73 and 79 Sideroad 19 Residential Development

Township of Centre Wellington (Fergus)

Scoped Environmental Impact Study

Prepared for:

WrightHaven Homes Limited

925 Gartshore Street, Unit 1

Fergus, ON N1M 3V9

Project Number:

AA22-163A

Report Date:

October 17, 2024

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
3-5 Edinburgh Road South . Guelph . Ontario . N1H 5N8 . 519.822.6839 . www.aboudtng.com

Project Team

Project Manager	Heather Dixon
Senior Review, Terrestrial Ecologist	Cheryl-Anne Ross
Terrestrial & Wetland Ecologist	Shannon Davison
Wildlife Ecologist	Brynn Varcoe
Arborist	Dan Bechard

Version History

Version	Date	Issue	Author	Approved
Draft for Client	October 9, 2024	1	H. Dixon	C. Ross
Final for Client	October 17, 2024	2	H. Dixon	C. Ross

Statement of limitations

This report was prepared exclusively for WrightHaven Homes Ltd. by Aboud & Associates Inc. It is intended for the sole and exclusive use of WrightHaven Homes Ltd. and its authorized agents for the purpose(s) set out in this report. Any uses of this report or its contents by a third party, or any reliance on decisions made based on it, are the sole responsibility of that party.

Information obtained during the site investigations or received from third parties does not exhaustively cover all possible environmental conditions or circumstances that may exist in the study area. If a service is not expressly indicated, it should not be assumed that it was provided. Any discussion of the environmental conditions is based upon information provided and available at the time the conclusions were formulated.

This report(s) document(s) is provided in electronic format for convenience only. Aboud & Associates Inc. shall not be liable in any way for errors or omissions in any electronic version of its report document.

Aboud & Associates Inc. assumes no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report. and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties, or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made, or any action taken based on this report, or the work referred to in this report.

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

Any conclusions or recommendations made in this report reflect Aboud & Associates Inc. judgment based on conditions observed at the time of the Site visit on the date(s) set out in this report and on the interpretation of data made in the reports, based on the studies specifically identified in the report.

Table of Contents

List of Tables

List of Figures

List of Appendices

1.0 Introduction

Aboud & Associates Incorporated (AA) was retained by WrightHaven Homes Limited to complete a Scoped Environmental Impact Study (EIS) for the proposed residential development at 73 and 79 Sideroad 19, Township of Centre Wellington (Fergus), ON. The proposed site plan is shown in *Figure 1*. The Scoped EIS focuses on characterizing the existing natural features within the study area, mapping significant natural features and identifying potential constraints.

1.1 Study Area

The study area comprises the lands proposed to be developed (the subject lands) and up to 120 metres from the subject lands (*Figure 2*). The study area is entirely within the jurisdiction of the Grand River Conservation Authority (GRCA) and is partially within the GRCA Regulation Limit. Natural features within the study area include an unevaluated wetland and a storm sewer.

1.2 Existing Land Use

The subject property is within the Urban Centre as designated by the County of Wellington Official Plan; no Greenland features are currently mapped. The subject property is designated as Residential, per the Township of Centre Wellington Official Plan Schedule A-1, and the study area includes lands designated as Natural Heritage System, per the Wellington County Draft Natural Heritage System mapping. The subject property is designated as Residential, per the Township of Centre Wellington Official Plan Schedule A-1. The subject property is zoned by the Township of Centre Wellington Zoning By-law 2009-045 as Residential R1A, with a portion being Environmental Protection and Environmental Protection Overlay.

1.3 Proposed Development

The proposed development will include an access road (including turnaround and parking areas); four bungalow townhouses, eight two-storey townhouses, and eight semi-detached bungalows with associated yards and driveways which will front onto the proposed access road; one single detached dwelling with yard and driveway fronting onto Sideroad 19; an amenity area; and servicing and stormwater management (SWM) infrastructure, including a SWM facility (*Figure 1*). The single detached house currently present at 73 Sideroad 19 will remain, for a total of 22 units present within the property limits.

1.4 Existing Regulations

The Provincial Policy Statement (PPS 2020), Endangered Species Act (ESA 2007), Fisheries Act (FA 1985), Species at Risk Act (SARA, 2002), Policies of the Grand River Conservation Authority (GRCA), Wellington County Official Plan, Township of Centre Wellington Official Plan (2013 Consolidation) and the Township of Centre Wellington Zoning By-law 2009-045 (2018 Consolidation) are applicable to this proposed development and are outlined in detail in *Appendix 1*, including the policy document, sections, applicable details, conformity and any proposed mitigation or permitting requirements as it relates to these policies.

As the Provincial Planning Statement (PPS, 2024) comes into effect on October 20, 2024, policies within the 2024 PPS have been considered in relation to the proposed development.

1.5 Terms of Reference

Based upon the above Acts, Policies and Regulations, Terms of Reference (ToR) for the Scoped EIS were developed and submitted to GRCA Resource Planner, Laura Warner, and Brett Salmon, Township of Centre Wellington Managing Director of Planning and Development on August 25, 2021. The GRCA provided comments through email correspondence on September 01, 2021. The comments indicated that additional studies may be required to support the proposed developments, that the EIS should include a rational to the MNDMNRF to determine if the wetland onsite should be complexed as part of the adjacent PSW, and assess the presence of the storm sewer bisecting the site. An email requesting clarification on some of these comments was sent on September 7 2021, with a follow up sent on October 1, 2021. Following updates to the project, an updated ToR was submitted on November 28, 2022 to GRCA Resource Planner Ben Kissner and Mr. Salmon. No response was received, so the ToR was resent on May 16, 2024. GRCA responded on May 23, 2024, stating that they would respond with comments. The Township responded on May 24, 2024, stating that they would defer to the GRCA for comments. GRCA provided comments on June 5, 2024, stating that the ToR and EIS assess compliance with the project with O. Reg. 41/24 and associated GRCA policies, and that other technical studies should be assessed by the EIS. The ToRs and agency correspondence are provided in *Appendix 2*.

2.0 Methods

2.1 Background Review

A background information review was conducted of both biological and physical features within the vicinity of the study area. The following resources were consulted as part of this review:

- Aerial photography of the subject site
- JLP Services Inc. 2023. Geotechnical Investigation Proposed Residential Development 79-87 Side Road 19 Township of Centre Wellington (Fergus), Ontario.
- GEI Consultants Canada Ltd. (GEI). 2024. Functional Servicing and Stormwater Management Report: 79 Sideroad 19, Township of Centre Wellington (Fergus).
- GEI Consultants Canada Ltd. (GEI). 2024. Hydrogeological Study Report: 79 Sideroad 19, Township of Centre Wellington (Fergus).
- GRCA mapping (accessed August 11, 2021) of natural heritage features (e.g. regulation limit, GRCA and MNRF wetlands, ANSI's and MNRF woodlands),
- Grand River Information Network (GRCA, 2021),
- Wellington County Draft Natural Heritage System Mapping,
- Wellington County Official Plan, May 6, 1999 (2021 revision) and schedules,
- Township of Wellington Zoning By-law 2009-045 (2018 consolidation),
- Wellington County Significant Species List (Dougan & Associates, 2009).
- Natural Heritage Information Center, Make-a-map, accessed January 4, 2023,
- Ontario Nature. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibian, accessed January 4, 2023,
- Bird Studies Canada. Atlas of Breeding Birds of Ontario, accessed January 4, 2023,
- Federation of Ontario Naturalists, Atlas of the Mammals of Ontario, Ontario Nature. Ontario Butterfly Atlas, accessed January 4, 2023,
- DFO Species at Risk Mapping. Accessed January 4, 2023,
- Aquatic Resource Area Survey Point. Accessed January 4, 2023,
- iNaturalist. Accessed January 4, 2023, and
- eBird. Cornell Lab of Ornithology. Accessed January 4, 2023.

2.2 Wetland Boundary Delineation

The study area contains an unevaluated GRCA wetland in the south-west corner of the study area. Cheryl-Anne Ross, Certified Ontario Wetland Evaluator, AA, performed an

initial staking of the boundaries of the wetland on July 15, 2021, with verification by Ryan Hamelin from the GRCA completed on September 27, 2021, additional wetland verification took place on October 14, 2022, and was verified with Richard Baxter from the GRCA, for additional lands to the west of the initial proposal. Boundaries were determined using the vegetation species present and soil probes to depths of up to 60 cm for water and hydric soil detection, as per the *Ontario Wetland Evaluation System* (OWES, 2013). The wetland boundary was established where vegetation was comprised of 50% wetland and 50% upland species, and where soils displayed hydric conditions (e.g., presence of mottles and/or gleys), per the *Ontario Wetland Evaluation System* (OWES, 2013). Due to property access restrictions, it was not possible to confirm the accuracy of the entire wetland boundary on adjacent lands outside of the study area. Detailed survey dates and weather information are provided in *Appendix 3*.

2.2.1 Buffer Recommendations and Setbacks

Recommended buffers and setbacks for wetland boundaries were determined through a variety of resources, including the GRCA's Wetland Policy Appendix – Interim Wetland Buffer Policy (2003); The City of London- Guidelines for Determining Setbacks and Ecological Buffers (2004); and the Ecological Buffer Guideline Review (Beacon, 2012).

2.3 Vegetation

2.3.1 Ecological Land Classification

Vegetation communities within the study area were characterized and delineated by staff certified in Ecological Land Classification through field investigation, following the Ecological Land Classification (ELC) system for Southern Ontario 1st approximation; community codes used generally follow the 2nd approximation (Lee, et al., 1998, 2008). Boundaries of ELC communities were mapped using aerial images and field observations (*Figure 2*). Digitized ELC data sheets are provided in *Appendix 4*. Detailed survey dates and weather information are provided in *Appendix 3*.

Identified ELC communities were cross-referenced with the NHIC Ontario Plant Community List (NHIC 2015) to determine the presence of rare plant communities (S1-S3). The Subnational, or Provincial, Ranks (S Rank) are assigned by the Ontario Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) in order to help assign protection priorities.

2.3.2 Botanical Inventory

The study area was inventoried where access was permitted, and from the property limits and roadside, to provide a comprehensive two season botanical inventory. Detailed survey dates and weather information are provided in *Appendix 3*.

Identified vascular plant species were compared to provincial and federal SAR lists (COSSARO, SARA), provincial ranks (NHIC 2021), global ranks, Wellington County Significant Plant List (Dougan & Associates, 2009), and the Distribution and Status of the Vascular Plants of Southwestern Ontario (Oldham, 1993) to assess federal, provincial, regional and local conservation status of each species. English colloquial names and scientific binomials of plant species generally follow the Database of Vascular Plants of Canada (VASCAN) (VASCAN 2015).

Identification of environmentally sensitive plant species was completed based on the assignment of a coefficient of conservatism value (CC) for each native species (Oldham et al., 1995). The value of CC, ranging from 0 (low) to 10 (high), is based on a species' tolerance of disturbance and fidelity to specific natural habitat parameters. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters. These species may be more sensitive to environmental changes (Mortarello et al., 2010).

A list of all identified plant species is provided in *Appendix 5*. The list provides botanical name, common name, provincial rarity rank (S-Rank), global rarity rank (G-Rank), provincial SAR status, federal SAR status, coefficient of conservatism (CC) and coefficient of wetness (CW). Plant species that could only be identified to genus were not assigned the above information.

2.3.3 Tree Inventory

A total of 265 trees with a diameter at breast height (DBH) of 10cm of greater were inventoried in the study area. DBH, species, overall condition and estimated crown reserve were collected for each tree. The locations of individual trees were surveyed by Dan Bechard on December 1 and 2, 2022.

2.4 Wildlife

2.4.1 Incidental Wildlife Observations

Incidental observations of insects, mammals, birds, and reptiles were recorded during all visits. Detailed survey dates and weather information are provided in *Appendix 3*.

2.4.2 Bat Maternity Habitat Surveys

Bat maternity habitat surveys occurred during leaf off on March 19, 2024. All ELC communities identified as FOD, FOC, FOM, SWD, SWC, and SWM are considered Candidate Bat Maternity SWH per the SWH EcoRegion Criterion Schedule 6E (MNRF, 2015). As tree removal will be necessary for the construction of the development, a

survey for candidate bat maternity trees took place. All trees with a diameter at breast height (DBH) greater than 10 cm, and meeting any of the criteria for candidate bat habitat as outlined in the "Treed Habitats – Maternity Roost Survey" protocol, produced by the MECP (2022) were recorded.

Candidate trees are those with some or all of the following characteristics:

- Tallest snag/cavity tree
- Exhibits cavities or crevices most often originating as cracks, scars, knot holes or woodpecker cavities
- Has leaf clusters, particularly relevant for Tri-colored Bats
- Has the largest diameter breast height (>25cm diameter at breast height, minimum >10cm diameter), however trees <25cm diameter at breast height are well documented as supporting day roosts of little brown myotis, northern myotis and tri-colored bat
- Is within the highest density of snags/cavity trees (e.g., cluster of snags)
- Has a large amount of loose, peeling bark
- Cavity or crevice is high in snag/cavity tree (>10m)
- Tree species that provide good cavity habitat (e.g., white pine, maple, aspen, ash, oak)
- Canopy is more open (to determine canopy cover, determine the percentage of the ground covered by a vertical projection of the outermost perimeter of the natural spread of the foliage of trees); and
- Exhibits early stages of decay (decay Class 1-3).

A thorough walk-through of each suitable vegetation community identified above, where access was provided, was performed. During the walk-through, trees exhibiting one or more of the above characteristics were recorded. Detailed survey dates and weather information are provided in *Appendix 3*.

2.4.3 Woodpecker Cavity Identification Surveys

With guidance from the Pileated Woodpecker Cavity Identification Guide (Environment and Climate Change Canada, 2023) and A Comparison of Some Aspects of the Breeding Ecology of Red-Headed and Red-Bellied Woodpeckers in Kansas (Jackson, 1976), all trees within the right-of-way in the study area were examined for Pileated Woodpecker and Red-headed Woodpecker cavities including those for nesting, roosting and feeding. The survey occurred on March 14, 2024, and was conducted by Heather Dixon and Brynn Varcoe. Detailed survey and weather information are provided in *Appendix 3*.

Pileated Woodpeckers and Red-headed Woodpeckers create cavities for different stages of their life cycle including nesting, roosting and feeding. The following characteristics were examined during surveys to determine the type of cavity observed.

- Number of holes
- Cavity edge texture
- Hole shape
- Hole size
- Hole depth
- Hole appearance
- Suspected woodpecker species
- Tree type

While all cavities are recorded, only nesting cavities of Pileated Woodpecker are protected under the MBCA outside the nesting season, while active nesting cavities of Red-headed Woodpecker are protected under the ESA, with the suggested regulated habitat under the Red-headed Woodpecker Recovery Strategy to be 200 m around the nest cavity (ECCC, 2021; MECP, 2022).

Residents on Sideroad 19 had identified potential Eastern Screech-Owl nesting as a concern for the proposed development of the property, Concurrent with the Woodpecker Cavity Survey, the property was also surveyed for Eastern Screech-Owl nesting cavities.

2.5 Significant Wildlife Habitat

With guidance from the *Significant Wildlife Habitat Technical Guide* (MNRF, 2000) and the SWH EcoRegion Criterion Schedule 6E (MNRF, 2015), the study area was considered for the presence of Significant Wildlife Habitat (e.g., specialized habitats for wildlife, and habitat for species of conservation concern). Detailed survey dates and weather information are provided in *Appendix 3*. An assessment of the study area for all SWH is provided in *Appendix 6*.

2.6 SAR Habitat Assessment

A thorough review of all background documents was conducted to compile a master list of all Species at Risk (SAR), and species with conservation designation that may occur in the study area, including a review of SAR presence within Wellington County based on the most recent MECP or COSEWIC mapping. A review of the site, compared to habitat requirements for each species was conducted; the site was then evaluated to

determine if candidate habitat was present using Ecological Land Classification, guidance from MNRF documents, and on-site knowledge acquired through field surveys. Detailed survey dates and weather information are provided in *Appendix 3*. An assessment of the study area of candidate habitat presence for SAR is provided in *Appendix 7.*

3.0 Existing Conditions

Information that characterizes the existing conditions of the study area came from several sources, including, but not limited to, background review of existing documents, public information sources, and field reconnaissance.

3.1 Background Review

3.1.1 Wildlife Atlases-Species of Conservation Concern

A thorough background search of the study area and adjacent lands has been completed using the resources noted in Section 2.1. The species of conservation concern (SCC), including those listed under the ESA and/or SARA as well as those with S-ranks of S1-S3, identified in the background search are identified in *Table 1*. *Table 1* includes the identified species, the sources where they were identified, their currents statuses under COSSARO, the ESA, COSEWIC, and SARA, as well as their provincial, national, and global ranks.

A total of 19 listed wildlife SCC were found in the background review, while an additional 30 species were not identified in any background source within 10km of the site, but are known to occur within Wellington County. The findings of this background search are presented in *Table 1* and *Appendix 8*. An assessment of the study area for candidate habitat for these SCC plus those known to occur within Wellington County is included in *Appendix 7.*

3.1.2 Ministry of Environment, Conservation and Parks

A request for information was sent to the Ministry of Environment, Conservation and Parks (MECP) on September 9, 2021, to inquire whether there were any additional records of Species at Risk noted for the study area. A response was provided on September 21, 2021 and indicated that the MECP had records of Silver Shiner (*Notropis photogenis*), Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*), Nine-spotted Lady Beetle (*Coccinella novemnotata*), Yellow-banded Bumble Bee (*Bombus terricola*), and Short-eared Owl (*Asio flammeus*) within or near the study area. Bald Eagle (*Haliaeetus leucocephalus*) was also identified as being present, but this species has since been delisted. The correspondence in its entirety is provided in *Appendix 9*.

Table 1. Species at Risk Identified in Background Review

Source	Common Name	Scientific Name	SARO	COSEWIC	SARA	S-RANK	G-RANK	N-RANK	Area sensitive	Area required (ha)	PIF Species (BCR 13)
OBBA	Bank Swallow	*Riparia riparia*	THR	THR	THR	S4B	G5	N5B, N5M			✓
eBird (2018), OBBA	Barn Swallow	*Hirundo rustica*	SC	THR	THR	S4B	G5	N3N4B, N3N4M			
NHIC, OBBA	Bobolink	*Dolichonyx oryzivorus*	THR	THR	THR	S4B	G5	N5B, N4N5M	✓	>10ha	✓
eBird (2020), OBBA	Chimney Swift	*Chaetura pelagica*	THR	THR	THR	S3B	G4G5	N4BN3M			✓
NHIC, eBird (2019), OBBA	Eastern Meadowlark	*Sturnella magna*	THR	THR	THR	S4B,S3N	G5	N4B, NUM	✓	>10ha	✓
OBBA	Eastern Wood-Pewee	*Contopus virens*	SC	SC	SC	S4B	G5	N5B, N5M			✓
OBBA	Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	END	S3	G5	N4B, N3M			✓
MECP	Short-eared Owl	*Asio flammeus*	SC	THR	SC	S4?B,S2S3N	G5	N4B, N3N, N4M	✓	>75ha	✓
eBird (2019), OBBA	Wood Thrush	*Hylocichla mustelina*	SC	THR	THR	S4B	G4	N4B, NUM			✓
MECP	Silver Shiner	*Notropis photogenis*	THR	THR	THR	S2S3	G5	N2N3			
MECP	Nine-spotted Lady Beetle	*Coccinella novemnotata*	END	END	NA	S1	G2	N2			
MECP	Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	END	END	END	S1S2	GH	N1			
MECP	Yellow-banded Bumble Bee	*Bombus terricola*	SC	SC	SC	S3S4	G2G4	N4?			
iNat (2021), OBA (2021)	Monarch	*Danaus plexippus*	SC	END	SC	S2N,S4B	G5	N3B, NNRM			
OMA	Little Brown Myotis	*Myotis lucifugus*	END	END	END	S3	G3G4	N2N4B, NNRN, NNRM			
ORAA (2019)	Milksnake	*Lampropeltis triangulum*	NAR	SC	SC	S4	G5T5	N3			
ORAA (2015)	Blanding's Turtle	*Emydoidea blandingii*	THR	END	END	S3	G4	N3			
NHIC, iNat (2020), ORAA (2019)	Midland Painted Turtle	*Chrysemys picta marginata*	NAR	SC	SC	S4	G5T5	N4			
NHIC, iNat (2022), ORAA (2018)	Snapping Turtle	*Chelydra serpentina*	SC	SC	SC	S4	G5T5	N4			

Legend:

COSSARO: Committee on Species at Risk Ontario

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

SARA: Species at Risk Act

G-Rank:

G3G4: Rare to common globally

G4: Common globally

G4G5: Common to very common globally

ESA: Endangered Species Act
END: Endangered
THR: Threatened
SC: Special Concern
NAR: Not at Risk

N- and S-Rank:

S1: Critically Imperiled—Critically imperiled in the jurisdiction (often 5 or fewer occurrences)
S2: Imperiled—Imperiled in the jurisdiction, very few populations (often 20 or fewer),
S3: Vulnerable—Vulnerable in the jurisdiction, relatively few populations (often 80 or fewer)
S4: Apparently Secure—Uncommon but not rare
S5: Secure
S#S#: Range Rank—Indicates a range of uncertainty about the status of the species
S#B- Breeding Status Rank
S#N- Non Breeding Status Rank

G5: Very common globally; demonstrably secure
T: Denotes that the rank applies to a subspecies or variety

Source Codes

OBA: Ontario Butterfly Atlas
ORAA: Ontario Reptile and Amphibian Atlas
OMA: Ontario Mammal Atlas
OBBA: Ontario Breeding Bird Atlas
eBird: eBird
iNat: iNaturalist
MECP: Communication with MECP
NHIC: Natural Heritage Information Centre
DFO: Department of Fisheries and Oceans Species at Risk Mapping

3.2 Wetland Boundary Delineation

3.2.1 Boundary Survey

Following confirmation of the wetland by the GRCA on July 15, 2021 and October 14, 2022, it was surveyed by Van Harten Surveying Inc. (*Figure 3*).

