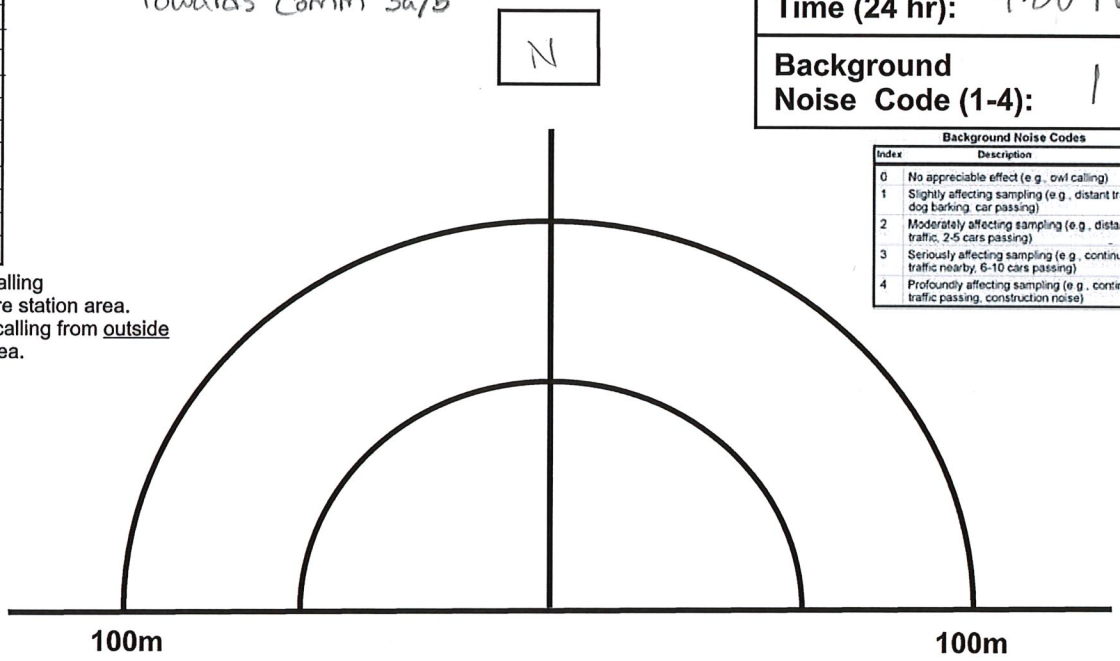
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 9:00 PM