3.2.2 Wetland Characteristics

The Land Information Online wetland mapping shows part of the Provincially Significant Irvine Creek Wetland Complex adjacent to the study area, and an unevaluated GRCA wetland within the study area. One wetland community was identified within the study area: a Freeman's maple Mineral Deciduous Swamp which is contained within the GRCA wetland limit. A storm sewer runs from close to the southwest corner of this community into a pond which is hydrologically connected to the Irvine Creek Wetland Complex. However, as the unevaluated wetland is not directly adjacent to or directly hydrologically connected to the Irvine Creek Wetland Complex, it does not meet the criteria to be considered part of the complex.

3.3 Vegetation

3.3.1 Ecological Land Classification & Botanical Inventory

The community polygons identified during the ELC survey are summarized in *Table 2* below. Field forms and a comprehensive vascular plant list for the entire study area are presented in *Appendices 4* and *5*, respectively.

Table 2. Ecological Land Classification

ELC Code	Vegetation Type	Community Description
Deciduous Swamp (SWD)		
SWDM3-3	Swamp (Freeman's) Maple Mineral Deciduous Swamp	This community occurs in the southern portion of the study area, directly adjacent to the subject lands. The canopy is dominated by Freeman's Maple (*Acer x freemani*). The understorey is dominated by Common Buckthorn (*Rhamnus cathartica*), with Riverbank Grape (*Vitis riparia*) and Grey Dogwood (*Cornus racemosa*). The ground layer includes Spotted Jewelweed (*Impatiens capensis*), Ostrich Fern (*Matteuccia struthiopteris*), and Sedge species (*Carex* sp.).
Deciduous Woodland (WOD)		
WODM5	Fresh-Moist Deciduous Woodland	This community occurs in the southern portion of the subject lands. The canopy consists of Trembling Aspen (*Populus tremuloides*), Manitoba Maple (*Acer negundo*), and American Elm (*Ulmus americana*), while the subcanopy is dominated by Common Buckthorn, with Common Elderberry (*Sambucus canadensis*), European Mountain-ash (*Sorbus aucuparia*) and Sweet Cherry (*Prunus avium*). The understorey is dominated by Common Buckthorn with Riverbank Grape. The ground layer is comprised largely of Ostrich Fern, Spotted

		Jewelweed, Violet species (*Viola* sp.), Garlic Mustard (*Alliaria petiolata*), and Colt's-foot (*Tussilago farfara*).
Forb Meadow (MEF)		
MEFM4	Fresh-Moist Forb Meadow	This community occurs in the east of the subject lands. The canopy is sparse but consists of Common Apple (*Malus pumila*) and Black Walnut. The spare subcanopy consists solely of Common Buckthorn. The understory consists of Common Red Raspberry (*Rubus idaeus*), Red-osier Dogwood (*Cornus sericea*), Balsam Poplar (*Populus balsamifera*), and Wild Mock-cucumber (*Echinocystis lobata*). The ground layer is dominated by Wild Carrot (*Daucus carota*), Common Plantain (*Plantago major*), Red Clover (*Trifolium pratense*), Canada Goldenrod, and Garden Bird's-foot Trefoil (*Lotus corniculatus*).
Treed Agriculture (TAG)		
TAGM5	Fencerow	This community borders the southwest and northeast portions of the subject lands, and separates the subject lands from the surrounding residential properties.
Residential (CVR)		
CVR_3	Single Family Residential	The majority of the study area outside of the subject lands consists of residential properties.

3.3.1.1 Species at Risk, Regional and Local Significance

No vegetation communities listed in *Table 2* are considered rare in the province.

During the botanical inventories conducted in the spring and summer, 65 vascular plants were identified to species within the study area. Of the species identified, 30 species or 46% were native and 35 species or 54% were exotic. Most of the native species are ranked S5 (Secure in Ontario) or SNA (S-Rank not applicable) with one species, Norway Sedge (*Carex norvegica*), ranking S4 (apparently secure in Ontario), and two species, Black Walnut (*Juglans nigra*) and Virginia Creeper (*Parthenocissus quinquefolia*), ranked S4? indicating uncertainty in its ranking. No S1-S3 species were observed in the study area. One species, Round-leaved Dogwood (*Cornus rugosa*), is considered significant in Wellington County (Dougan & Associates, 2009).

3.3.2 Tree Inventory

The tree inventory collected information for 265 trees in the study area. The specific data for each individual tree is given in the Tree Protection Plan (Aboud & Associates, 2024), which has been provided under separate cover. A total of 40 species were identified during the tree inventory, of those species Trembling Aspen (*Populus tremuloides*) was the most abundant (18%), followed by Norway Spruce (*Picea abies*; 12%) and White Spruce (*Picea glauca*; 12%). Other species present include Norway Maple (*Acer platanoides*; 8%), Sugar Maple (*Acer saccharum*, 7%); Colorado Blue Spruce (*Picea pungens glauca*; 5%), Common Apple (*Malus pumila*; 5%), Eastern White Cedar (*Thuja occidentalis*; 4%), Silver Maple (*Acer saccharinum*; 4%), Siberian Crab-apple (*Malus baccata*; 3%), and Manitoba Maple (*Acer negundo*; 3%), with the remaining 17% comprised of 29 species with one to four individual trees.

A summary of the number of trees recommended to be preserved or removed based on the health and condition of trees or the development impact is detailed in *Table 3*. Further inventory may be required at the detailed design stage to ensure a thorough accounting of the trees that may be impacted.

Table 3. Summary of Tree Impacts

Recommendation	Individual Trees
Remove (Condition)	4
Removed (Development)	175
Remove (Condition and Development)	8
Total Preserved	78
Total Removed	187

3.4 Wildlife

3.4.1 Incidental Wildlife Observations

Incidental wildlife observations made outside of the above formal field surveys are presented in *Table 4*. All observations were of single individuals unless otherwise stated.

Table 4. Incidental Wildlife Observations

Common Name	Scientific Name	Taxa	Date	Location/Notes
American Crow	*Corvus brachyrhynchos*	Bird	August 31 and October 6, 2021	Observed within the Forb Meadow during Ecological Land Classification. Also observed during Fall Botanical.
Black-capped Chickadee	*Poecile atricapillus*	Bird	August 31 and October 6, 2021, March 19, 2024	Observed within the Forb Meadow and Deciduous Swamp during Ecological Land Classification. Also observed during Fall Botanical, Bat Maternity Habitat Survey, and Woodpecker Cavity Identification Survey.
Blue Jay	*Cyanocitta cristata*	Bird	August 31, 2021 and March 19, 2024	Observed within the Forb Meadow and Deciduous Swamp during Ecological Land Classification. Also observed during Bat Maternity Habitat Survey and Woodpecker Cavity Identification Survey.
Common Grackle	*Quiscalus quiscula*	Bird	March 19, 2024	Observed within the Deciduous Woodland during Bat Maternity Habitat Survey and Woodpecker Cavity Identification Survey.
Mourning Dove	*Zenaida macroura*	Bird	March 19, 2024	Observed within the Deciduous Woodland during Bat Maternity Habitat Survey and Woodpecker Cavity Identification Survey.
Northern Cardinal	*Cardinalis cardinalis*	Bird	May 18, 2021 and March 19, 2024	Observed within the Deciduous Woodland during Ecological Land Classification.
Red-winged Blackbird	*Agelaius phoeniceus*	Bird	March 19, 2024	Observed within the Deciduous Woodland during Bat Maternity Habitat Survey and Woodpecker Cavity Identification Survey.
Song Sparrow	*Melospiza melodia*	Bird	March 19, 2024	Observed within the Deciduous Woodland during Bat Maternity Habitat Survey and Woodpecker Cavity Identification Survey.
Monarch	*Danaus plexippus*	Insect	August 31, 2021	Observed within the Forb Meadow during Ecological Land Classification. Species of Conservation Concern.
Red Squirrel	*Tamiasciurus hudsonicus*	Mammal	March 19, 2024	Observed within the Deciduous Woodland during Bat Maternity Habitat Survey and Woodpecker Cavity Identification Survey.

3.4.2 Bat Maternity Habitat Surveys

A total of 5 candidate trees were identified during these surveys and are shown on *Figure 3*. The identified trees consist of Manitoba Maple, Trembling Aspen, Crack Willow, and Silver Maple. Of these, all were in decay classes 1-3, height classes 1-2, and had a DBH > 25 cm, one had loose bark, one had knot holes, four had cavities, with one having a cavity at 10 m of height or greater, and none had cracks or another snag present within 10 m. The full results of this survey are shown in *Table 5*. The trees are of lower suitability, meeting less than half of the characteristics of suitable candidate bat habitat and being far apart. Willow is not considered a preferred tree species for bat maternity roosts, with Oaks, Maples, Hickories, Aspens, Pines, and Spruces preferred for the endangered bat species in Ontario (Perry and Thill, 2007; COSEWIC, 2013; Humphrey and Fotherby, 2019). Candidate snag 2 is within the wetland buffer area, and will not be removed for construction, and three of the remaining trees are landscape trees rather than naturally occurring specimens, occurring in either the Fencerow or Single Family Residential communities. Candidate snag 3 occurs within a ‘treed habitat’ (the Fresh-Moist Deciduous Woodland community), as per the MECP guidance document (2022), but its one tree, not meeting many of the criteria, so removal outside the maternity season would not be an impact to habitat under the ESA. As only four low quality trees will be removed, only one of which are found within ‘treed habitats’ per the MECP guidance document, and none of which are found within the appropriate ELC communities of forest or swamp, per the SWH guidance, no additional studies or habitat compensation is expected to be required, provided all removals occur outside of the bat maternity window.

Table 5. Candidate Bat Maternity Snags

Tree #	TPP Tree #	Tree Species ID	DBH (cm)	Height Class[1]	Cavity[2]?	Loose Bark?	Cracks?	Knot Holes?	Snag within 10 m?	Decay Class[3]	Comments
1	23	Manitoba Maple	74	1	4 m	Yes	No	No	No	2	Multi-stems, additional DBHs: 74, 22, 20
2	N/A	Silver Maple	64	1	10 m	No	No	No	No	1	Multi-stems, additional DBHs: 64, 43, 73, 60, 50. Not in TPP, in the wetland buffer area.
3	163	Trembling Aspen	31	1	8 m	No	No	No	No	2	
4	83	Crack Willow	50	1	N/A	No	No	Yes	No	1	
5	47	Silver Maple	64	1	8 m	No	No	No	No	1	Multi-stems, additional DBHs: 63, 45, 43, and 36.

[1] Height Class: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)
[2] The approx. height of the cavity should be noted.
[3] Decay Class: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact, 4 = 50% of branches/bark lost, 5 = most branches/bark lost, some internal decay, 6 = no branches of bark left, sapwood sloughing from upper bole

3.4.3 Woodpecker Cavity Identification Surveys

Investigations were completed to identify Pileated Woodpecker cavities and Red-headed Woodpecker trees. No suitable Red-headed Woodpecker trees or habitat was identified. Two tree that exhibited cavities were identified in the subject lands. The identified trees were Silver Maples, with a DBH greater than 10 cm. Due to the surveys targeting multiple types of cavities, a summary of key differences among cavity types has been provided in *Table 6.*

Table 6. Summary of Key Differences Among Cavity Types

Characteristics	Nesting	Roosting	Feeding
Number of holes	1	>1	>1
Edge Texture	Smooth	Smooth	Rough
Hole Shape	Round or tear drop	Oval	Irregular
Hole Size (cm)	~12 high ~9 wide	7-5-10 wide 10-12.5 high	Variable
Average cavity depth (m)	0.75	4.3	0.05 to 0.2
Tree Type	Solid, with heart rot	Hollow	Dead and decaying

The results of the cavity identification surveys can be found in *Table 7*, with the location of the tree shown on *Figure 3*. The survey identified this tree as a woodpecker foraging tree. Based on the current work planned, one tree will be removed, and the other is by the wetland buffer and will not be removed. Woodpecker foraging trees are not protected and no compensation or monitoring is required. A photograph showing the foraging holes is provided in *Appendix 11*.

An investigation for Eastern Screech-Owl nesting cavities did not identify any candidate trees within the property limits. A tree with a candidate cavity was observed in the Deciduous Swamp community outside of the property limits, and therefore, well outside the limits of the development.

Table 7. Results of the Pileated Woodpecker Cavity Investigation Survey

Tree #	TPP Tree #	Tree Species ID	DBH (cm)	# of Holes	Cavity Edge Texture	Hole Shape	Hole Size (cm)	Cavity Depth (cm)	Hole Appearance	Tree Type	Suspected Woodpecker sp.	Woodpecker Breeding Evidence?
1	21	Silver Maple	73, 45, 22	>1	Rough	Irregular	Small	5-20	Light from the outside	Otherwise healthy	Unknown	No-feeding/foraging
2	N/A	Silver Maple	154	>1	Rough	Oval, irregular	Small-medium	5-20	Light from the outside	Solid with heart rot	Unknown	No-feeding/foraging

3.5 Significant Wildlife Habitat

With guidance from the *Significant Wildlife Habitat Technical Guide* (2000) and the SWH EcoRegion Criterion Schedule 6E (2015), we have assumed that Significant Wildlife Habitat in the form of Habitat for Special Concern and Rare Species is present within the study area. A Monarch was identified in the forb meadow community during the ELC survey and Common Milkweed (*Ascelpias syriaca*) was present. Since studies were not completed to determine if larval monarch were present, this ELC community has been assumed significant Habitat for Special Concern and Rare Species (*Figure 3*). Given that an abundance of similar habitat is present within the study area and lands outside the study area, Monarch is unlikely to be affected by the proposed development

3.6 SAR Habitat Assessment

An assessment of all Species at Risk that have the potential to occur in the study area based on lists provided by several wildlife atlases, correspondence with MECP, and MNRF Species Occurrence Mapping was completed and is provided in *Appendix 7*. Species assessed include all species with Provincial ESA status of Threatened or Endangered. Habitat for Special Concern and Provincially Rare species is not protected under the ESA, but is protected under Significant Wildlife Habitat. This is also true for Federal SARA species with a status of Threatened or Endangered which are not also protected under the ESA, unless they are found on federal lands, or are fish or migratory birds. See *Appendix 7* for a detailed assessment of Species at Risk habitat.

Candidate habitat for Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, and Rusty-patched Bumble Bee was identified within the meadow community within the subject lands. Rusty-patched Bumble Bee was not identified during the background review, but has been identified in Wellington County previously, while Gypsy Cuckoo Bumblebee and Nine-spotted Lady Beetle were identified as potentially present by the MECP. It should be noted that Rusty-patched Bumble Bee and Gypsy Cuckoo Bumble Bee have not been identified in Wellington County for over 20 years, and were last identified in Ontario in Pinery Provincial Park in 2009 and 2008 respectively (Colla, 2007; Environment and Climate Change Canada, 2020). Nine-spotted Lady Beetle has not been observed in Ontario since 1987 (Linton and McCorquodale, 2018). All of these species are habitat generalists, and were not identified during site visits. Given that an abundance of similar habitat is present within the study area and lands outside the study area, these species are unlikely to be affected by the proposed development.

Candidate habitat for Little Brown Myotis, Northern Myotis, and Tri-coloured Bat was identified in the deciduous swamp and woodland community. Surveys to identify candidate bat maternity trees prior to tree removal identified five low quality trees, four of which will be removed for the development, and three of which are landscape trees. None of these trees are within the swamp community, and one is within the woodland community. Given the small number of trees to be removed, the fact that they are mostly not in the appropriate ecosite, their low quality, and the number of suitable trees remaining in the swamp community, there will be no impact to bat habitat by the removal of these trees outside of the maternity season.

3.7 Geology and Soils

Per the Soil Map and Survey of Wellington County (Hoffman et al., 1963), the study area is comprised of three different soil types. Harriston Loam, Parkhill Loam, and Listowel Loam. The Harriston Loam is smooth, gently sloping, and stonefree. Harriston soils have a moderately to gently rolling topography and are well drained (Hoffman et al., 1963). The parent material is a glacial till that has been derived from the soft limestones that form the underlying rock strata (Hoffman et al., 1963). The Parkhill Loam is smooth, level, and slightly stoney. Compared to upland soils, Parkhill soils have a much darker and thicker surface soil that are produced through a mixture of organic material from decaying matter and mineral soils (Hoffman et al., 1963). The Listowel Loam is smooth, very gently sloping, and stonefree. Listowel soils are imperfectly drained, and occur on gently undulating upland areas where surface run-off is slow and internal drainage is moderate (Hoffman et al., 1963).

4.0 Impact Analysis, Mitigation and Restoration

4.1 Impact Assessment and Mitigation

The proposed development will result in impacts to the existing natural features. A detailed assessment of the impacts (potential and actual) and mitigation measures are provided in *Appendix 10*. The expected impacts include loss of vegetation and wildlife habitat, disturbance of wildlife species and impacts to nesting birds and bat maternity habitat, increased erosion, sedimentation, nutrient inputs, and contaminants into the wetland, decreased shade and cover, changes to drainage and surface runoff, increased soil compaction, noise and light pollution from pets and resident, and predation of wildlife from pets.

Mitigation methods include:

- the development and implementation of an Erosion and Sediment Control (ESC) plan, including ESC fencing to isolate the site and prevent the entrance of wildlife,
- removal of vegetation outside of sensitive timing windows (April 1-August 31 for breeding birds),
- where avoidance is not possible, nest searches prior to vegetation removal in the breeding bird nesting window,
- tree removals outside of the bird nesting and bat maternity windows (April 1-September 30),
- maintaining site vegetation or restoring with native species as soon as possible, including the use of compensation planting,
- maintaining or providing vegetative buffers,
- controlling access and movement of equipment and people,
- scheduling grading to avoid high run-off events,
- minimizing changes to land contours and natural drainage,
- controlling water contamination through good housekeeping practices such as designated areas for parking and refuelling vehicles, and
- providing homeowners manual to promote stewardship.
- Providing fencing and/or vegetated buffers to reduce intrusion by occupants into the retained wetland feature.