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: 1

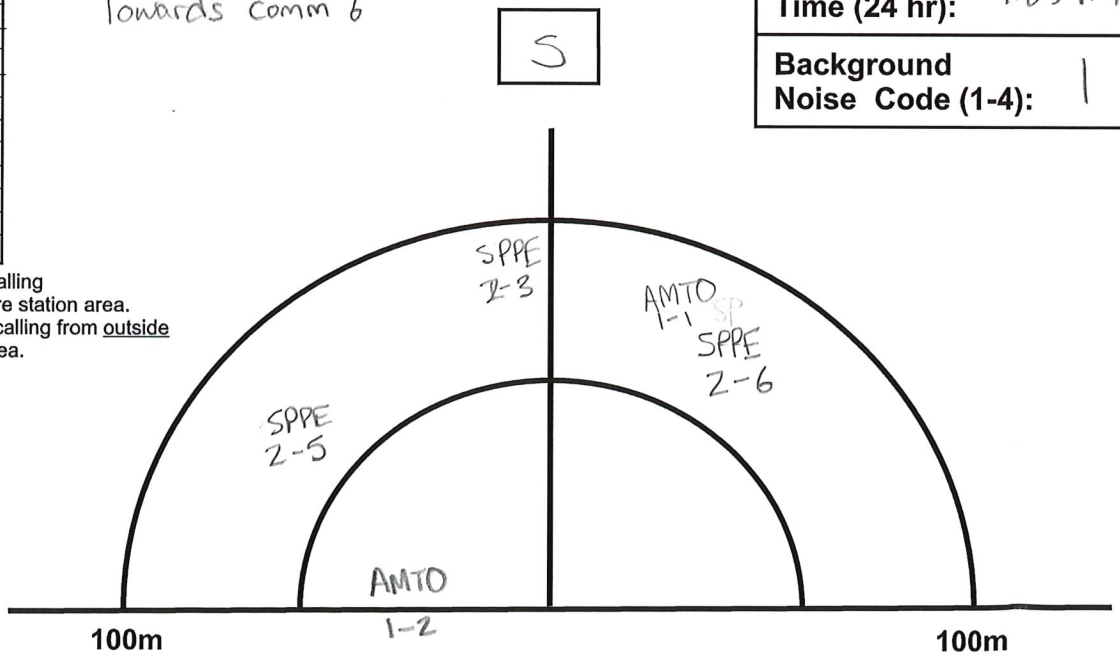
Towards Comm 6

Species	In*	Out**
AMTO	X	
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): 9:05 PM

Background Noise Code (1-4): 1



AMPHIBIAN MONITORING FIELD SHEET

Project: 42024-601 (Edgevalley Ph2)
Date: May 5, 2022 Project Manager: DH
Collector(s): AL TC Visit #:

WEATHER CONDITIONS						WIND SCALE	
Temp.	Wind:		Cloud Cover (%)	Precipitation		0	Calm
12°C	Direction: E		95%	☒ 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							

Reference Site: ☐ No ☐ Yes UTM

Station: 3

Towards where swimming pool used to be

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

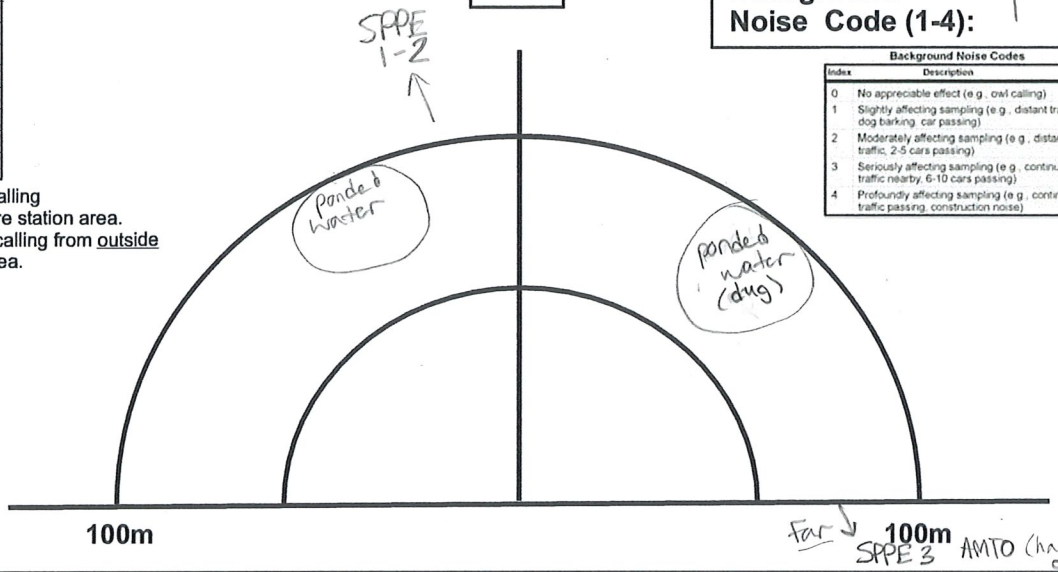
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 9:18 PM

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)



SPPE 3 AMTO (hard to tell c.c, maybe 3?

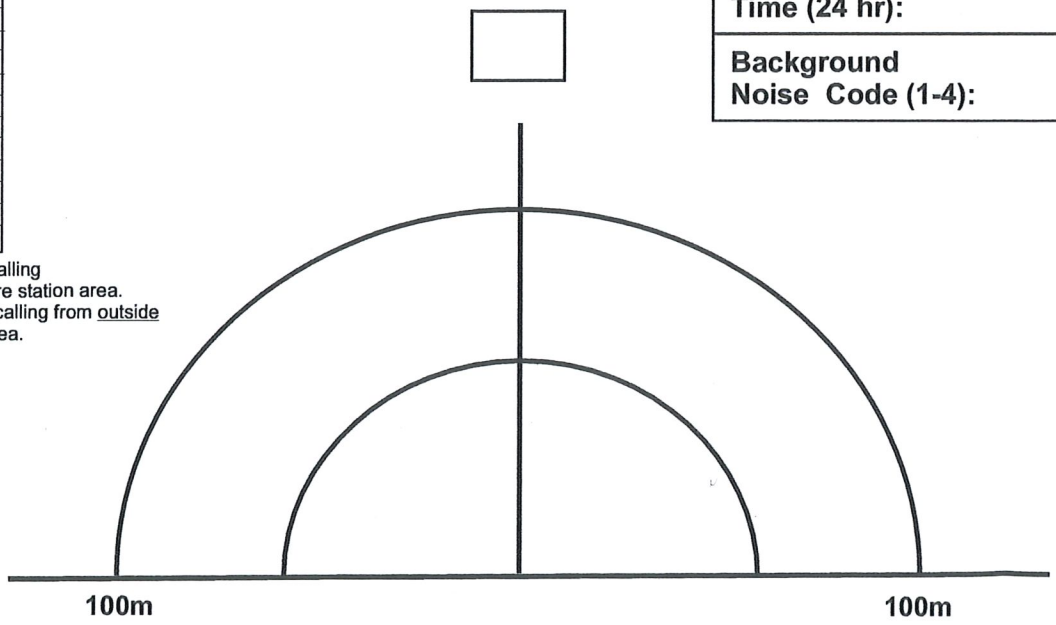
Station:

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):



GENERAL SITE INFORMATION FIELD SHEET

Project: 42024-601 (Edgevalley Ph2)
Date: June 1, 2022 Project Manager: DH
Collector(s): AL DN Visit #:
Time started: 9:00PM Time finished: 9:55 AM Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
17°C	Direction: N		20%	Today: Earlier rain Yesterday: No

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:

Bank Swallows actively nesting (482723 4764811)

Green Frog seen at 482777 4764811

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

AMPHIBIAN MONITORING FIELD SHEET

Project: 42024-601 (Edgevalley Ph2)
Date: June 1, 2022 Project Manager: DH
Collector(s): AL DN Visit #:

WEATHER CONDITIONS					
Temp.	Wind: 1		Cloud Cover (%)	Precipitation	
17°C	Direction: N		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

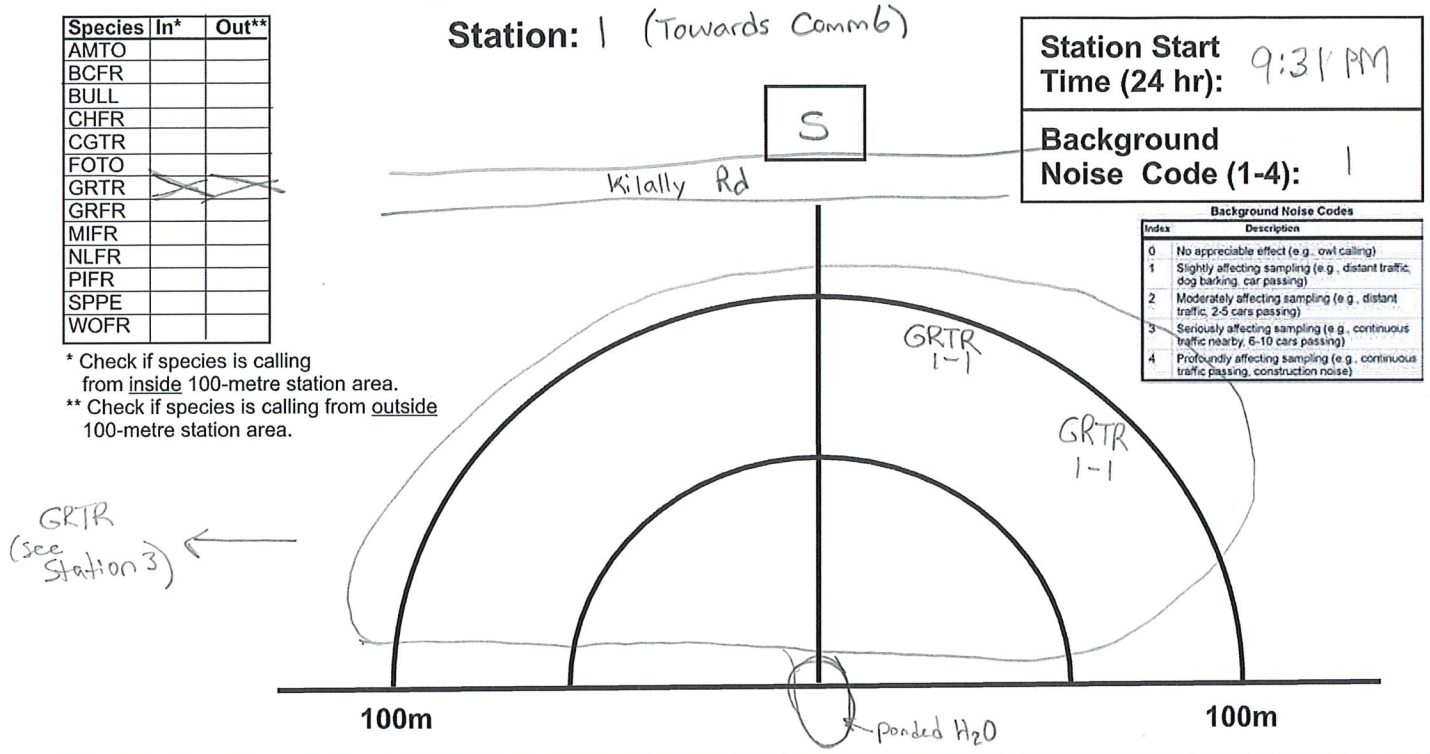
Station: 1 (Towards Comm 6)