4.2 Buffers

4.2.1 Wetlands

A variable 10 m buffer from the verified wetland limit has been applied (*Figure 3*). Per the GRCA's *Policies for the Administration of the Prohibited Activities, Exemptions and Permits, Ontario Regulation 41/24* Section 8.4.9, development is permitted within an area of interference less than or equal to 30 m provided there are no negative or adverse hydrological or ecological impacts on the wetland and that all development is located outside of the wetland and maintains as much setback as feasible.

To avoid negative impacts to the wetland, it is recommended that a planting plan detailing restoration and enhancement within the buffer is provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing soil and moisture condition. This plan should include thorny native species, such as raspberry, to reduce and impede encroachment into the wetland. Implementation of an appropriate planting plan will reduce potential impacts caused by increased run-off from the proposed development and public encroachment into the wetland feature.

4.3 Geotechnical Investigation

A detailed geotechnical investigation was produced by JLP Services Inc. (JLP; JLP, 2023) to assess the subsurface soil and groundwater conditions at the site. Five boreholes were drilled, identifying fill, topsoil, silt, sand, and sandy silt till present in the property limits. The investigation identified the likely need for grading, and that the site grades may be achieved by cut and fill operations. Due to the permeability of the soils on site, it was recommended that a low permeability liner be used for the SWM pond in order to maintain a permanent wet pond. Saturated conditions were identified at all boreholes, which led to the conclusion that dewatering may be required within the expected zone of excavation.

4.4 Hydrogeological Report

A detailed hydrogeological study was produced by GEI Consultants Canada Ltd (GEI; GEI, 2024a). The site is generally flat with a gentle slope down to the wetland in the northern portion of the site, and with a moderate to steep slope in the southern portion of the site. A culvert and ditch currently receive runoff from lands to the east and conduct it across the lower half of the site towards the southern boundary. Surface drainage from the site is southerly towards the Grand River, while the wetland area drains in a westerly direction via culverts and streams towards a larger wetland.

Surface drainage was generally overland towards the wetland area, and a municipal storm sewer also discharges to the eastern part of the subject lands, the discharge of which also flows overland towards the wetland. There was no seepage identified on site, but water levels in the drain on site may be closely related to groundwater levels,

and it appears that the groundwater surface intersects ground surface in the drain during periods of high groundwater (e.g. spring freshet).

This report considered the above geotechnical investigation with regards to the need for dewatering at the site. The elevations of basements and building foundations are proposed to lie above seasonal groundwater levels, but some amount of dewatering may be required during construction. Dewatering is expected to be greatest at the location of the tie-in to the existing sanitary sewer on Sideroad 19, as the groundwater is highest and the proposed depth of excavation will be greatest at this location. Dewatering will also occur in the stormwater management facility forebay due to the depth of excavations. Based on the results of groundwater samples, it is expected that the quality of the groundwater collected from the dewatering will be suitable for discharge to the environment provided that appropriate ESC are provided. The report states that due to the proximity of the wetland feature, the discharge water should be tested daily for turbidity, and the water in the wetland should be tested for background turbidity. Construction dewatering is not expected to impact the wetland area, as the most intensive dewatering will occur at the north end of the site. In addition, the dewatering activity will be temporary, and any effects on water level change would subside shortly after the conclusion of dewatering.

Hydrological impacts to the wetland associated with stormwater management can be minimised through ensuring the water balance does not significantly alter the quantity of groundwater recharge. A water balance assessment for this site has been completed and is discussed in section 4.2.4.

Changes to rate of flow due to the development to the wetland must also be considered, as excessive flow may result in flooding of downgradient wetlands. The SWM pond has been designed to mitigate peak flow to ensure that excessive flooding will not occur in the wetlands.

The potential for erosion to affect the wetlands due to high water discharge and high flow velocities leading to sediment entrainment will be limited through the use of ESC. In addition, the construction dewatering is not expected to produce high quantities of water. The SWM pond design to mitigate peak flow will also reduce the potential for excessive erosion. ESC measures will also ensure that the water quality associated with dewatering discharge will not cause impacts to the wetland.

A salt management plan will be developed and implemented, to minimise the impacts of salt on water quality. Snow storage areas have been identified in the site plan (*Figure*

1), and all run-off from these areas will be directed to the SWM facility via grading between the access road and top of bank to the wetland.

The use of the mitigation methods detailed in this report will result in minor to none impacts to the wetland.

4.5 Functional Servicing and Stormwater Management Report

A detailed functional servicing and stormwater management report was produced by GEI (GEI, 2024b). The current dwellings on the properties have septic systems and wells, which will be removed. The proposed development will be serviced by municipal water and sanitary systems.

There is currently no storm servicing beyond on-site runoff travelling via sheetflow largely towards the wetland, with the runoff from the front yard and driveway sheetflows towards Sideroad 19. The proposed storm servicing includes new storm sewer and catch basins to convey run off to the proposed SWM facility, lot swales to convey runoff to the storm sewer or directly the wetland, storm service laterals for sump pump discharge, and waterproof wrapping applied to all proposed sewer joints where the pipe invert is greater than 0.3 m below the seasonal groundwater level.

The stormwater management approach is designed to follow a “treatment train” including lot level, conveyance, and end-of-pipe stormwater management practices to filter and control runoff prior to discharging to the wetland (*Figure 1*). Lot levels controls include roof drainage to ground surface and rear yard swales, conveyance controls include the road storm sewer network and grassed swales, and end-of-pipe controls include the SWM facility and sediment loading and cleanout frequency schedule.

A water balance study completed as part of this report found under the existing conditions the site is approximately 20% impervious. The existing annual average runoff volume towards the wetland is 2,278 m^3, the existing annual average runoff volume towards Sideroad 19 is 261 m^3, and the existing annual recharge volume for the site is 2,787 m^3. Under post-development conditions the site is approximately 52% impervious. The increase in impervious area will result in increased runoff and decreased recharge, with the average annual recharge volume being 1,379 m^3, the average annual runoff volume towards the wetland being 4,798 m^3, and the average annual runoff volume towards Sideroad 19 being 426 m^3.

It will not be possible to mitigate for this change in recharge using low-impact development (LID) methods to enhance infiltration, due to the configuration of the site. As per the hydrogeological report, it is not expected that this change in recharge will

have a significant impact on groundwater levels or on overall recharge to municipal groundwater resources, due to separation of the surficial aquifer and the municipal source aquifer, leaving much of the recharge on-site in the surface aquifer where it flows to the wetland and out of the site. Therefore, the effect of the development on the site is not expected to have a significant impact on groundwater.

4.6 Clean Equipment Protocol for Industry

Due to the presence of natural communities immediately adjacent the subject property, it is recommended that the protocols presented within the Clean Equipment Protocol for Industry (Halloran et al., 2013) are followed to minimize the potential of any invasive species being brought onto the subject property and potentially into the existing natural features throughout the duration of any site works. Based on field investigations completed, the majority of the vascular plant species within the adjacent natural features are native to the area, therefore, the implementation of the Clean Equipment Protocol is important for maintaining the existing species composition and ratio of native to exotic species. In addition, the implementation of plantings consisting of native species in the form of trees, shrubs, grasses and forbs, where able, will help in preserving the existing conditions of the natural features.

5.0 Legislation and Policy Compliance

5.1 Provincial Policy Statement and Provincial Planning Statement

The development is partially within the area of interference of an unevaluated wetland and will require removal of trees. Where the proposed development is adjacent to the wetland, a variable buffer, equivalent to 10 m, has been applied. It is the opinion of AA that provided a restoration and planting plan, as well as the mitigation recommendations within Sections 4.2 & 7.0, are implemented between the proposed development and the wetland, the development will not negatively impact the wetland within the study area.

Assumed SWH has been identified in the study area. A tree preservation and replacement plan has been developed for the subject lands. Planting of trees, shrubs, and native plants such as milkweed will compensate for lost habitat.

Therefore, the proposed development complies with the Provincial Policy Statement and the Provincial Planning Statement.

5.2 Endangered Species Act (2007)

The provincial Endangered Species Act, 2007 (ESA) provides protection to species designated as Threatened or Endangered on the Species at Risk in Ontario list (MNRF, 2021). No SAR listed as such were identified in the study area. Candidate habitat for Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, and Rusty-patched Bumble Bee is present in the subject lands but, due to the generalist nature of these species, residential areas in the study area also provide habitat. Additionally, no individuals of these species have been identified in Wellington County for over 20 years. Five candidate bat trees were identified on site, four of which are proposed to be removed for the development. All four are low quality bat maternity habitat, and three of these are landscape trees. Therefore, there is limited potential bat habitat being removed and impacts are not expected provided timing windows are respected.

Monarch was also observed within the study area; however, it is listed as Special Concern and are not afforded habitat protection under the ESA (2007).

Thus, the proposed development is in compliance with the Endangered Species Act (2007).

5.3 GRCA Wetland Policies

The development is located within 30 m of the limit of the wetland within the study area. As noted in Section 4.3.1, a variable 10m buffer between the wetland limit and the proposed development has been applied. Due to the proximity of the development to the wetland, it is recommended that a planting and restoration plan be developed and implemented within the buffer area to minimize any negative impacts from the development and impacts of public use and encroachment.

It is the opinion of AA that the proposed development will not negatively impact the wetland provided a planting plan suitable to the existing soil and moisture conditions and the mitigation recommendations detailed in Sections 4.2 & 7.0 are implemented. Post-construction measures including public education signage to reduce public encroachment within the wetland. Therefore, the proposed development complies with the GRCA wetland policies.

5.4 Wellington County Official Plan (2022 Update)

The Wellington County Official Plan indicates that a portion of the study area is designated as Core Greenlands, in the form of the unevaluated wetland. As shown in *Figure 1*, the proposed development is located adjacent to the limit of the wetland; however, a 10 m variable buffer has been applied to help minimize negative impacts to the wetland.

It is recommended that a planting plan with native species suitable to the existing moisture and soil conditions be implemented within the buffer to aid in dissipation of runoff from the development, as well as limit resident encroachment into the feature. Provided a planting plan is implemented along with the mitigation recommendations detailed in Sections 4.2 & 7.0; it is the opinion of AA that the proposed development will not result in negative impacts to the wetland.

Additionally, candidate habitat of threatened or endangered species was determined to be present within the study area. Candidate habitat for Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, and Rusty-patched Bumble Bee is present in the subject lands but, due to the generalist nature of these species, residential areas in the study area also provide habitat. Additionally, no individuals of these species have been identified in Wellington County for over 20 years, decreasing the likelihood of occurrence within the study area. Five candidate bat maternity trees were identified on site, four of which are due to be removed for the development. All of these are considered low quality bat maternity habitat, and three of these are landscape trees. Therefore, there is limited potential bat habitat being removed, provided timing windows are respected.

Therefore, the proposed development complies with the Wellington County Official Plan (2022 update).

5.5 Township of Centre Wellington Official Plan (2013 Consolidation)

The Township of Centre Wellington Official Plan mapping indicates the presence of Core Greenlands in the form of the unevaluated wetland. As noted in Section 5.4, the proposed development is located adjacent to the limit of the wetland; however, a 10 m buffer has been applied to help minimize negative impacts to the wetland.

It is recommended that a planting plan with native species suitable to the existing moisture and soil conditions be implemented within the buffer to aid in dissipation of runoff from the development, as well as limit resident encroachment into the feature. Provided a planting plan is implemented along with the mitigation recommendations detailed in Sections 4.2 & 7.0; it is the opinion of AA that the proposed development will not result in negative impacts to the wetland.

Additionally, candidate habitat of threatened or endangered species was determined to be present within the study area. Candidate habitat for Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, and Rusty-patched Bumble Bee is present in the subject lands but, due to the generalist nature of these species, residential areas in the study area also provide habitat. Additionally, no individuals of these species have been identified in Wellington County for over 20 years decreasing the likelihood of occurrence within the study area. Five candidate bat maternity trees were identified on site, four of which are due to be removed for the development. All of these are low quality bat maternity habitat, and three of these are landscape trees. Therefore, there is limited potential bat habitat being removed.

Thus, the proposed development complies with the Township of Centre Wellington Official Plan (2013 Consolidation).

5.6 Township of Centre Wellington Zoning By-law 2009-045

The subject property contains Environmental Protection and Environmental Protection Overlay in the form of an unevaluated wetland and the associated GRCA regulation limit. As noted in Section 4.3.1, a buffer between the wetland limit and the proposed development has been applied. Due to the proximity of the development to the wetland, it is recommended that a planting and restoration plan be developed and implemented within the buffer area to minimize any negative impacts from the development and impacts of public use and encroachment.

It is the opinion of AA that the proposed development will not negatively impact the wetland, provided a planting plan suitable to the existing soil and moisture conditions and the mitigation recommendations detailed in Sections 4.2 & 7.0 are implemented. Post-construction measures including education signage to reduce encroachment within the wetland. Therefore, the proposed development complies with the Township of Centre Wellington Zoning By-law.

6.0 Summary and Conclusion

It is the opinion of AA that by implementing the mitigation measures identified in Section 4.0, the proposed development will not result in any significant long-term negative impacts to the existing natural features identified, including the unevaluated wetland. The natural features within the study area will be protected and enhanced through mitigation measures. This will result in long-term positive effects on the natural heritage features within the study area. Below is a summary of the affected natural heritage features, constraints and impacts. Recommendations for associated mitigation and/or protection measures are also identified in Section 4.0.

6.1 Biological Studies and Site Constraints

1. Surveys were conducted for Ecological Land Classification and Vegetation Communities (ELC and Vascular Plant List), Bat Maternity Habitat, Woodpecker Nesting Cavities, and Significant Wildlife Habitat and Species at Risk Habitat.

2. Candidate SAR habitat was identified within the study area.
    a. Candidate Habitat for Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, and Rusty-patched Bumble Bee was identified in the Fresh-Moist Forb Meadow. However, no individuals were identified, and as they are all habitat generalists, other habitat exists for these species in the local area. Additionally, none of these species have been identified in Wellington County for over 20 years decreasing the likelihood of occurrence within the study area.
    b. Candidate habitat for SAR bats was identified in the Swamp (Freeman's) Maple Mineral Deciduous Swamp. However, very few, low quality potential bat trees were identified on site, none of which were in this community. This community will be protected by the wetland buffer.

3. Assumed Significant Wildlife Habitat in the form of Habitat for Rare & Special Concern Species was identified within the study area.
    a. Assumed adult feeding habitat for Monarch was identified in the Fresh-Moist Forb Meadow. One individual was identified and the presence of Common Milkweed was noted. Monarch utilises a number of habitats with Milkweed, and suitable habitat for this species likely occurs elsewhere in the local area.

4. The study area includes a small unevaluated wetland as identified by the GRCA, and a drainage swale.

6.2 Impact Assessment

1. Generalized impacts due to the proposed development were assessed to determine their extent, and mitigation guidelines have been provided (*Section 4.0*).

2. Potential impacts primarily involve vegetation removal, site grading, impacts to the wetland through erosion, sedimentation and contamination, and wildlife disturbance.

3. Geotechnical, hydrogeological, and functional servicing and stormwater management reports expect that the impact of the development to the groundwater and wetland in the subject lands to be minimal.

4. There are opportunities in the study area for restoration through the implementation of a restoration planting plan which would involve planting native tree and shrub species and spreading native seed mix through the wetland buffer and area of disturbance to enhance and restore the area between the wetland and the proposed development.

5. There are opportunities to limit encroachment into the existing natural features through the installation of educational signage, fencing and/or vegetated barriers to natural features within the buffer.

6.3 Legislation and Policy Compliance

1. The proposed development complies with the Provincial Policy Statement (2020) & Provincial Planning Statement (2024) as it will not result in any negative impacts to the assumed Significant Wildlife Habitat and unevaluated wetland, provided the recommended mitigation measures are implemented.

2. The proposed development can occur in accordance with the GRCA's *Policies for the Administration of the Prohibited Activities, Exemptions and Permits, Ontario Regulation 41/24* because it has been demonstrated that any impacts to the hydrologic or ecological functions can be minimized through the recommended mitigation measures and implementation of an appropriate planting plan. The mitigation measures and implementation of an appropriate planting plan will ensure restoration and enhancement of the variable buffer and disturbed areas.

3. The proposed development can occur in accordance with the ESA, as the candidate habitat for endangered species identified is either available in

abundance locally outside of the subject lands or is of very low quality.

4. The proposed development can occur in accordance with the Wellington County Official Plan and Township of Centre Wellington Official Plan as the findings of the EIS concluded that the proposed development will not negatively impact the existing features or their ecological and hydrologic functions provided the recommended mitigation measures and appropriate planting plan are implemented.

7.0 Avoidance, Mitigation and Compensation Recommendations

The following recommendations are provided to ensure protection and maintenance of the natural heritage features and functions adjacent to the proposed development. Through the implementation of the proposed mitigation, restoration, and compensation, no negative impacts to the natural heritage features are expected.

1. Prepare and implement an Erosion and Sediment Control Plan (ESC), per GGH Erosion and Sediment Guidelines, as part of detailed design, for protection of the wetland.

2. ESC measures to be kept in place until all works are completed, and disturbed soils have been vegetated;

3. The area of construction disturbance shall be kept to a minimum;

4. Control the access and movement of equipment and people;
    a. Implement appropriate protocols outlined in the Clean Equipment Protocol for Industry (Halloran et al., 2013);

5. Minimize the use of heavy equipment within close proximity to the wetland
    a. Equipment is to be limited to the construction allowance area and is not to encroach within the adjacent natural communities;

6. Works and equipment storage are to be located as far as possible from the existing natural features as possible;

7. Accumulated sediment and debris to be removed prior to the removal of the silt fence;

8. All disturbed areas should be re-vegetated or restored with site appropriate indigenous plants.
    a. Implementation of an appropriate planting plan within the buffer between the wetland and the development is recommended. Plantings should be monitored to ensure proper establishment.
    b. The planting plan should include species that are a deterrent to encroachment, such as raspberries.

9. Time activities to avoid wildlife disturbance during critical life stages;
    a. Avoid removal of trees and vegetation during the generalized breeding bird nesting period from April 1 to August 31 and

b. Avoid removal of trees during the bat maternity period from April 1 to September 30.
c. If removal of vegetation is to occur during the general nesting period, a nest search should be completed by a skilled and experienced Biologist.
d. In the event that site activities require removal of an identified Candidate Bat tree within the maternity window, it is recommended that detailed acoustic studies occur pre-construction.

10. Choose designs and materials that will minimize impacts.

11. Establish educational signage pertaining to encroachment within the wetland.

12. Provide homeowners manual to promote stewardship.

13. Direct exterior lighting away from natural feature edges.

Prepared by:

ABOUD & ASSOCIATES INC.

Heather Dixon, PhD
Aquatic Ecologist

Reviewed By:

Cheryl-Anne Ross, B.Sc. F.W.T.
Ecology Lead & Wildlife Ecologist

8.0 References

Cadman, M.D.,D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. The Atlas of the Breeding Birds Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto,xxii + 706pp.

Colin Jones, Ross Layberry, and Alan Macnaughton. Ontario Butterfly Atlas Online. 2015. Toronto Entomologists' Association: 2021. Available at: http://www.ontarioinsects.org/atlas_online.htm

Colla, Sheila R. 2017. Recovery Strategy for the Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. v + 23 pp.

County of Wellington. 2022. Wellington County Official Plan. May 6, 1999 (Last Revision June 1, 2022).

Dobbyn, John. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, viii + 120pp.

Dougan & Associates, with Sneil & Cecile Environmental Research. 2009. List of Significant Wildlife in Wellington County; In City of Guelph Natural Heritage Strategy - Phase 2: Terrestrial Inventory & Natural Heritage System (VOL. 2 – APPENDICES). Final Report March 2009.

Endangered Species Act, 2007, S.O. 2007, c. 6

Environment and Climate Change Canada (ECCC). 2020. Recovery Strategy for the Rusty-patched Bumble Bee (*Bombus affinis*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. ix + 57 pp.