Species	In*	Out**
AMTO		
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): 9:31 PM

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)

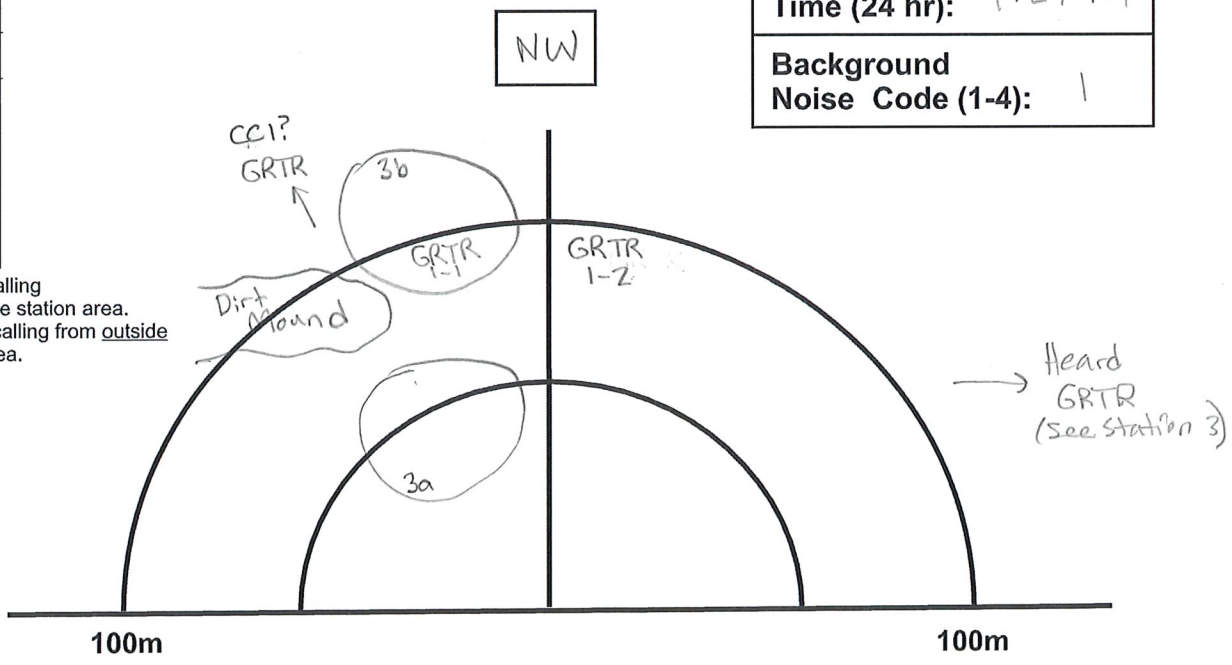
Station: 2 (Towards Comm 3a/3b)