Environment and Climate Change Canada (ECCC). 2023. Pileated Woodpecker Cavity Identification Guide. Accessed November 23, 2023 at: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/pileated-woodpecker-cavity-identification-guide.html

Fisheries Act, 1985. R.S.C., 1985, c. F-14

GEI Consultants Canada Ltd. (GEI). 2024a. Functional Servicing and Stormwater Management Report: 79 Sideroad 19, Township of Centre Wellington (Fergus). Dated August 2024

GEI Consultants Canada Ltd. (GEI). 2024b. Functional Servicing and Stormwater Management Report: 79 Sideroad 19, Township of Centre Wellington (Fergus). Dated August 2024

Government of Ontario. 2019. A Place to Grow: Growth Plan for the Greater Golden Horseshoe. May 16, 2019 (Office Consolidation August 2020).

GRCA. 2021. Grand River Conservation Authority. *Grand River Information Network*. Available at: http://www.grandriver.ca/index/document.cfm?sec=63&sub1=0&sub2=0

Halloran Joe, Anderson, Hayley and Tassie, Danielle.2013. Clean Equipment Protocol for Industry. Peterborough Stewardship Council and Ontario Invasive Plant Council. Peterborough, ON

Jackson, J. A. 1976. A Comparison of Some Aspects of the Breeding Ecology of Red-Headed and Red-Bellied Woodpeckers in Kansas. The Condor, 78(1), 67-76.

JLP Services Inc. 2023. Geotechnical Investigation Proposed Residential Development 79-87 Side Road 19 Township of Centre Wellington (Fergus), Ontario.

Lee, H.T., W.D. Bakowsky, J.L. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurry. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section. Science Development and Transfer Branch. SCSS Field Guide FG-02

Lee H.T. 2008. Southern Ontario Ecological Land Classification – Vegetation Type List Ontario Ministry of Natural Resources.

Linton, J and D. McCorquodale. 2018. Recovery Strategy for the Nine-spotted Lady Beetle (*Coccinella novemnotata*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vi + 33 pp.

MECP. 2022. Treed Habitats – Maternity Roost Surveys. 3 pp.

MNRF. 2000. Ontario Ministry of Natural Resources. *Significant Wildlife Habitat Technical Guide.* October 2000.

MNRF. 2015. Significant Wildlife Habitat Ecoregion 6E Criteria Guide. Ministry of Natural Resources and Forestry. Regional Operations Division, Peterborough Ontario, January, 2015.

MNRF. 2021. Ontario Ministry of Natural Resources. Ontario Species at Risk website. Available at: http://www.mnr.gov.on.ca/en/Business/Species/index.html

Mortarello, S., Mike Barry, M., Gann G., Zahina, J., Channon, S., Hilsenbeck, C., Scofield, D., Wilder, G., and Wilhelm, G. 2012. Coefficients of Conservatism Values and the Floristic Quality Index for the Vascular Plants of South Florida. Southeastern Naturalist. Volume 11(Monograph 3):1–62.

NHIC. 2021. Natural Heritage Information Centre. *NHIC online database and mapping.* Ontario Ministry of Natural Resources. Available at: https://www.ontario.ca/environment-and-energy/natural-heritage-information-centre

OMMHA. 2020. Ontario Ministry of Municipal Affairs and Housing. *Ontario Provincial Policy Statement.* May 1, 2020.

Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. Available at: http://www.ontarionature.org/atlas

Ontario Partners in Flight. 2008. *Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain, North American Bird Conservation Region 13.* Ontario Ministry of Natural Resources, Bird Studies Canada, Environment Canada. Draft Version 2.0

OWES. 2013. Ontario Ministry of Natural Resources. *Ontario Wetland Evaluation System: Southern Manual.* 3rd Edition.

SARA. 2021. Federal Species at Risk Registry. Government of Canada. Available at: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html

Township of Centre Wellington. 2005. Township of Centre Wellington Official Plan. May 31, 2005 (January 2013 Consolidation)

Township of Centre Wellington. 2013. Township of Centre Wellington Comprehensive Zoning By-law 2009-045. February 2018 Consolidation.

VASCAN. 2015. Database of Vascular Plants of Canada (VASCAN). Université de Montréal Biodiversity Centre. Version 36. Published September 24, 2015.

Agency Correspondence

Kissner, Brett. Resource Planner. Grand River Conservation Authority. Email correspondence.

McShane, Lisa. Management Biologist. Ministry of Environment, Conservation & Parks. Email correspondence.

Salmon, Brett. Managing Director of Planning and Development. Township of Centre Wellington. Email correspondence.

Warner, Laura. Resource Planner. Grand River Conservation Authority. Email correspondence.

FIGURES

LEGEND

- PROPERTY LIMITS
- SANITARY SEWER
- STORM SEWER
- PAVED AREAS
- GRADING
- SWM FACILITY
- AMENITY AREA
- STORM SEWER EASMENT
- ROAD LIMITS AND SIDEWALKS
- SNOW STORAGE AREA
- WETLAND BUFFER
- VERIFIED WETLAND LIMIT
- PROPOSED BUILDINGS AND LOT LINES

Information Sources:

1. Orthophotography provided by First Base Solutions. Accessed October 2024.
2. Site plan provided by GSP Group. Accessed October 2024.

Title:

PROPOSED SITE PLAN

Project:

73 AND 79 SIDEROAD 19
TOWN OF FERGUS

Date: OCTOBER 2024

Project: AA22-163A

Scale: 1 : 750

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
3-5 Edinburgh Road South . Guelph . Ontario . N1H 5N8 . 519.822.6839 . www.aboudlng.com

Figure No: 1

ELC Code	ELC Community
CVR_3	Single Family Residential
MEFM4	Fresh-Moist Forb Meadow
SWDM3-3	Swamp (Freeman's) Maple Mineral Deciduous Swamp
TAGM5	Fencerow
WODM5	Fresh-Moist Deciduous Woodland

LEGEND

- PROPERTY LIMIT
- STUDY AREA
- WATERCOURSES
- PROVINCIALLY SIGNIFICANT WETLAND
- UNEVALUATED WETLAND
- ECOLOGICAL LAND CLASSIFICATION
- GRCA REGULATION LIMIT
- WETLAND BUFFER
- VERIFIED WETLAND LIMIT

Information Sources:
1. Orthophotography provided by First Base Solutions. Accessed October 2024.
2. Wetlands, watercourses, and regulation limits provided by GRCA. Accessed October 2024.

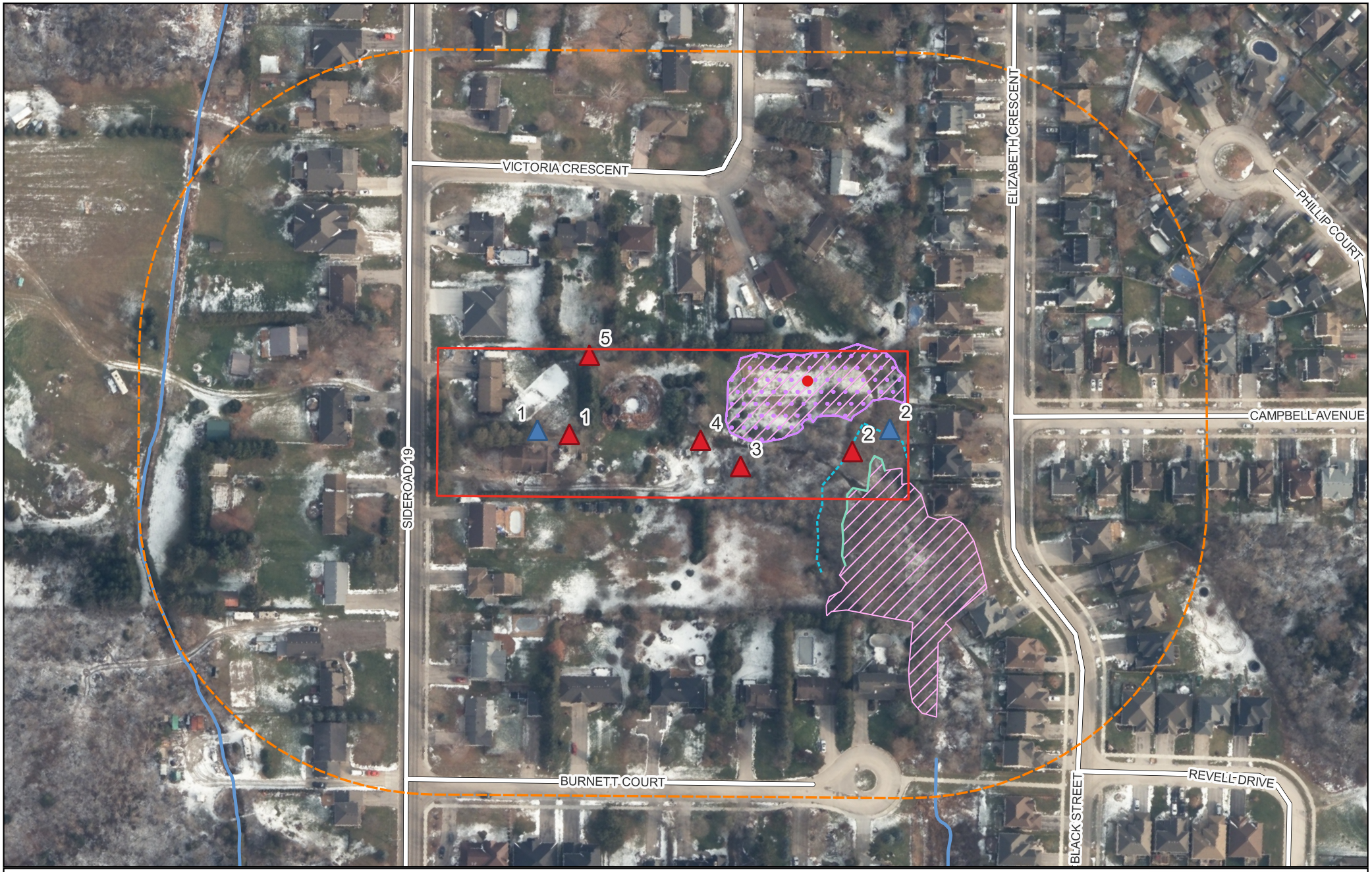
Title:
STUDY AREA AND ECOLOGICAL LAND CLASSIFICATION

Project:
73 AND 79 SIDEROAD 19
TOWN OF FERGUS

Date: OCTOBER 2024
Project: AA22-163A
Scale: 1 : 2000

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
3-5 Edinburgh Road South, Guelph, Ontario N1H 5N5, 519.822.6839, www.aboudng.com

Figure No: 2



LEGEND

- PROPERTY LIMITS
- STUDY AREA
- WATERCOURSES
- WETLAND BUFFER
- VERIFIED WETLAND LIMIT
- WOODPECKER TREES
- CANDIDATE BAT TREES
- MONARCH
- CANDIDATE SAR HABITAT
- ASSUMED SIGNIFICANT WILDLIFE HABITAT

Information Sources:
1. Orthophotography provided by First Base Solutions. Accessed October 2024.
2. Wetland limit from Van Harten Surveying Ltd. Accessed January 2023.

Title:
NATURAL HERITAGE FEATURES AND CONSTRAINTS

Project:
73 AND 79 SIDEROAD 19
TOWN OF FERGUS

Date: OCTOBER 2024
Project: AA22-163A
Scale: 1 : 2000

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
9-5 Edinburgh Road South, Guelph, Ontario N1H 5N5, 519.822.6839, www.aboudinc.com

Figure No: 3

APPENDIX 1
Applicable Policies and Conformity

Policy	Relevant Sections of the Policy	Policy Constraints Within the Study Area	Project Policy Conformity	Proposed Mitigation
Provincial Policy Statement (2020)	Section 2.0 Wise Use and Management of Resources, section 2.1 Natural Heritage including section 2.1.5 and 2.1.7 Section 3.0 of the PPS, Protecting Public Health and Safety including sections 3.1.2 c) and d), 3.1.4, 3.1.6, and 3.1.7.	Assumed Significant Wildlife Habitat (SWH) and candidate habitat of endangered species present in Study Area. Unevaluated wetland present in study area.	Assumed SWH will be removed in order to construct the development, but there is extensive candidate habitat for this species in the surrounding area.	A tree preservation plan will be provided, the wetland will be buffered, and the buffer will be revegetated with native plants. A planting plan detailing restoration and enhancement within the buffer should be provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing soil and moisture condition.
Provincial Planning Statement (2024)	Chapter 4, Section 4.1 Natural Heritage	Assumed Significant Wildlife Habitat (SWH) and candidate habitat of endangered species present in Study Area. Unevaluated wetland present in study area.	Assumed SWH will be removed in order to construct the development, but there is extensive candidate habitat for this species in the surrounding area.	A tree preservation plan will be provided, the wetland will be buffered, and the buffer will be revegetated with native plants. A planting plan detailing restoration and enhancement within the buffer should be provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing soil and moisture condition.

Policy	Relevant Sections of the Policy	Policy Constraints Within the Study Area	Project Policy Conformity	Proposed Mitigation
Endangered Species Act (2007)	Subsection 9(1) Clause 10(1)(a) Clause 16(5) Clause 17(1)	Candidate habitat for SAR are present in the Study Area.	Candidate bat snags were identified, but only four poor-quality trees will be removed. Candidate habitat for SAR insects is present, but these species have not been present in Wellington County for over 20 years.	A tree preservation plan will be provided.
Fisheries Act	Section 34.4 (1) Section 35 (1)	Fish and fish bearing waters are potentially present in the Study Area.	The watercourse in the study area/subject lands is a drainage swale, and is not suitable fish habitat. The drainage swale will be rerouted under the new development.	No mitigation is necessary.
Species at Risk Act	Subsection 32 (1) and (2) Subsection 33 Subsection 34(1) Subsection 58 (1)	Aquatic Species at Risk and their habitat are potentially present in the Study Area.	No Federal lands are present in the study area, and no aquatic SAR or migratory bird SAR have been identified. The drainage swale is not suitable fish habitat.	No mitigation is necessary.
Grand River Conservation Authority Policies for the Administration of the Prohibited Activities, Exemptions and Permits, Ontario Regulation 41/24	Section 7.1.2 Section 7.1.3 Section 8.4.1 Section 8.4.9 Section 8.4.13	Unevaluated wetland <0.5ha, and associated regulation limit present in the study area.	A variable 10 m buffer has been added to the wetland. Development is permitted within an area of interference less than or equal to 30 m provided there are no negative or adverse hydrological or ecological impacts on	A planting plan detailing restoration and enhancement within the buffer should be provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing

Policy	Relevant Sections of the Policy	Policy Constraints Within the Study Area	Project Policy Conformity	Proposed Mitigation
			the wetland and that all development is located outside of the wetland and maintains as much setback as feasible.	soil and moisture condition
Wellington County Official Plan	Section 5.4 Section 7.5.1	Core Greenlands in the form of an unevaluated wetland. Proposed development is a residential development within the Fergus Urban Centre.	A variable 10 m buffer has been added to the wetland to prevent interference with the wetland. Compatible services are available.	A planting plan detailing restoration and enhancement within the buffer should be provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing soil and moisture condition
Township of Centre Wellington Official Plan	Section C.3.2 Section C.5.5 Section D.2.5	Wetlands present on property. Development will add to residential intensification via the construction of townhouses.	A variable 10 m buffer has been added to the wetland to prevent interference with the wetland.	A planting plan detailing restoration and enhancement within the buffer should be provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing soil and moisture condition
Township of Centre Wellington Zoning By-law 2009-045	Section 4.12.1 Map 71	Subject property contains Environmental Protection and Environmental Protection Overlay due to presence of unevaluated wetland and associated	A variable 10 m buffer has been added to the wetland to prevent interference with the wetland.	A planting plan detailing restoration and enhancement within the buffer should be provided at detailed design, which utilizes native trees, shrubs and seed mix that is suitable for the existing

Policy	Relevant Sections of the Policy	Policy Constraints Within the Study Area	Project Policy Conformity	Proposed Mitigation
		GRCA regulation limit.		soil and moisture condition

APPENDIX 2
Terms of Reference and Approval

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects

3-5 Edinburgh Road South
Guelph . Ontario
N1H 5N8

T: 519.822.6839
F: 519.822.4052
info@aboudtng.com
www.aboudtng.com

November 28, 2022

Our Project No.: AA22-163A
Sent by Email: bkissner@grandriver.ca
B.Salmon@centrewellington.ca

Ben Kissner
Resource Planner
Grand River Conservation Authority
400 Clyde Road PO Box 729
Cambridge, Ontario N1R 5W6

&

Brett Salmon
Managing Director of Planning and Development
Township of Centre Wellington
1 MacDonald Square
Elora, ON N0B 1S0

Re: Part Lot 10 (79, 83 & 87 Sideroad 19)
Township of Centre Wellington (Fergus)
Terms of Reference - Scoped Environmental Impact Study

Dear Mr. Kissner & Mr. Salmon:

This document outlines the Terms of Reference (ToR) of the scoped Environmental Impact Study (EIS) for a proposed development at 79, 83 & 87 Sideroad 19 in the Township of Centre Wellington (Fergus), Wellington County. Please review the terms and circulate to Grand River Conservation Authority (GRCA), County and Township staff for discussion and approval.

BACKGROUND

The client requires an EIS prepared to the satisfaction of the Township of Centre Wellington, Wellington County, and the GRCA to proceed with a proposed development on the subject property.

The subject property includes lands within the GRCA Regulation Limit and is within the area of interference for a GRCA wetland.

The subject property is within the Urban Centre as designated by the County of Wellington Official Plan; no Greenland features are currently mapped.

The subject property is designated as Residential, per the Township of Centre Wellington Official Plan Schedule A-1.

The subject property includes lands designated as Natural Heritage System, per the Wellington County Draft Natural Heritage System mapping.

The subject property is zoned by the Township of Centre Wellington Zoning By-law 2009-045 as Residential R1A, with a portion being Environmental Protection and Environmental Protection Overlay.

In preparing the Terms of Reference, the following sources were reviewed for background information:

- Aerial photography of the subject site,
- Wellington County Official Plan (2021 revision) and Schedules,
- Township of Centre Wellington Zoning By-law 2009-045,
- Wellington County mapping (Wellington County Maps, accessed August 11, 2021)
- GRCA mapping (accessed August 11, 2021) of natural heritage features (e.g., regulation limit, GRCA and OMNR wetlands, ANSI's, and MNR Woodlands),
- Natural Heritage Information Center, Make-a-map, accessed August 11, 2021.
- Ontario Nature. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. 2019
- Ontario Breeding Bird Atlas. Bird Studies Canada, 2007.
- Atlas of the Mammals of Ontario. Dobbyn, 1994.
- iNaturalist. Accessed August 24, 2021
- eBird. Cornell Lab of Ornithology. Accessed August 24, 2021.
- Ontario Butterfly Atlas. Toronto Entomologists' Association. Accessed August 24, 2021.

STUDY AREA

The study area is the subject property and up to 120m beyond the subject property, where access is permitted (*Figure 1*).

As needed, the lands adjacent to the proposed severance may require further access to assist with understanding the characteristics and functions of natural heritage features. Where access is restricted, information will be acquired through existing background information and what can be observed from the edge of the accessible lands.

Lands outside of the field study area, or where access is not provided, will be reviewed from existing background information (e.g., Wellington County Official Plan).

PLANNING CONTEXT

Wellington County Official Plan (2021 Revision)

The County of Wellington Official Plan indicates that the proposed development is within the Fergus Urban Centre. Section 7.5.1 states that:

"Residential uses of various types and densities, commercial, industrial and institutional uses as a well as parks and open spaces uses will be permitted where compatible and where services available."

Grand River Conservation Authority

The subject property contains a portion of an unevaluated GRCA wetland and is within the allowances of these features. Section 8.4 of the GRCA's *Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation* (Ontario Regulation 150/06, 2013) identifies the area of interference of a smaller, non-provincially significant wetland as being 30 metres.

Section 8.4.9 states:

"Development within an area of interference less than or equal to 30 metres (100 feet) from a wetland may be permitted in accordance with the policies in Sections 7.1.2-7.1.3-General Policies, and where an Environmental Impact Study demonstrates:

a) *There are no negative or adverse hydrological or ecological impacts on the wetland,*
b) *All development is located outside of the wetland and maintains as much setback as feasible,*
c) *Development is located above the water table, except as specified in Section 8.4.11, and*
d) *Septic systems are located a minimum of 15 metres (50 feet) from the wetland and 0.9 metres (3 feet) above the annual maximum water table."*

Township of Centre Wellington Zoning By-law 2009-045 (2018 Consolidation)

Map 71 of the Zoning By-law 2009-045 indicates that the subject property contains Environmental Protection and Environmental Protection Overlay.