Species	In*	Out**
AMTO		
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): 9:27 PM

Background Noise Code (1-4): 1



AMPHIBIAN MONITORING FIELD SHEET

Project: Edgevalley Ph2 (42024-601)
Date: June 1, 2022 Project Manager: DH
Collector(s): AL DN Visit #:

WEATHER CONDITIONS					
Temp.	Wind: 1		Cloud Cover (%)	Precipitation	
17°C	Direction: N		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

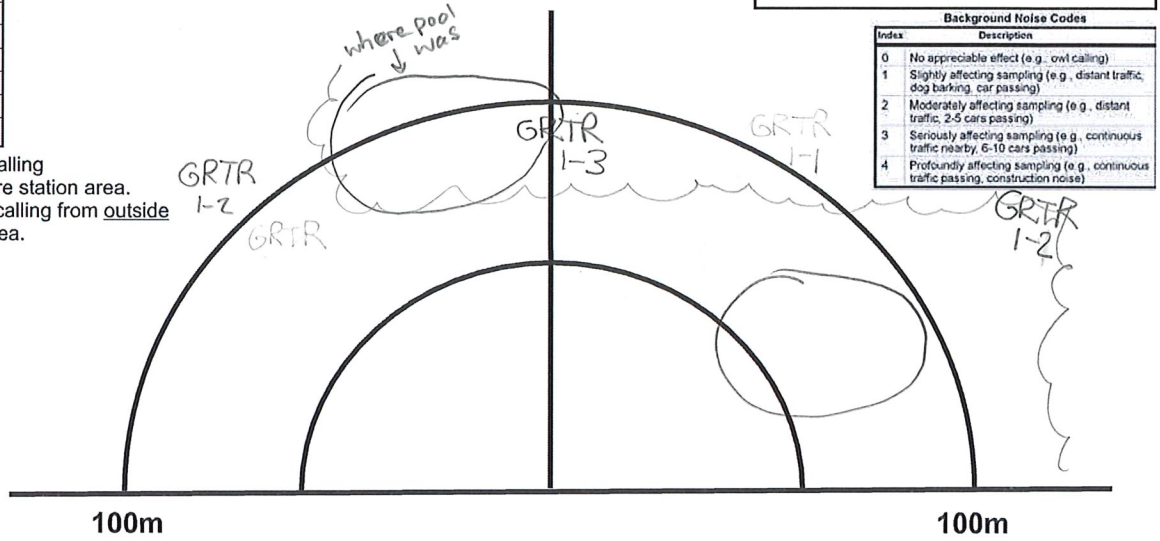
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	X	X
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

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

Station: 3 (Towards ponded water + where pool used to be)

Station Start Time (24 hr): 9:44 PM

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)

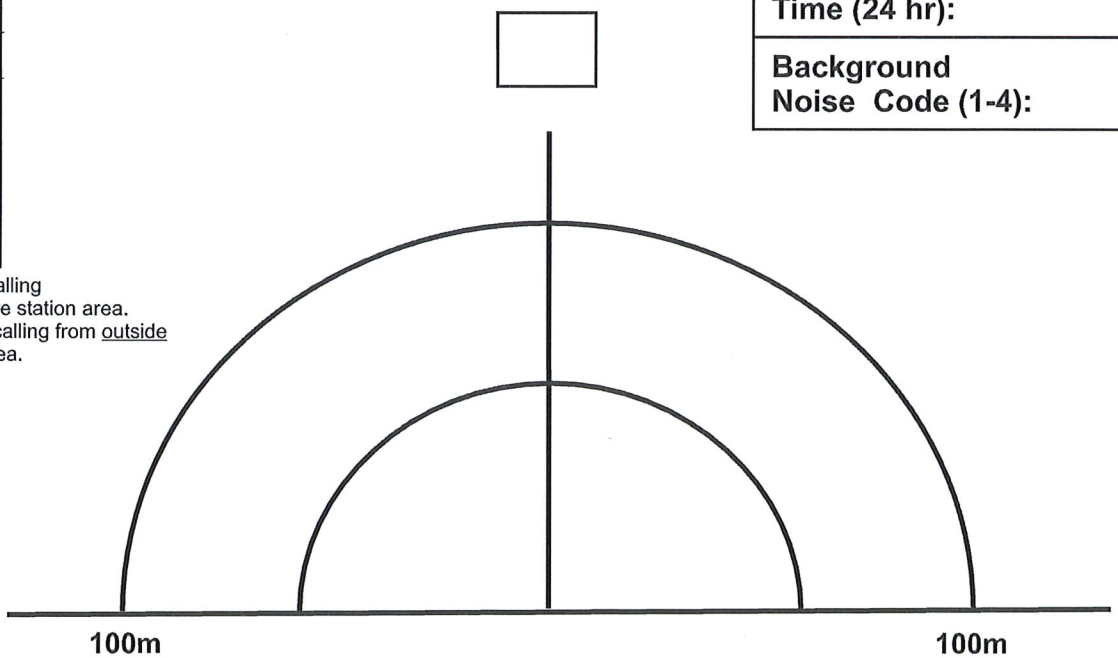
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* 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 H

Bat Maternity Roost Survey Data

GENERAL SITE INFORMATION FIELD SHEET

Project: Drew Lo Edge Valley
Date: April 8/19 Project Manager: LM
Collector(s): LM Visit #:
Time started: 1:00pm Time finished: 3:15pm Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind: 2		Cloud Cover (%)	Precipitation
15°C	Direction:		50%	Today: 0 Yesterday:

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 Bat habitat trees	☐	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:				

Graphic ☐ Attached or Name N:\Templates\Other Templates\Field Sheets\BioLogic_General Field Sheet Checked by Project Manager ☐ Date:

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Drewlo [illegible] Survey Date(s): April 8/19

Site Name: Edgevalley Phase 2 Observers(s): LM

ELC Ecosite: Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
1	Dead ash	55	4	☑ cavity[3] ☐ loose bark ☑ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?[4] 5	43.035727	-81.207773	
2	Black locust/ maple/ cottonwood	100	3	☑ cavity ☐ loose bark ☑ crack ☑ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3? 3	43.035759	-81.208132	
3	"	150	3	☐ cavity ☑ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3? 4	43.036923	-81.210017	Broken top dead top
4	Ash dead	52	No trees around	☐ cavity ☑ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3? 3	43.034848	-81.209997	
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			

[2] **Height Class**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

[4] **Decay Class**: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

Appendix I

Reptile Survey Data

GENERAL SITE INFORMATION FIELD SHEET

Project: DREWLO - EDGE VALLEY PH 2
Date: APR. 30/19 Project Manager:
Collector(s): F.M, E.B. Visit #:
Time started: 12:30 Time finished: 16:15 Combined collectors' hours: 7.5
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector ☐

WEATHER CONDITIONS			
Temp.	Wind Speed and Direction	Cloud Cover (%)	Precipitation
8	7-11km/h E	100	Today: Yesterday:

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) OLD FOUNDATION (EXPOSED), POOL				
☑ ☐ Rock Piles				
☑ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☑ Fallen Logs outside woods (#'s)				
☐ ☑ Brush Piles				
☐ ☑ Snags (raptor perch)				
☑ ☐ Tree Cavities (nesting) COMM 1, OLD RESIDENCE AREA				
☐ ☑ 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) NOTED ON MAY 2 SHEET				
☐ ☑ 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 OLD POOL				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☑ None observed				
☐ open drain ☐ ☐ ☐				
Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

NO REPTILES OBSERVED
PRELIM ELC'S COMPLETED

Graphic ☐ Attached or Name Checked by Project Manager ☐ Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: DREWLO - EDGE VALLEY PHZ
Date: MAY 2/19 Project Manager:
Collector(s): P. MIKODA Visit #:
Time started: 14:25 Time finished: 16:15 Combined collectors' hours: 1.8
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector ☐

WEATHER CONDITIONS			
Temp.	Wind Speed and Direction	Cloud Cover (%)	Precipitation
13-18	0-9 km/h N	30	Today: 0 Yesterday: 0

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:				

HAM BURROWS / UNDERGROUND ACCESS
483056/4764891
483060/4764948
483060/4764960

ALL HISTORIC SPOIL + DEBRIS PILES REVIEWED.
NO SNAKES OBSERVED ON SITE
POOL REVIEWED - NO TURTLES OBSERVED
GREEN FROG TADPOLES OBS. IN POOL
UNIDENTIFIED FROGS OBSERVED - LIKELY GREEN.