Section 4.12.1 states:

"No building, structure, or private sewage treatment system shall be constructed closer than 30.0m (98.4 ft) from the limit of an EP zone without the prior written approval of the Grand River Conservation Authority."

BACKGROUND REVIEW

Additional background natural heritage information related to the subject lands and adjacent lands identified the following information:

1. The Ontario Reptile and Amphibian Atlas shows within the 10 km squares containing the subject lands, the recent and historical presence of 18 species (including complexes) of reptiles and amphibians (accessed August 11, 2021). Including three species of Conservation Concern (Blanding's Turtle, Midland Painted Turtle and Snapping Turtle).

2. The Natural Heritage Information Center indicates the presence of four species of Conservation Concern within 1km of the project location (Midland Painted Turtle, Eastern Meadowlark, Bobolink and Snapping Turtle).

3. The Ontario Breeding Bird Atlas shows within the 10 km squares containing the subject lands, the recent presence of 101 species of bird. Including eight species of Conservation Concern (Eastern Wood-Pewee, Barn Swallow, Bank Swallow, Wood Thrush, Red-headed Woodpecker, Chimney Swift, Bobolink and Eastern Meadowlark).

4. The Ontario Mammal Atlas indicates that one species of Conservation Concern (Little Brown Myotis) has been observed in the 10km squares containing the subject lands.

5. eBird records from the nearby Fergus-Nexans Ponds (~1.25 km from the subject property) indicates the recent and historical presence of 61 species, including four species of Conservation Concern (Chimney Swift, Wood Thrush, Barn Swallow and Eastern Meadowlark).

6. iNaturalist observations within 1km of the subject property indicate the recent presence of one vascular plant, and three insects. None of the species observed are considered species of Conservation Concern.

7. The Ontario Butterfly Atlas shows within the 10 km squares containing the subject lands, the recent and historical presence of 14 species of butterflies, including one species of Conservation Concern (Monarch).

8. The reply to the Ministry of the Environment, Conservation and Parks (MECP) Information Request indicates the historical presence of six additional species of Conservation Concern (Silver Shiner, Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, Bald Eagle, Yellow-banded Bumble Bee and Short-eared Owl).

This information indicates that there is a potential presence of additional natural heritage features and constraints that may require investigation and/or comment.

PROPOSED TERMS OF REFERENCE

To fulfill the requirements of this study, we will:

1. Review background information, (e.g., proposed activity, relevant sections of natural heritage system components of the Wellington County OP, investigation of wildlife atlases and NHIC).
2. Complete a MECP Information Request, to determine the potential presence of SAR or other significant natural features in the study area.
3. Should the wetland meet the criteria for complexing per the OWES criteria, the MNRF will be contacted to determine if it should be complexed with the Irvine Creek Provincially Significant Wetland Complex.
4. Conduct two site visits to characterize vegetation communities using the ELC system (MNRF) and complete a two-season (late summer & fall) botanical inventory of the Study Area. (*complete*)
5. Wetland Limits: Pre-stake the boundary of the wetlands within the Study Area, where access is permitted, and coordinate with the GRCA to field-verify the actual boundary of the wetland. (*complete)*
6. Investigate the study area for the presence of Significant Wildlife Habitat.
7. Investigate the study area for presence of Species at Risk and Species at Risk habitat.
8. Record observations of all incidental wildlife during site visits.
9. Analyze findings and prepare a map that shows:

a. Identified natural heritage features, and functions and landscape level features (e.g., linkages, wetlands).
b. The proposed site plan (locations of buildings, septic tank/field, amenity, drive).
c. ELC vegetation communities.
d. Wetland boundary & Woodland dripline delineation.
e. Other noteworthy features as needed.
f. Locations of other natural heritage features from background literature searches (e.g., mammal atlas, herpetofaunal atlas, Wellington County OP, Township Zoning Bylaw).

10. Conduct an impact assessment by reviewing the proposed development's direct, indirect, and induced (i.e., residual, ongoing) impacts on the natural features. Provide an opinion about the location of the components of the general concept plan to reduce/avoid impacts to natural heritage features. Show the configuration of the proposed development and assess for minimizing impacts to ecological features and functions. This will involve discussions with the proponent and AA.
11. Provide policy rationale for expected impacts to natural heritage features e.g., removal of trees and grading to accommodate the site plan.
12. Edge Management Guidelines and Compensation: Provide general recommendations of where and why naturalization treatments may be needed to protect vegetation features (e.g., woodlands, wetlands) adjacent to the development activity. Provide rationale and recommendations for tree compensation (e.g., where, why and how much).
13. Prepare a report of the EIS that includes background information, methods, existing conditions, proposed development, impact assessment and mitigation measures, and appendices of field studies (e.g., flora and ELC data sheets).

Kind Regards,

ABOUD & ASSOCIATES INC.

Shannon Davison B. Env., Eco. Rest. Cert.
Ecologist
MNRF Certified Ecological Land Classification
MNRF Certified Wetland Evaluation
CERPIT #0499

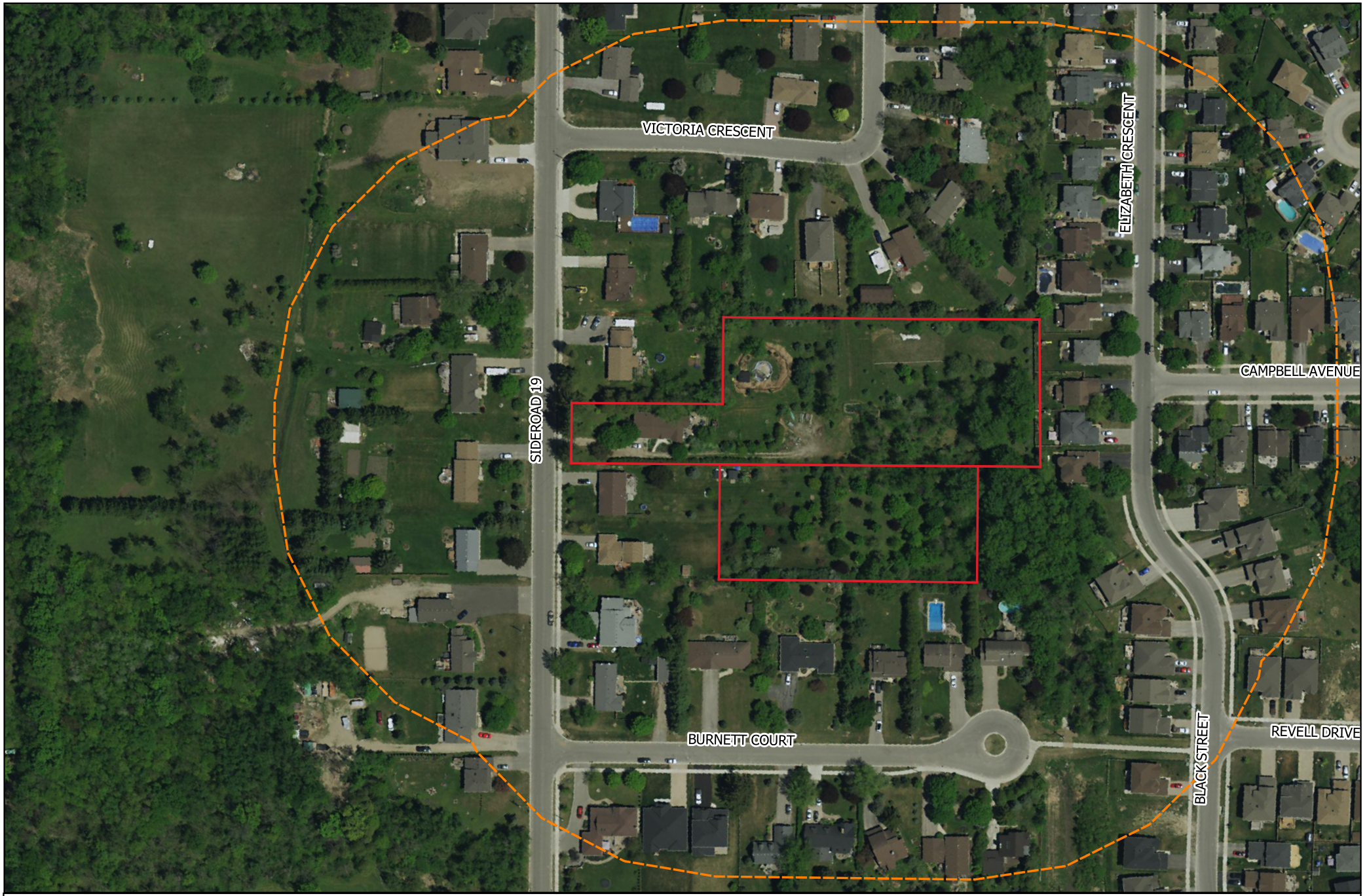
&

Jenny Andrews

Jenny Andrews B.Sc., M. L. Arch
Terrestrial Ecologist

Cc: Zachary Prince, Wellington County (email)
Steven Wright, Proponent

S:\A+A Projects\2020\Approved\20-100B Part Lot 10 (Sideroad 19) Fergus EIS\Approvals, Comments\AA20-100B Part Lot 10 (79, 83 & 87 Sideroad 19) EIS Terms of Reference.docx



LEGEND

STUDY AREA

SUBJECT LANDS

Information Sources:

1. Orthophotography provided by First Base Solutions Accessed August, 2021
2. Wetlands and Regulation Limit provided by GRCA Accessed August, 2021
2. Wetland Limit confirmed by AA and GRCA on September 27, 2021

Title:

NATURAL HERITAGE FEATURES

Project:

PART LOT 10, SIDEROAD 19
TOWN OF FERGUS

Date: NOVEMBER 2022

Project: AA22-163A

Scale: 1 : 2000

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
3-5 Edinburgh Road South . Guelph . Ontario . N1H 8N8 . 519.822.6839 . www.aboudng.com

Figure No: 1

Administration Centre: 400 Clyde Road, P.O. Box 729 Cambridge, ON N1R 5W6

Phone: 519-621-2761 Toll free: 1-866-900-4722 Fax: 519-621-4844 www.grandriver.ca

June 5, 2024 via email

Heather Dixon
Aquatic Ecologist
Aboud & Associates Inc.
3-5 Edinburgh Road South
Guelph, ON, N1H 5N8

Dear Heather Dixon,

Re: Terms of Reference - Scoped Environmental Impact Study
Part Lot 10 (79, 83, 87 Sideroad 19), Fergus, Centre Wellington, Wellington County

Grand River Conservation Authority (GRCA) staff has reviewed the Part Lot 10 (79, 83, 87 Side Road 19) Township of Centre Wellington (Fergus) Terms of Reference - Scoped Environmental Impact Study (Prepared by Aboud & Associates, dated November 28, 2022).

Information currently available at our office indicates the subject site contains an unevaluated wetland and the associated regulated allowance. A copy of our resource mapping is attached.

Comments on the EIS Terms of Reference:

1. The Terms of Reference should be amended to screen the proposed development activities for compliance with Ontario Regulation 41/24 (Prohibited Activities, Exceptions and Permits Regulation) which came into effect on April 1, 2024, and the Grand River Conservation Authority Policies for the Administration of the Prohibited Activities, Exceptions and Permits Regulation which came into effect May 24, 2024.
2. The Terms of Reference should identify what other technical studies and reports the EIS will use to identify and interpret the proposed development direct, indirect, and induced impacts on the regulated wetland. Technical studies including but not limited to grading plans, hydrogeological report, SWM report and wetland water balance should be used.

Should you have any questions, please contact me at jconroy@grandriver.ca or 519-621-2763 extension 2230.

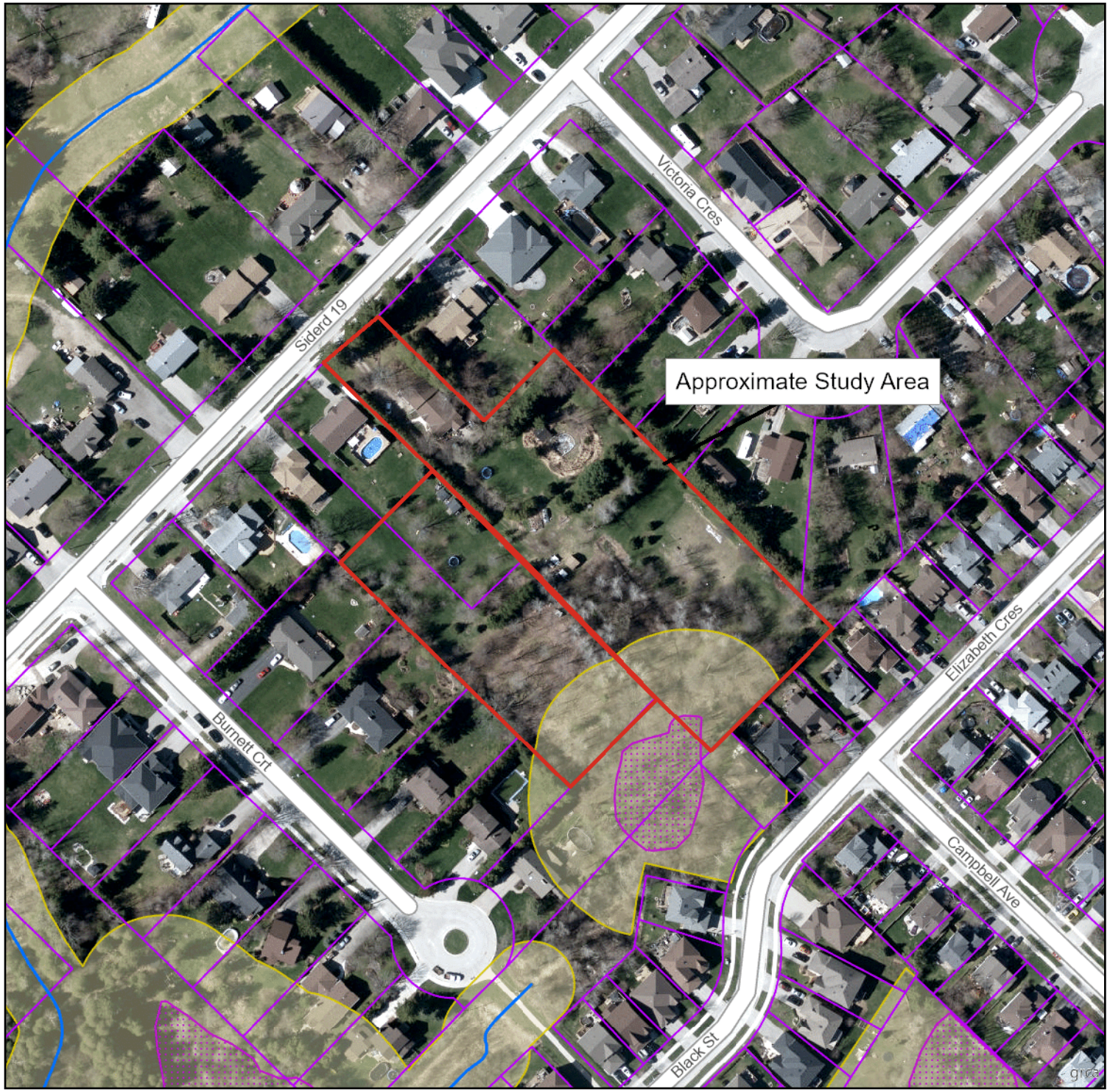
Sincerely,

Jessica Conroy

Jessica Conroy, MES Pl.
Resource Planner
Grand River Conservation Authority

Enclosed: GRCA Map

Copy (via email): Brett Salmon, Township of Centre Wellington
Cheryl-Anne Ross, Aboud & Associates Inc.



Map Centre (X,Y): 548748.11, 4839924.63 | Map Link

This map is not to be used for navigation | 2020 Ortho (ON)

Grand River Conservation Authority

Date: May 23, 2024
Author: JC

79, 83 & 87 Sideroad 19, Centre Wellington

Legend

- Regulation Limit (GRCA)
- Floodplain (GRCA)
  - Engineered
  - Estimated
  - Approximate
- Floodplain - Special Policy Area (GRCA)
- Slope Erosion (GRCA)
  - Steep
  - Oversteep
  - Toe
- Slope Valley (GRCA)
  - Steep
  - Oversteep
- Regulated Watercourse (GRCA)
- Regulated Waterbody (GRCA)
- Wetland (GRCA)
- Lake Erie Flood (GRCA)
- Lake Erie Shoreline Reach (GRCA)
- Lake Erie Dynamic Beach (GRCA)
- Lake Erie Erosion (GRCA)
- Parcel (Wellington)
- Conservation Area Boundary (GRCA)

Scale 1:1,941

NAD83 UTM zone 17 (EPSG:26917)

Heather Dixon

From: Jessica Conroy <jconroy@grandriver.ca>
Sent: Wednesday, June 5, 2024 12:10 PM
To: Heather Dixon; B.Salmon@centrewellington.ca
Cc: Cheryl-Anne Ross
Subject: GRCA Comments - EIS Terms of Reference for Part Lot 10 (79, 83, 87 Sideroad 19), Centre Wellington
Attachments: GRCA Comments - EIS ToR - Part Lot 10 (79, 83 & 87 Sideroad 19), Fergus.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon,

Please find attached GRCA comments on the EIS Terms of Reference for Part Lot 10 (79, 83, 87 Sideroad 19), Centre Wellington.

Sincerely,
Jessica

Jessica Conroy, MES PI.
Resource Planner
Grand River Conservation Authority

400 Clyde Road, PO Box 729
Cambridge, ON N1R 5W6
Office: 519-621-2763 ext. 2230
Toll-free: 1-866-900-4722
Email: jconroy@grandriver.ca
www.grandriver.ca | Connect with us on social media

From: Heather Dixon <Heather@aboudtng.com>
Sent: Thursday, May 16, 2024 5:01 PM
To: B.Salmon@centrewellington.ca; Jessica Conroy <jconroy@grandriver.ca>
Cc: Cheryl-Anne Ross <Cheryl@aboudtng.com>
Subject: Terms of Reference for Part Lot 10, Centre Wellington EIS

Good afternoon,

This terms of reference for a proposed development at Part Lot 10, Centre Wellington was submitted November 28, 2022, and we have no record of a response received from the GRCA or Centre Wellington. The project has been on hiatus for over a year, and is now moving forwards again. We were hoping to receive comments on the ToR for this project.

Many thanks,

Heather Dixon, PhD (she/her) . Aquatic Ecologist
ABOUD & ASSOCIATES INC. 3-5 Edinburgh Road South . Guelph . Ontario . N1H 5N8

519.781.1581 www.aboudtng.com . heather@aboudtng.com

Aboud & Associates Inc. is located within the Between the Lakes Purchase (Treaty 3); the treaty lands and territory of the Mississaugas of the Credit.

Heather Dixon

From: Brett Salmon <BSalmon@centrewellington.ca>
Sent: Friday, May 24, 2024 10:35 AM
To: Heather Dixon
Cc: Cheryl-Anne Ross
Subject: RE: Terms of Reference for Part Lot 10, Centre Wellington EIS

Hi Heather

Township would defer to the GRCA for comments on the Terms of Reference.

Brett Salmon | Managing Director of Planning & Development

Township of Centre Wellington | 1 MacDonald Square, Elora, ON N0B 1S0
519.846.9691 x297 centrewellington.ca

From: Heather Dixon <Heather@aboudtng.com>
Sent: Wednesday, May 22, 2024 3:10 PM
To: Brett Salmon <BSalmon@centrewellington.ca>
Cc: Cheryl-Anne Ross <Cheryl@aboudtng.com>
Subject: Terms of Reference for Part Lot 10, Centre Wellington EIS

Good afternoon,

This terms of reference for a proposed development at Part Lot 10, Centre Wellington was submitted November 28, 2022, and we have no record of a response received from Centre Wellington. The project has been on hiatus for over a year, and is now moving forwards again. We were hoping to receive comments on the ToR for this project.