Graphic ☐ Attached or Name Checked by Project Manager ☐ Date:

Appendix J

General Reptile Mitigation Measures

GENERAL MITIGATION MEASURES FOR CONSTRUCTION ADJACENT TO HABITAT FOR PROTECTED REPTILES

1. Awareness - Prior to conducting any work on site, project personnel and contractors should be made aware of the possible presence of reptile species protected by the ESA (2007), particularly Eastern Hog-nosed Snake [THR]. Information materials to aid in species identification and encounter response should be provided to all personnel on site.

2. Vegetation Clearing – Vegetation clearing, including grubbing, will occur when weather conditions are suitable to allow reptiles to flee (sunny and at least 18°C). Vegetation clearing and grubbing will occur in an orderly and systematic manner to direct wildlife movement in one direction, and to reduce the possibility of wildlife encounters with equipment. Vegetation clearing will occur under the supervision of a qualified biologist to ensure no Eastern Hog-nosed Snake [THR] or other Protected Species are harmed. Clearing of vegetation can occur without the supervision of a qualified biologist if it occurs during the inactive season (between December 1 and March 31) and no grubbing or below-ground works are undertaken. Vegetation clearing during the inactive season should be performed in a manner that avoids soil compaction; vegetation can be cleared by hand, or cleared while the soil is frozen with light machinery that is equipped to reduce compaction. Removal of candidate bat maternity roost trees (trees with cavities or loose bark) must occur between September and April, outside the active bat season.

3. Exclusion Fencing – Once vegetation has been cleared, geotextile fencing should be installed as snake exclusion barrier along the construction boundary. The geotextile fence should be at least 1.0 meters high from grade at all locations and buried at least 0.2 meters below grade. Exclusion fencing should extend out from its terminal edges by a distance of at least 5 meters and angle out or back at a 45° angle (whichever is most beneficial) to direct wildlife away from the construction site. Installation of fencing during the active season (April 1 to November 30) will be supervised by a qualified biologist. Outside the active season, fencing may be installed without the supervision of a qualified biologist.

4. Erosion Control – To prevent entanglement of wildlife, including Protected snake species, mesh or netting-type material must not be used for erosion control. Net-free materials, such as Curlex Net-Free blanket, riprap over geotextile fabric, or similar alternative is recommended.

5. Equipment Inspection - Between April 1 and November 30th, all equipment and machinery that is left idle for over 1 hour, or overnight, on the property must be visually examined prior to (re)ignition, to ensure reptiles are not present within the machinery. This visual examination should include all lower components of the machinery, including operational extensions and running gear.

6. Encounters and Reporting - Any Protected Species or other protected wildlife that is encountered on site must be protected from harm and harassment. Should a Protected reptile be observed in the work area and presumed to be unharmed, all project personnel and operating machinery should maintain a minimum 30-meter distance from it at all times until it has left the area. Contact MECP immediately if this cannot be done. A large Rubbermaid-type container with ventilated lid should be kept on site at all times in the event a Protected Species is injured or killed during the project. If a Protected Species is injured, it should be immediately transported in the container to a licensed Wildlife Custodian. During transport, the snake inside the container should be maintained at a temperature between 10 and 30°C. MECP will be contacted immediately if any Protected Species are harmed or killed during construction.

7. Site Management

The property should be clean and free of debris for any activities that occur during the active season for reptiles (April 1st to November 30th). Snakes may find and occupy materials and equipment stored on site and could be harmed when materials and debris are handled or used. The creation and duration of debris stockpiles within the development footprint should be limited. Materials such as excavated soils, lumber, and other construction materials should only be stored in areas that previously had understorey vegetation (1m or shorter), mowed to a height of 5 cm or shorter. Excavated soil should not be stored on the sites long term. Flat materials such as plywood or rubber mats should not be left lying on the ground. Any material stockpiles created on the property during the project must be visually examined for Protected reptiles prior to disturbance or removal.

8. Site Maintenance – Cleared areas should be maintained at a height of 7-10cm. Allowing grass to grow greater than 15 cm in height could attract snakes to the construction sites.