Many thanks,

Heather Dixon, PhD (she/her) . Aquatic Ecologist
ABOUD & ASSOCIATES INC. 3-5 Edinburgh Road South . Guelph . Ontario . N1H 5N8
519.781.1581 www.aboudtng.com . heather@aboudtng.com

Aboud & Associates Inc. is located within the Between the Lakes Purchase (Treaty 3); the treaty lands and territory of the Mississaugas of the Credit.

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects

190 Nicklin Road
Guelph . Ontario
N1H 7L5

T: 519.822.6839
F: 519.822.4052
info@aboudtng.com
www.aboudtng.com

URBAN FORESTRY
ARBORIST REPORTS
MANAGEMENT PLANS
TREE PRESERVATION PLANS
TREE RISK ASSESSMENT
GIS TREE INVENTORIES
TREE APPRAISALS
MONITORING

ECOLOGICAL RESTORATION
NATURAL SYSTEMS DESIGN
HABITAT RESTORATION
EDGE MANAGEMENT PLANS
RAVINE STEWARDSHIP PLANS
NATURALIZATION PLANS
INTERPRETIVE DESIGN
MONITORING
CONTRACT ADMINISTRATION

ENVIRONMENTAL STUDIES
SUBWATERSHED STUDIES
ENVIRONMENTAL IMPACT STATEMENTS
ECOLOGICAL LAND CLASSIFICATION
WETLAND EVALUATION
VEGETATION ASSESSMENT
BOTANICAL INVENTORIES
WILDLIFE SURVEYS
MONITORING

LANDSCAPE ARCHITECTURE
MASTER PLANNING
RESIDENTIAL COMMUNITIES
COMMERCIAL/INDUSTRIAL
HEALTHCARE AND EDUCATION
STREETSCAPES
PARKS AND OPEN SPACES
TRAIL SYSTEMS
GREEN ROOFS
CONTRACT ADMINISTRATION

EXPERT OPINION
OMB TESTIMONY
LEGAL PROCEEDINGS
PEER REVIEW
RESEARCH
EDUCATION

August 25, 2021

Our Project No.: AA20-100B
Sent by Email: lwarner@grandriver.ca
B.Salmon@centrewellington.ca

Laura Warner
Resource Planner
Grand River Conservation Authority
400 Clyde Road PO Box 729
Cambridge, Ontario N1R 5W6

&

Brett Salmon
Managing Director of Planning and Development
Township of Centre Wellington
1 MacDonald Square
Elora, ON N0B 1S0

Re: Part Lot 10 (79, 83 & 87 Sideroad 19)
Township of Centre Wellington (Fergus)
Terms of Reference - Scoped Environmental Impact Study

Dear Ms. Warner & Mr. Salmon:

This document outlines the Terms of Reference (ToR) of the scoped Environmental Impact Study (EIS) for a proposed development at 79, 83 & 87 Sideroad 19 in the Township of Centre Wellington (Fergus), Wellington County. Please review the terms and circulate to Grand River Conservation Authority (GRCA), County and Township staff for discussion and approval.

BACKGROUND

The client requires an EIS prepared to the satisfaction of the Township of Centre Wellington, Wellington County and GRCA in order to proceed with a proposed development on the subject property.

The subject property includes lands within the GRCA Regulation Limit and is within the area of interference for a GRCA wetland.

The subject property is within the Urban Centre as designated by the County of Wellington Official Plan; no Greenland features are currently mapped.

The subject property is designated as Residential, per the Township of Centre Wellington Official Plan Schedule A-1.

The subject property includes lands designated as Natural Heritage system, per the Wellington County Draft Natural Heritage System mapping.

The subject property is zoned by the Township of Centre Wellington Zoning By-law 2009-045 as Residential R1A, with a portion being Environmental Protection and Environmental Protection Overlay.

In preparing the Terms of Reference, the following sources were reviewed for background information:

- Aerial photography of the subject site,
- Wellington County Official Plan (2021 revision) and Schedules,
- Township of Centre Wellington Zoning By-law 2009-045,
- Wellington County mapping (Wellington County Maps, accessed August 11, 2021)
- GRCA mapping (accessed August 11, 2021) of natural heritage features (e.g., regulation limit, GRCA and OMNR wetlands, ANSI's, and MNR Woodlands),
- Natural Heritage Information Center, Make-a-map, accessed August 11, 2021.
- Ontario Nature. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. 2019
- Ontario Breeding Bird Atlas. Bird Studies Canada, 2007.
- Atlas of the Mammals of Ontario. Dobbyn, 1994.
- iNaturalist. Accessed August 24, 2021
- eBird. Cornell Lab of Ornithology. Accessed August 24, 2021.
- Ontario Butterfly Atlas. Toronto Entomologists' Association. Accessed August 24, 2021.

STUDY AREA

The study area is the subject property and up to 120m beyond the subject property, where access is permitted (*Figure 1*).

As needed, the lands adjacent to the proposed severance may require further access to assist with understanding the characteristics and functions of natural heritage features. Where access is restricted, information will be acquired through existing background information and what can be observed from the edge of the accessible lands.

Lands outside of the field study area, or where access is not provided, will be reviewed from existing background information (e.g., Wellington County Official Plan).

PLANNING CONTEXT

Wellington County Official Plan (2021 Revision)

The County of Wellington Official Plan indicates that the proposed development is within the Fergus Urban Centre. Section 7.5.1 states that:

"Residential uses of various types and densities, commercial, industrial and institutional uses as a well as parks and open spaces uses will be permitted where compatible and where services available."

Grand River Conservation Authority

The subject property contains a portion of an unevaluated GRCA wetland and is within the allowances of these features. Section 8.4 of the GRCA's *Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation* (Ontario Regulation 150/06, 2013) identifies the area of interference of a smaller, non-provincially significant wetland as being 30 metres.

Section 8.4.9 states:

"Development within an area of interference less than or equal to 30 metres (100 feet) from a wetland may be permitted in accordance with the policies in Sections 7.1.2-7.1.3-General Policies, and where an Environmental Impact Study demonstrates:

a) *There are no negative or adverse hydrological or ecological impacts on the wetland,*
b) *All development is located outside of the wetland and maintains as much setback as feasible,*
c) *Development is located above the water table, except as specified in Section 8.4.11, and*
d) *Septic systems are located a minimum of 15 metres (50 feet) from the wetland and 0.9 metres (3 feet) above the annual maximum water table."*

Township of Centre Wellington Zoning By-law 2009-045 (2018 Consolidation)

Map 71 of the Zoning By-law 2009-045 indicates that the subject property contains Environmental Protection and Environmental Protection Overlay.

Section 4.12.1 states:

"No building, structure, or private sewage treatment system shall be constructed closer than 30.0m (98.4 ft) from the limit of an EP zone without the prior written approval of the Grand River Conservation Authority."

BACKGROUND REVIEW

Additional background natural heritage information related to the subject lands and adjacent lands identified the following information:

1. The Ontario Reptile and Amphibian Atlas shows within the 10 km squares containing the subject lands, the recent and historical presence of 18 species (including complexes) of reptiles and amphibians (accessed August 11, 2021). Including three species of Conservation Concern (Blanding's Turtle, Midland Painted Turtle and Snapping Turtle).

2. The Natural Heritage Information Center indicates the presence of four species of Conservation Concern within 1km of the project location (Midland Painted Turtle, Eastern Meadowlark, Bobolink and Snapping Turtle).

3. The Ontario Breeding Bird Atlas shows within the 10 km squares containing the subject lands, the recent presence of 101 species of bird. Including eight species of Conservation Concern (Eastern Wood-pewee, Barn Swallow, Bank Swallow, Wood Thrush, Red-headed Woodpecker, Chimney Swift, Bobolink and Eastern Meadowlark).

4. The Ontario Mammal Atlas indicates that one species of Conservation Concern (Little Brown Myotis) has been observed in the 10km squares containing the subject lands.

5. eBird records from the nearby Fergus-Nexans Ponds (~1.25 km from the subject property) indicates the recent and historical presence of 61 species, including four species of Conservation Concern (Chimney Swift, Wood Thrush, Barn Swallow and Eastern Meadowlark).

6. iNaturalist observations within 1km of the subject property indicate the recent presence of one vascular plant, and three insects. None of the species observed are considered species of Conservation Concern.

7. The Ontario Butterfly Atlas shows within the 10 km squares containing the subject lands, the recent and historical presence of 14 species of butterflies, including one species of Conservation Concern (Monarch).

This information indicates that there is a potential presence of additional natural heritage features and constraints that may require investigation and/or comment.

PROPOSED TERMS OF REFERENCE

To fulfill the requirements of this study, we will:

1. Review background information, (e.g., proposed activity, relevant sections of natural heritage system components of the Wellington County OP, investigation of wildlife atlases and NHIC).
2. Complete a MECP Information Request, to determine the potential presence of SAR or other significant natural features in the study area.
3. Conduct two site visits to characterize vegetation communities using the ELC system (MNRF) and complete a two-season (late summer & fall) botanical inventory of the Study Area.
4. Wetland Limits: Pre-stake the boundary of the wetlands within the Study Area, where access is permitted, and coordinate with the GRCA to field-verify the actual boundary of the wetland.
5. Woodland Limit: Pre-stake the woodland dripline within the Study Area, and coordinate with the County to field-verify the woodland limit. *Requirement to be determined by County*.
6. Investigate the study area for the presence of Significant Wildlife Habitat.
7. Investigate the study area for presence of Species at Risk and Species at Risk habitat.
8. Record observations of incidental wildlife during site visits.
9. Analyze findings and prepare a map that shows:
    a. Identified natural heritage features, and functions and landscape level features (e.g., linkages, wetlands).
    b. The proposed site plan (locations of buildings, septic tank/field, amenity, drive).
    c. ELC vegetation communities.

d. Wetland boundary & Woodland dripline delineation.
e. Other noteworthy features as needed.
f. Locations of other natural heritage features from background literature searches (e.g., mammal atlas, herpetofaunal atlas, Wellington County OP, Township Zoning Bylaw.

10. Conduct an impact assessment by reviewing the proposed development's direct, indirect, and induced (i.e., residual, ongoing) impacts on the natural features. Provide an opinion about the location of the components of the general concept plan to reduce/avoid impacts to natural heritage features. Show the configuration of the proposed development and assess for minimizing impacts to ecological features and functions. This will involve discussions with the proponent and AA.
11. Provide policy rationale for expected impacts to natural heritage features e.g., removal of trees and grading to accommodate the site plan.
12. Edge Management Guidelines and Compensation: Provide general recommendations of where and why naturalization treatments may be needed to protect vegetation features (e.g., woodlands, wetlands) adjacent to the development activity. Provide rationale and recommendations for tree compensation (e.g., where, why and how much).
13. Prepare a report of the EIS that includes background information, methods, existing conditions, proposed development, impact assessment and mitigation measures, and appendices of field studies (e.g., flora and ELC data sheets).

Yours truly,

ABOUD & ASSOCIATES INC.

Shannon Davison B. Env., Eco. Rest. Cert.
Ecologist
MNRF Certified Ecological Land Classification
MNRF Certified Wetland Evaluation
CERPIT #0499

Cc: Zachary Prince, Wellington County (email)
Taylor McDaniel, Proponent

LEGEND

- SUBJECT PROPERTY
- STUDY AREA
- WETLAND
- REGULATION LIMIT

Information Sources:

1. Orthophotography provided by First Base Solutions Accessed August, 2021
2. Wetlands and Regulation Limit provided by Grand River Conservation Authority Accessed August, 2021

Title:

STUDY AREA

Project:

PART LOT 10, SIDEROAD 19
TOWN OF FERGUS

Date: AUGUST 2021
Project: AA20-100B
Scale: 1 : 2000

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
190 Nicklin Road, Guelph, Ontario, N1H 7L5 519.822.6839, www.aboudng.com

Figure No:

1

From: Shannon Davison
To: Laura Warner
Cc: zacharyp@wellington.ca; taylor.mcdaniel@me.com; Cheryl-Anne Ross
Subject: RE: AA20-100B Part Lot 10 (79, 83 & 87 Sideroad 19) Scoped EIS Terms of Reference
Date: Friday, October 1, 2021 1:04:00 PM

Good afternoon Laura,

I'm just following up on my e-mail below regarding some clarification on your Terms of Reference comments. If you're able to provide responses and let me know whether a revised Terms of Reference is necessary that would be appreciated.

In addition, Ryan Hamelin was able to verify the wetland limits on the subject property with myself on Monday September 27, as we had a booked another verification nearby and he was available immediately afterwards. He did indicate that he would let you know, however I figure I'd confirm as well.

Regards,

Shannon Davison B.Env. Eco. Rest. Cert.
Ecologist
Certified Ecological Restoration Practitioner- In Training #0499
MNRF Certified Wetland Evaluation . MNRF Certified Ecological Land Classification
ABOUD & ASSOCIATES INC. 190 Nicklin Road . Guelph . Ontario . N1H 7L5
C : 226.581.0707 www.aboudtng.com sdavison@aboudtng.com

From: Shannon Davison
Sent: September-07-21 2:17 PM
To: 'Laura Warner' <lwarner@grandriver.ca>
Cc: zacharyp@wellington.ca; taylor.mcdaniel@me.com; Cheryl-Anne Ross <Cheryl@aboudtng.com>; B.Salmon@centrewellington.ca
Subject: RE: AA20-100B Part Lot 10 (79, 83 & 87 Sideroad 19) Scoped EIS Terms of Reference

Hi Laura,

Thanks for your response. I'm hoping you can provide clarification regarding your first comment. We included the studies we believed would be necessary for the EIS, if the GRCA is requesting additional studies (i.e. hydrology, stormwater management) please let me know and they can be reviewed through the EIS.

Additionally, in regards to your third comment, previous correspondence between yourself and Taylor McDaniel in July, 2020, indicated that the drainage swale was constructed as part of the stormwater easement and wasn't to be addressed as part of the wetland delineation. It is our understanding that since this feature has been constructed as part of a stormwater easement that it should not be classified as a natural watercourse. If you're able to provide clarification on what should be included within the EIS regarding this feature that would be appreciated.

Please let me know if a revised Terms of Reference is necessary.

Regards,

Shannon Davison B.Env. Eco. Rest. Cert.
Ecologist
Certified Ecological Restoration Practitioner- In Training #0499
MNRF Certified Wetland Evaluation . MNRF Certified Ecological Land Classification
ABOUD & ASSOCIATES INC. 190 Nicklin Road . Guelph . Ontario . N1H 7L5
C : 226.581.0707 www.aboudtng.com sdavison@aboudtng.com

From: Laura Warner <lwarner@grandriver.ca>
Sent: September-01-21 3:00 PM
To: Shannon Davison <sdavison@aboudtng.com>
Cc: zacharyp@wellington.ca; taylor.mcdaniel@me.com; Cheryl-Anne Ross <Cheryl@aboudtng.com>; B.Salmon@centrewellington.ca
Subject: RE: AA20-100B Part Lot 10 (79, 83 & 87 Sideroad 19) Scoped EIS Terms of Reference

External

HI Shannon,

We have reviewed the Terms of Reference for the scoped EIS for the properties at 79, 83 & 87 Sideroad 19 and offer the following comments:

- The Terms of Reference does not identify if additional studies are proposed to interpret and support the proposed development. Additional studies may be required to support the proposed development and interpret any direct, indirect, and induced impacts on area natural area features and functions.

- The regulated wetland feature on the site is currently unevaluated. It is approximately 140m from the Irvine Creek Provincially Significant Wetland Complex and it is hydrologically connected to it. As part of the scoped EIS, a rationale should be provided to the Ministry of Northern Development, Mines, Natural Resources and Forestry to determine if this feature should or should not be complexed as part of the adjacent PSW. This will help inform which GRCA policy(s) apply and appropriate development setbacks and buffer.

- The MNRF Aquatic Resource Line identifies a Cool Water tributary bisecting the site. The scoped EIS should acknowledge this and provide interpretation on its presence and potential impacts from the proposed development directly and in-directly.

Kind regards,
Laura

Laura Warner | Resource Planner
Grand River Conservation Authority
400 Clyde Road, Cambridge ON N1R 5W6
P: (519) 621-2763 x 2231 | F: (519) 621-4844
lwarner@grandriver.ca | www.grandriver.ca

From: Shannon Davison <sdavison@aboudtng.com>
Sent: Wednesday, August 25, 2021 12:06 PM
To: Laura Warner <lwarner@grandriver.ca>; B.Salmon@centrewellington.ca
Cc: zacharyp@wellington.ca; taylor.mcdaniel@me.com; Cheryl-Anne Ross <Cheryl@aboudtng.com>
Subject: AA20-100B Part Lot 10 (79, 83 & 87 Sideroad 19) Scoped EIS Terms of Reference

Good afternoon Laura and Brett,

Please find attached the Terms of Reference for the scoped Environmental Impact Study for Part lot 10 (79, 83 & 87 Sideroad 19) in the Township of Centre Wellington. If you could please circulate the Terms to GRCA and Township staff and provide comment at your earliest convenience that would be appreciated.

Regards,

Shannon Davison B.Env. Eco. Rest. Cert.
Ecologist
Certified Ecological Restoration Practitioner- In Training #0499
MNRF Certified Wetland Evaluation . MNRF Certified Ecological Land Classification
ABOUD & ASSOCIATES INC. 190 Nicklin Road . Guelph . Ontario . N1H 7L5
C : 226.581.0707 www.aboudtng.com sdavison@aboudtng.com

Re: 20017 19 Sideroad

Cheryl-Anne Ross <Cheryl@aboudtng.com>

Tue 8/4/2020 8:40 AM

To: Shannon Davison <sdavison@aboudtng.com>;

Yes, I went out and staked it, and went up the swale feature a bit, because it had wetland plants and is all connected (and lets be honest GRCA usually includes it, so this is a surprise). All we've been contracted to do is the wetland staking, no verification, as GRCA still isn't doing site visits. Just lots of pictures to send them, which won't really help in this case I think... since it's all trees and I think has gotten larger because of this drainage sWale they put in.
So yes, I think those stakes along the watercourse/swale need to be pulled and just tell Him he needs to send his surveyors Out for accuracy. The hand held was way off... but I guess include the caveat that it has not been confirmed by the GRCA, they generally Trust us though, based on my
Conversation with Nathan last week.

Cheryl-Anne Ross
Ecology Lead, Wildlife Ecologist
Aboud & Associates

> On Aug 4, 2020, at 8:31 AM, Shannon Davison <sdavison@aboudtng.com> wrote:
>
> Thanks for letting me know.
>
> I know you're on vacation so I'll try my best not to bug you..
>
> Just catching up on this project and want to make sure I've understood where its at. You've gone out and staked the wetland but it hasn't been picked up by the surveyor or verified by the GRCA? Had you originally staked the swale feature and now those stakes need to come out since were ignoring it as per the GRCA?
>
> If that's the case, should I let Taylor know that I can adjust the boundary per the GRCA's request but we will still need verification by the GRCA on the boundary location prior to it being surveyed?
>
> **Shannon Davison B.Env. Eco. Rest. Cert.**
> Ecologist
> MNRF Certified Wetland Evaluation . MNRF Certified Ecological Land Classification
> **ABOUD & ASSOCIATES INC.** 190 Nicklin Road . Guelph . Ontario . N1H 7L5
> T : 519.822.6839 x5 C : 226.581.0707 www.aboudtng.com sdavison@aboudtng.com
>
> ---
>
> **From:** Cheryl-Anne Ross <Cheryl@aboudtng.com>
> **Sent:** August-04-20 7:38 AM
> **To:** Shannon Davison <sdavison@aboudtng.com>
> **Cc:** Denise Sharp <Denise@aboudtng.com>
> **Subject:** Fwd: 20017 19 Sideroad
>
> Thought I would forward this in case he is in a rush. This sounds like some of the stakes need to come out before a surveyor Picks them up.

Cheryl-Anne Ross
Ecology Lead, Wildlife Ecologist
Aboud & Associates

Begin forwarded message:

From: Taylor McDaniel <taylor.mcdaniel@me.com>
Date: August 3, 2020 at 2:55:55 PM EDT
To: Cheryl-Anne Ross <Cheryl@aboudtng.com>
Cc: Astrid Clos <astrid.clos@ajcplanning.ca>, Mike Vaughan <Mike.Vaughan@vanharten.com>, James Fryett <james@ftarchitects.ca>, James Dennis <James@aboudtng.com>
Subject: Fwd: 20017 19 Sideroad

Hi Cheryl,

Please find attached the reply from the GRCA. They are in agreement that we should be looking at the natural wetlands in isolation and we can disregard the water/ecology that has resulted from the storm water easement from our adjacent property. Could you pleas update your mapping accordingly to reflect the wetland itself and the appropriate setbacks so we can move forward with our preconsulation?

Thanks,

Taylor

Begin forwarded message:

From: Laura Warner <lwarner@grandriver.ca>
Subject: RE: 20017 19 Sideroad
Date: July 31, 2020 at 1:50:26 PM EDT
To: Taylor McDaniel <taylor.mcdaniel@me.com>

Hi Taylor,

My apologies for the delayed response. I have recently returning from vacation and am still catching up on my emails. I agree there is no need to incorporate the drainage swale in the wetland delineation as it was recently constructed as a stormwater easement.

Kind regards,
Laura

GRCAlogo-4S
Laura Warner | Resource Planner
Grand River Conservation Authority
400 Clyde Road, Cambridge ON N1R 5W6
P: (519) 621-2763 x 2231 | F: (519) 621-4844
lwarner@grandriver.ca | www.grandriver.ca

From: Taylor McDaniel <taylor.mcdaniel@me.com>
Sent: Monday, July 20, 2020 1:05 PM

To: Laura Warner <lwarner@grandriver.ca>
Subject: Fwd: 20017 19 Sideroad

Hi Laura,

We had our consultant attend the site to delineate the GRCA wetland area last week. I'm hoping you can provide some clarity for us so we can finalize this. I've attached a JPEG file showing the location of a drainage swale that we constructed 5 years ago when we built a new home on the adjacent lot on Victoria Cres. I have noted this in GREEN. It is a stormwater easement that flows from our lands on Victoria Cres to the subject property. We plan to incorporate this easement into our stormwater management plan so that this runoff from our property is captured properly and incorporated in to our design. As such, I am hoping that you can confirm that this swale can be ignored for the present as it relates to delineating the actual wetland at the rear of the property?

If you could review and let me know that would be great,

Thanks,

Taylor McDaniel

Begin forwarded message:

From: Laura Warner <lwarner@grandriver.ca>
Subject: RE: 20017 19 Sideroad
Date: July 9, 2020 at 9:55:14 AM EDT
To: Brian McCulloch <brian@ftarchitects.ca>
Cc: Taylor McDaniel <taylor.mcdaniel@me.com>, Astrid Clos <astrid.clos@ajcplanning.ca>, "mike vaughan (mike.vaughan@vanharten.com)" <mike.vaughan@vanharten.com>

Hi Brian,

If the regulated area was taken from the overlay drawing from our website, then it should suffice. The regulated area is not defined by a fixed elevation, but rather 30 metres from the boundary of the wetland. However, the wetland boundary has not been field confirmed and

therefore we have no GPS coordinates for its precise location.

Kind regards,
Laura

Laura Warner | Resource Planner
Grand River Conservation Authority
400 Clyde Road, Cambridge ON N1R 5W6
P: (519) 621-2763 x 2231 | F: (519) 621-4844
lwarner@grandriver.ca | www.grandriver.ca

From: Brian McCulloch <brian@ftarchitects.ca>
Sent: Tuesday, June 30, 2020 12:56 PM
To: Laura Warner <lwarner@grandriver.ca>
Cc: Taylor McDaniel <taylor.mcdaniel@me.com>; Astrid Clos <astrid.clos@ajcplanning.ca>; mike vaughan (mike.vaughan@vanharten.com) <mike.vaughan@vanharten.com>
Subject: RE: 20017 19 Sideroad

Hello Laura
The GRCA regulated area was taken from the overlay drawing obtained from the GRCA website.
However, it is difficult to identify the extent and position of the regulated area from the GRCA mapping.
Now that we have a topographic survey, is there any information pertaining to the regulated
area that may help us identify it on our plan. For example, if the regulated area is defined by a fixed elevation, can we use that to map the regulated area onto our site plan.
Regarding stormwater, I have asked our engineer to comment on a separate email.

Thank you

Brian McCulloch, OAA MRAIC
Fryett Turner Architects Inc.
115 Metcalfe St, Elora N0B1S0
519-846-2201 X223

Coronavirus / Covid-19: In compliance with the announcement from the Premier of Ontario on Monday 23rd March, our office will be shutting down to staff and visitors at 5:00pm on Tuesday 24th March, 2020, until further notice. Our staff will continue working from home as much as possible, but at reduced capacity. The office telephones may not be answered, so please address all enquiries via email.

From: Laura Warner <lwarner@grandriver.ca>
Sent: June-30-20 11:19 AM
To: Brian McCulloch <brian@ftarchitects.ca>
Cc: Taylor McDaniel <taylor.mcdaniel@me.com>; Astrid Clos <astrid.clos@ajcplanning.ca>; mike vaughan (mike.vaughan@vanharten.com) <mike.vaughan@vanharten.com>
Subject: RE: 20017 19 Sideroad

Hi Brian,

If all the apartments and parking area are to be located outside our regulated areas, then our review would be directed towards any grading proposed in the regulated area and ensuring adequate sediment and erosion controls are implemented. I will note that our mapping for this area does not depict accurate property lines and it is likely the property contains more regulated area than our mapping suggests.

Will stormwater be directed towards the municipal storm sewer system?

Thanks,
Laura

Laura Warner | Resource Planner
Grand River Conservation Authority
400 Clyde Road, Cambridge ON N1R 5W6
P: (519) 621-2763 x 2231 | F: (519) 621-4844
lwarner@grandriver.ca | www.grandriver.ca

From: Brian McCulloch <brian@ftarchitects.ca>
Sent: Monday, June 29, 2020 1:07 PM
To: Jason Wagler (jwagler@grandriver.ca) <jwagler@grandriver.ca>
Cc: Laura Warner <lwarner@grandriver.ca>; Taylor McDaniel <taylor.mcdaniel@me.com>; Astrid Clos <astrid.clos@ajcplanning.ca>; mike vaughan (mike.vaughan@vanharten.com) <mike.vaughan@vanharten.com>
Subject: 20017 19 Sideroad

Hello Jason

RE PT LOT 10, RP 71
I attach the current site plan we have developed for this property. GRCA mapping shows a restricted
area at the extreme (east) end taken from the gross GRCA mapping for the area.

Also attached is the plan of topographic survey for the property.

Can you kindly comment on the development and its suitability.

Thank you

Brian McCulloch, OAA MRAIC
Fryett Turner Architects Inc.
115 Metcalfe St, Elora N0B1S0
519-846-2201 X223

Coronavirus / Covid-19: In compliance with the announcement from the Premier of Ontario on Monday 23rd March, our office will be shutting down to staff and visitors at 5:00pm on Tuesday 24th March, 2020, until further notice. Our staff will continue working from home as much as possible, but at reduced capacity. The office telephones may not be answered, so please address all enquiries via email.

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects

3-5 Edinburgh Road South
Guelph . Ontario
N1H 5N8

T: 519.822.6839
F: 519.822.4052
info@aboudtng.com
www.aboudtng.com

November 28, 2022

Our Project No.: AA22-163A
Sent by Email: bkissner@grandriver.ca
B.Salmon@centrewellington.ca

Ben Kissner
Resource Planner
Grand River Conservation Authority
400 Clyde Road PO Box 729
Cambridge, Ontario N1R 5W6

&

Brett Salmon
Managing Director of Planning and Development
Township of Centre Wellington
1 MacDonald Square
Elora, ON N0B 1S0

Re: Part Lot 10 (79, 83 & 87 Sideroad 19)
Township of Centre Wellington (Fergus)
Terms of Reference - Scoped Environmental Impact Study

Dear Mr. Kissner & Mr. Salmon:

This document outlines the Terms of Reference (ToR) of the scoped Environmental Impact Study (EIS) for a proposed development at 79, 83 & 87 Sideroad 19 in the Township of Centre Wellington (Fergus), Wellington County. Please review the terms and circulate to Grand River Conservation Authority (GRCA), County and Township staff for discussion and approval.

BACKGROUND

The client requires an EIS prepared to the satisfaction of the Township of Centre Wellington, Wellington County, and the GRCA to proceed with a proposed development on the subject property.

The subject property includes lands within the GRCA Regulation Limit and is within the area of interference for a GRCA wetland.

The subject property is within the Urban Centre as designated by the County of Wellington Official Plan; no Greenland features are currently mapped.

The subject property is designated as Residential, per the Township of Centre Wellington Official Plan Schedule A-1.

The subject property includes lands designated as Natural Heritage System, per the Wellington County Draft Natural Heritage System mapping.

The subject property is zoned by the Township of Centre Wellington Zoning By-law 2009-045 as Residential R1A, with a portion being Environmental Protection and Environmental Protection Overlay.

In preparing the Terms of Reference, the following sources were reviewed for background information:

- Aerial photography of the subject site,
- Wellington County Official Plan (2021 revision) and Schedules,
- Township of Centre Wellington Zoning By-law 2009-045,
- Wellington County mapping (Wellington County Maps, accessed August 11, 2021)
- GRCA mapping (accessed August 11, 2021) of natural heritage features (e.g., regulation limit, GRCA and OMNR wetlands, ANSI's, and MNR Woodlands),
- Natural Heritage Information Center, Make-a-map, accessed August 11, 2021.
- Ontario Nature. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. 2019
- Ontario Breeding Bird Atlas. Bird Studies Canada, 2007.
- Atlas of the Mammals of Ontario. Dobbyn, 1994.
- iNaturalist. Accessed August 24, 2021
- eBird. Cornell Lab of Ornithology. Accessed August 24, 2021.
- Ontario Butterfly Atlas. Toronto Entomologists' Association. Accessed August 24, 2021.

STUDY AREA

The study area is the subject property and up to 120m beyond the subject property, where access is permitted (*Figure 1*).

As needed, the lands adjacent to the proposed severance may require further access to assist with understanding the characteristics and functions of natural heritage features. Where access is restricted, information will be acquired through existing background information and what can be observed from the edge of the accessible lands.

Lands outside of the field study area, or where access is not provided, will be reviewed from existing background information (e.g., Wellington County Official Plan).

PLANNING CONTEXT

Wellington County Official Plan (2021 Revision)

The County of Wellington Official Plan indicates that the proposed development is within the Fergus Urban Centre. Section 7.5.1 states that:

"Residential uses of various types and densities, commercial, industrial and institutional uses as a well as parks and open spaces uses will be permitted where compatible and where services available."

Grand River Conservation Authority

The subject property contains a portion of an unevaluated GRCA wetland and is within the allowances of these features. Section 8.4 of the GRCA's *Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation* (Ontario Regulation 150/06, 2013) identifies the area of interference of a smaller, non-provincially significant wetland as being 30 metres.

Section 8.4.9 states:

"Development within an area of interference less than or equal to 30 metres (100 feet) from a wetland may be permitted in accordance with the policies in Sections 7.1.2-7.1.3-General Policies, and where an Environmental Impact Study demonstrates:

a) *There are no negative or adverse hydrological or ecological impacts on the wetland,*
b) *All development is located outside of the wetland and maintains as much setback as feasible,*
c) *Development is located above the water table, except as specified in Section 8.4.11, and*
d) *Septic systems are located a minimum of 15 metres (50 feet) from the wetland and 0.9 metres (3 feet) above the annual maximum water table."*

Township of Centre Wellington Zoning By-law 2009-045 (2018 Consolidation)

Map 71 of the Zoning By-law 2009-045 indicates that the subject property contains Environmental Protection and Environmental Protection Overlay.

Section 4.12.1 states:

"No building, structure, or private sewage treatment system shall be constructed closer than 30.0m (98.4 ft) from the limit of an EP zone without the prior written approval of the Grand River Conservation Authority."

BACKGROUND REVIEW

Additional background natural heritage information related to the subject lands and adjacent lands identified the following information:

1. The Ontario Reptile and Amphibian Atlas shows within the 10 km squares containing the subject lands, the recent and historical presence of 18 species (including complexes) of reptiles and amphibians (accessed August 11, 2021). Including three species of Conservation Concern (Blanding's Turtle, Midland Painted Turtle and Snapping Turtle).

2. The Natural Heritage Information Center indicates the presence of four species of Conservation Concern within 1km of the project location (Midland Painted Turtle, Eastern Meadowlark, Bobolink and Snapping Turtle).

3. The Ontario Breeding Bird Atlas shows within the 10 km squares containing the subject lands, the recent presence of 101 species of bird. Including eight species of Conservation Concern (Eastern Wood-Pewee, Barn Swallow, Bank Swallow, Wood Thrush, Red-headed Woodpecker, Chimney Swift, Bobolink and Eastern Meadowlark).

4. The Ontario Mammal Atlas indicates that one species of Conservation Concern (Little Brown Myotis) has been observed in the 10km squares containing the subject lands.

5. eBird records from the nearby Fergus-Nexans Ponds (~1.25 km from the subject property) indicates the recent and historical presence of 61 species, including four species of Conservation Concern (Chimney Swift, Wood Thrush, Barn Swallow and Eastern Meadowlark).

6. iNaturalist observations within 1km of the subject property indicate the recent presence of one vascular plant, and three insects. None of the species observed are considered species of Conservation Concern.

7. The Ontario Butterfly Atlas shows within the 10 km squares containing the subject lands, the recent and historical presence of 14 species of butterflies, including one species of Conservation Concern (Monarch).

8. The reply to the Ministry of the Environment, Conservation and Parks (MECP) Information Request indicates the historical presence of six additional species of Conservation Concern (Silver Shiner, Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, Bald Eagle, Yellow-banded Bumble Bee and Short-eared Owl).

This information indicates that there is a potential presence of additional natural heritage features and constraints that may require investigation and/or comment.

PROPOSED TERMS OF REFERENCE

To fulfill the requirements of this study, we will:

1. Review background information, (e.g., proposed activity, relevant sections of natural heritage system components of the Wellington County OP, investigation of wildlife atlases and NHIC).
2. Complete a MECP Information Request, to determine the potential presence of SAR or other significant natural features in the study area.
3. Should the wetland meet the criteria for complexing per the OWES criteria, the MNRF will be contacted to determine if it should be complexed with the Irvine Creek Provincially Significant Wetland Complex.
4. Conduct two site visits to characterize vegetation communities using the ELC system (MNRF) and complete a two-season (late summer & fall) botanical inventory of the Study Area. (*complete*)
5. Wetland Limits: Pre-stake the boundary of the wetlands within the Study Area, where access is permitted, and coordinate with the GRCA to field-verify the actual boundary of the wetland. (*complete)*
6. Investigate the study area for the presence of Significant Wildlife Habitat.
7. Investigate the study area for presence of Species at Risk and Species at Risk habitat.
8. Record observations of all incidental wildlife during site visits.
9. Analyze findings and prepare a map that shows:

a. Identified natural heritage features, and functions and landscape level features (e.g., linkages, wetlands).
b. The proposed site plan (locations of buildings, septic tank/field, amenity, drive).
c. ELC vegetation communities.
d. Wetland boundary & Woodland dripline delineation.
e. Other noteworthy features as needed.
f. Locations of other natural heritage features from background literature searches (e.g., mammal atlas, herpetofaunal atlas, Wellington County OP, Township Zoning Bylaw).

10. Conduct an impact assessment by reviewing the proposed development's direct, indirect, and induced (i.e., residual, ongoing) impacts on the natural features. Provide an opinion about the location of the components of the general concept plan to reduce/avoid impacts to natural heritage features. Show the configuration of the proposed development and assess for minimizing impacts to ecological features and functions. This will involve discussions with the proponent and AA.
11. Provide policy rationale for expected impacts to natural heritage features e.g., removal of trees and grading to accommodate the site plan.
12. Edge Management Guidelines and Compensation: Provide general recommendations of where and why naturalization treatments may be needed to protect vegetation features (e.g., woodlands, wetlands) adjacent to the development activity. Provide rationale and recommendations for tree compensation (e.g., where, why and how much).
13. Prepare a report of the EIS that includes background information, methods, existing conditions, proposed development, impact assessment and mitigation measures, and appendices of field studies (e.g., flora and ELC data sheets).

Kind Regards,

ABOUD & ASSOCIATES INC.

Shannon Davison B. Env., Eco. Rest. Cert.
Ecologist
MNRF Certified Ecological Land Classification
MNRF Certified Wetland Evaluation
CERPIT #0499

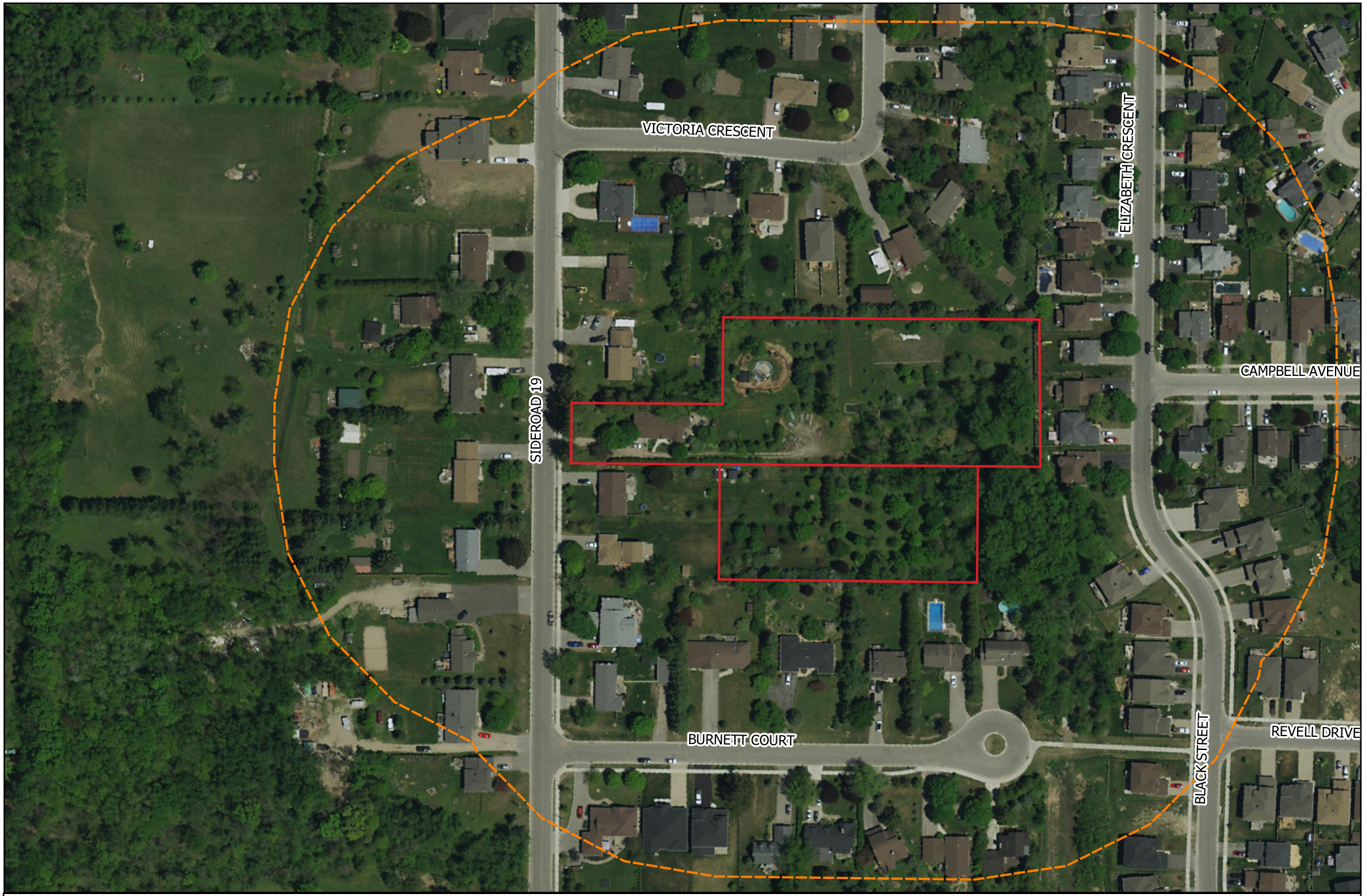
&

Jenny Andrews

Jenny Andrews B.Sc., M. L. Arch
Terrestrial Ecologist

Cc: Zachary Prince, Wellington County (email)
Steven Wright, Proponent

S:\A+A Projects\2020\Approved\20-100B Part Lot 10 (Sideroad 19) Fergus EIS\Approvals, Comments\AA20-100B Part Lot 10 (79, 83 & 87 Sideroad 19) EIS Terms of Reference.docx



LEGEND

STUDY AREA

SUBJECT LANDS

Information Sources:

1. Orthophotography provided by First Base Solutions Accessed August, 2021
2. Wetlands and Regulation Limit provided by GRCA Accessed August, 2021
2. Wetland Limit confirmed by AA and GRCA on September 27, 2021

Title:

NATURAL HERITAGE FEATURES

Project:

PART LOT 10, SIDEROAD 19
TOWN OF FERGUS

Date: NOVEMBER 2022

Project: AA22-163A

Scale: 1 : 2000

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
3-5 Edinburgh Road South . Guelph . Ontario . N1H 8N8 . 519.822.6839 . www.aboudng.com

Figure No: 1

APPENDIX 3
Field Investigation Details

Survey	Time	Date	Staff	Temp. (°C)	Wind (Beaufort)	Cloud Cover %	Precipitation	Past Precipitation (24 hours)
Species at Risk and Significant Wildlife Habitat Assessment	11:20-11:30	31-Aug-21	C.-A. Ross	22	2	50	None	None
ELC & Summer Botanical	09:35-11:19	31-Aug-21	C.-A. Ross	22	2	50	None	None
Wetland Delineation	12:30-13:30	15-Jul-21	C.A. Ross	26	1	20	None	None
Fall Botanical	08:21-10:00	06-Oct-21	S. Davison	14	1	70	None	None
Wetland Delineation 2	13:30-14:30	14-Oct-22	C.A. Ross	12	1	30	None	None
Bat Habitat Assessment and Woodpecker Nesting Cavity Assessment	12:10-13:45	19-Mar-24	H. Dixon and B. Varcoe	-2	2	100	Light snow	Light snow

APPENDIX 4
Ecological Land Classification Data Sheets

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

PROJ. NO./NAME: PART LOT 10, SIDEROAD 19		**POLYGON:** 2
SURVEYOR(S): CAR	**DATE:** AUGUST 31, 2021	**PHOTO #:**
START: 9:35	**END:** 11:19	**ZONE & UTM:**

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
■ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	■ MINERAL	☐ RIVERINE	■ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
		☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ ACIDIC BEDRK.	☐ VALLEYSLOPE		■ FORB	☐ MARSH
SITE		■ TABLELAND	COVER	☐ LICHEN	☐ SWAMP
☐ OPEN WATER	☐ BASIC BEDRK.	☐ ROLL. UPLAND	■ OPEN	☐ BRYOPHYTE	☐ FEN
☐ SHALLOW WATER		☐ CLIFF	☐ SHRUB	☐ DECIDUOUS	☐ BOG
■ SURFICIAL DEP.	☐ CARB BEDRK.	☐ TALUS	☐ TREED	☐ CONIFEROUS	☐ BARREN
☐ BEDROCK		☐ 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 (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	2	MALUS PUMILA > JUGLANS NIGRA
2	SUBCANOPY	3	1	RHAMNUS CATHARTICA
3	UNDERSTOREY	5	2	ECHINOCYSTIS LOBATA = CORNUS SERICEA > RUBUS IDAEUS = POPULUS BALSAMIFERA
4	GRD. LAYER	6	4	DAUCUS CAROTA > TRIFOLIUM PRATENSE > LOTUS CORNICULATUS > PLANTAGO MAJOR

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

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS: MEADOW	**CODE:** ME	
COMMUNITY SERIES: FORB MEADOW	**CODE:** MEF	
ECOSITE: FRESH- MOIST FORB MEADOW	**CODE:** MEFM 4	
VEGETATION TYPE:	**CODE:**	
INCLUSION	**CODE:**	
COMPLEX	**CODE:**	

NOTES:

Temp (°C)	Wind*	Cloud Cover	Precipitation	Precipitation(24hrs)
22	2	50	NONE	NONE

LAYERS: C = CANOPY SC = SUBCANOPY U = UNDERSTOREY GL = GRD LAYER
ABUNDANCE CODES: N= NONE R= RARE O= OCCASIONAL A= ABUNDANT D= DOMINANT

SPECIES	LAYER			
	C	SC	U	GL
MALUS PUMILA	O			
JUGLANS NIGRA	R			
POPULUS BALSAMIFERA			O-R	
ECHINOCYSTIS LOBATA			O	
CORNUS SERICEA			O	
RHAMNUS CATHARTICA		O-R		
RUBUS IDAEUS			O-R	

SPECIES	LAYER			
	C	SC	U	GL
DAUCUS CAROTA				A
VICIA AMERICANA				O
PLANTAGO MAJOR				A
TRIFOLIUM PRATENSE				A
MALVA SP.				O-R
TANACETUM VULGARE				O-R
ARCTIUM MINUS				O
CIRSIUM VULGARE				O-R
SOLIDAGO CANADENSIS				A-O
CAREX NORVEGICA				R
VIOLA SP.				O
LOTUS CORNICULATUS				A
ASCLEPIAS SYRIACA				O
DACTYLIS GLOMERATA				O
HEMEROCALLIS LILIOASPHOEDELUS				O
SYMPHYOTRICHUM NOVAE-ANGLIAE				O
ERIGERON PHILADELPHICUS				O
LEUCANTHEMUM VULGARE				O
PRUNELLA VULGARIS				O
FRAGARIA VESCA				O-R
HYPERICUM SP.				R
SOLANUM DULCAMARA			R	O
ARUNCUS DIOICUS				O
SYMPHYOTRICHUM SP.				O

NOTES:
ALIEN SPECIES- ABUNDANT, WIDESPREAD
PLANTATIONS/PLANTINGS- OCCASIONAL, LOCAL
TRACKS/TRAILS- FAINT TRAILS/LOCAL
DUPMING- LIGHT, LOCAL
NOISE- SLIGHT, WIDESPREAD

NO SEEPS OR CANDIDATE BAT HABITAT
MONARCH, BLJA, AMCR, BCCH

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
190 Nicklin Road, Guelph, Ontario, N1H 7L5 519.822.6839 www.aboudinc.com

Representative Photographs of Vegetation Community:

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	PROJ. NO./NAME: PART LOT 10, SIDEROAD 19		POLYGON: 3
	SURVEYOR(S): CAR	DATE: AUGUST 31, 2021	PHOTO #:
	START: 9:35	END: 11:19	ZONE & UTM:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	■ NATURAL	☐ PLANKTON	☐ LAKE
■ WETLAND	■ MINERAL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
		☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ ACIDIC BEDRK.	☐ VALLEYSLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER		■ TABLELAND	☐ OPEN	☐ LICHEN	■ SWAMP
☐ SHALLOW WATER	☐ BASIC BEDRK.	☐ ROLL. UPLAND	☐ SHRUB	☐ BRYOPHYTE	☐ FEN
■ SURFICIAL DEP.		☐ CLIFF	■ TREED	■ DECIDUOUS	☐ BOG
☐ BEDROCK	☐ CARB BEDRK.	☐ 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 (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	3	ACER X FREEMANII
2	SUBCANOPY			
3	UNDERSTOREY	3	3	RHAMNUS CATHARTICA > CORNUS RACEMOSA = VITIS RIPARIA > RIBES SP.
4	GRD. LAYER	6	4	MATTEUCCIA STRUTHIOPTERIS > IMPATIENS CAPENSIS > CAREX SP. > TOXICODENDRON RADICANS

HT CODES: 1= >25m 2= 10<HT≤25m 3= 2<HT≤10m 4= 1<HT≤2m 5= 0.5<HT≤1m 6= 0.2<HT≤0.5m 7= HT≤0.2m
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:	R	<10	O	10-24	A	25-50	O	>50
STANDING SNAGS:	N	<10	R	10-24	N	25-50	N	>50
DEADFALL/LOGS:	A	<10	O	10-24	O	25-50	R	>50
COMM. AGE.	MATURE							

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	SWAMP	CODE:	SW
COMMUNITY SERIES:	DECIDUOUS SWAMP	CODE:	SWD
ECOSITE:	MAPLE MINERAL DECIDUOUS SWAMP	CODE:	SWDM 3
VEGETATION TYPE:	SWAMP (FREEMAN'S) MAPLE MINERAL DECIDUOUS SWAMP	CODE:	SWDM 3-3
INCLUSION		CODE:	
COMPLEX		CODE:	

NOTES:

Temp (°C)	Wind*	Cloud Cover	Precipitation	Precipitation(24hrs)
22	2	50	NONE	NONE

LAYERS: C = CANOPY SC = SUBCANOPY U = UNDERSTOREY GL = GRD LAYER
ABUNDANCE CODES: N= NONE R= RARE O= OCCASIONAL A= ABUNDANT D= DOMINANT

SPECIES	LAYER			
	C	SC	U	GL
ACER X FREEMANII	D			
RHAMNUS CATHARTICA			A	
CORNUS RACEMOSA			O	
VITIS RIPARIA			O	
SAMBUCUS NIGRA			O-R	
RIBES SP.			O-R	

SPECIES	LAYER			
	C	SC	U	GL
IMPATIENS CAPENSIS				O
MATTEUCCIA STRUTHIOPTERIS				O
GERANIUM ROBERTIANUM				R
GEUM ALEPPICUM				O-R
CAREX SP.				O
EQUISETUM SP.				R
TOXICODENDRON RADICANS				O-R

NOTES: ALIEN SPECIES- ABUNDANT, WIDESPREAD
EVIDENCE OF FLOODING?- LIGHT, WIDESPREAD

NO SEEPS, CANDIDATE BAT HABITAT IS PRESENT
BLJA, BCCH

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
190 Nicklin Road, Guelph, Ontario, N1H 7L5, 519.822.6839, www.aboudinc.com

Representative Photographs of Vegetation Community:

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	PROJ. NO./NAME: PART LOT 10, SIDEROAD 19		POLYGON: 4
	SURVEYOR(S): CAR	DATE: AUGUST 31, 2021	PHOTO #:
	START: 9:35	END: 11:19	ZONE & UTM:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
■ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	■ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	■ MINERAL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
		☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ ACIDIC BEDRK.	☐ VALLEYSLOPE		☐ FORB	☐ MARSH
		■ TABLELAND		☐ LICHEN	☐ SWAMP
	☐ BASIC BEDRK.	☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		■ DECIDUOUS	☐ BOG
	☐ CARB BEDRK.	☐ 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 (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	POPULUS TREMULOIDES > ACER NEGUNDO > ULMUS AMERICANA
2	SUBCANOPY	3	4	RHAMNUS CATHARTICA >> SAMBUCUS CANADENSIS > SORBUS AUCUPARIA > PRUNUS AVIUM
3	UNDERSTOREY	4	3	RHAMNUS CATHARTICA >> VITIS RIPARIA
4	GRD. LAYER	6	3	ALLIARIA PETIOLATA = MATTEUCCIA STRUTHIOPTERIS >RUBUS IDAEUS > PARTHENOCISSUS QUINQUEFOLIA

HT CODES: 1= >25m 2= 10<HT≤25m 3= 2<HT≤10m 4= 1<HT≤2m 5= 0.5<HT≤1m 6= 0.2<HT≤0.5m 7= HT≤0.2m
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:	A	<10	A	10-24	O	25-50	R	>50
STANDING SNAGS:	O	<10	O	10-24	R	25-50	R	>50
DEADFALL/LOGS:	A	<10	O	10-24	R	25-50	N	>50
COMM. AGE.	MID-AGED							

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

SOIL ANALYSIS:

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	WOODLAND	CODE:	WO
COMMUNITY SERIES:	DECIDUOUS WOODLAND	CODE:	WOD
ECOSITE:	FRESH- MOIST DECIDUOUS WOODLAND	CODE:	WODM 5
VEGETATION TYPE:		CODE:	
INCLUSION		CODE:	
COMPLEX		CODE:	

NOTES:

Temp (°C)	Wind*	Cloud Cover	Precipitation	Precipitation(24hrs)
22	2	50	NONE	NONE

LAYERS: C = CANOPY SC = SUBCANOPY U = UNDERSTOREY GL = GRD LAYER
ABUNDANCE CODES: N= NONE R= RARE O= OCCASIONAL A= ABUNDANT D= DOMINANT

SPECIES	LAYER			
	C	SC	U	GL
POPULUS TREMULOIDES	O			
SORBUS AUCUPARIA		R		
ACER NEGUNDO	O			
PRUNUS AVIUM		R		
ULMUS AMERICANA	R			
RHAMNUS CATHARTICA		D-A	D-A	
PARTHENOCISSUS QUINQUEFOLIA				O
RUBUS IDAEUS				O
VITIS RIPARIA			O-R	
SAMBUCUS CANADENSIS		O		
CORNUS RUGOSA				R

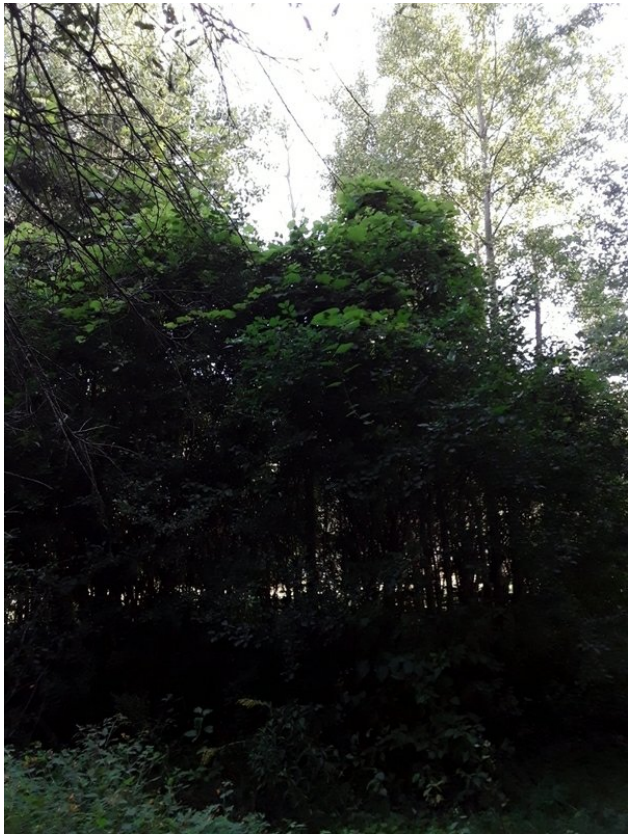
SPECIES	LAYER			
	C	SC	U	GL
VIOLA SP.				O
GEUM ALEPPICUM				O
MATTEUCCIA STRUTHIOPTERIS				O
ALLIARIA PETIOLATA				O
SOLIDAGO CANADENSIS				O-R
IMPATIENS CAPENSIS				O
TUSSILAGO FARFARA				O

NOTES:
BUCKTHORN DOMINATES UNDERSTOREY AND SUBCANOPY
WITH POPLAR CANOPY
ALIEN SPECIES- DOMINANT, EXTENSIVE
GAPS IN FOREST CANOPY- SMALL, WIDESPREAD
TRACKS/TRAILS- FAINT TRAILS/WIDESPREAD
RECREATION- LIGHT, WIDESPREAD

NO SEEPS, NO CANDIDATE BAT HABITAT
NOCA

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
190 Nicklin Road, Guelph, Ontario, N1H 7L5 519.822.6839 www.aboudinc.com

Representative Photographs of Vegetation Community:



APPENDIX 5
Vascular Plant List

Season		Plant [1] Type	Scientific Name	Common Name	CC [2]	CW [3]	SARO [4] Status	SARA [5] Status	Global [6] Rank	Prov. [7] Rank	Wellington County[8]
Summer	Fall										
✓	✓	TR	*Acer negundo*	Manitoba Maple	0	0	NL	NL	G5	S5	
	✓	TR	*Acer platanoides*	Norway Maple	*	5	NL	NL	GNR	SNA	
✓	✓	TR	*Acer X freemanii*	Freeman's Maple	6	-5	NL	NL	GNR	SNA	
	✓	FO	*Aegopodium podagraria*	Goutweed	*	0	NL	NL	GNR	SNA	
✓	✓	FO	*Alliaria petiolata*	Garlic Mustard	*	0	NL	NL	GNR	SNA	
✓		FO	*Arctium minus*	Common Burdock	*	3	NL	NL	GNR	SNA	
✓		FO	*Aruncus dioicus*	Common Goatsbeard	*	3	NL	NL	G5	SNA	
✓	✓	FO	*Asclepias syriaca*	Common Milkweed	0	5	NL	NL	G5	S5	
✓		SE	*Carex norvegica*	Norway Sedge		0	NL	NL	G4G5	S4	
✓		SE	*Carex sp.*	Sedge species							
	✓	FO	*Cichorium intybus*	Chicory	*	5	NL	NL	GNR	SNA	
	✓	FO	*Circaea canadensis*	Broad-leaved Enchanter's Nightshade	2	3	NL	NL	G5	S5	
	✓	FO	*Cirsium arvense*	Canada Thistle	*	3	NL	NL	G5	SNA	
✓		FO	*Cirsium vulgare*	Bull Thistle	*	3	NL	NL	GNR	SNA	
✓		SH	*Cornus racemosa*	Gray Dogwood	2	0	NI	NL	G5?	S5	
✓		SH	*Cornus rugosa*	Round-leaved Dogwood	6	5	NL	NL	G5	S5	✓
✓	✓	SH	*Cornus sericea*	Red-osier Dogwood	2	-3	NL	NL	G5	S5	
✓	✓	GR	*Dactylis glomerata*	Orchard Grass	*	3	NL	NL	GNR	SNA	
✓	✓	FO	*Daucus carota*	Wild Carrot	*	5	NL	NL	GNR	SNA	
✓		VI	*Echinocystis lobata*	Wild Mock-cucumber	3	-3	NL	NL	G5	S5	
✓		FE	*Equisetum sp.*	Horsetail species							
✓	✓	FO	*Erigeron philadelphicus*	Philadelphia Fleabane	1	-3	NL	NL	G5	S5	
✓	✓	FO	*Fragaria vesca*	Woodland Strawberry	4	3	NL	NL	G5	S5	
✓	✓	FO	*Geranium robertianum*	Herb-robert	2	3	NL	NL	G5	S5	
✓	✓	FO	*Geum aleppicum*	Yellow Avens	2	0	NL	NL	G5	S5	
	✓	FO	*Glechoma hederacea*	Ground Ivy	*	3	NL	NL	GNR	SNA	
✓		FO	*Hemerocallis lilioasphodelus*	Yellow Daylily	*	5	NI	NL	GNR	SNA	

✓		FO	*Hypericum sp.*	St. John's-wort species							
✓	✓	FO	*Impatiens capensis*	Spotted Jewelweed							
✓	✓	TR	*Juglans nigra*	Black Walnut	5	3	NL	NL	G5	S4?	
	✓	FO	*Lamium purpureum*	Purple Deadnettle	*	5	NL	NL	GNR	SNA	
✓		FO	*Leucanthemum vulgare*	Oxeye Daisy		5	NL	NL	GNR	SNA	
✓	✓	FO	*Lotus corniculatus*	Garden Bird's-foot Trefoil	*	3	NL	NL	GNR	SNA	
✓	✓	TR	*Malus pumila*	Common Apple	*	5	NL	NL	G5	SNA	
	✓	FO	*Malva moschata*	Musk Cheeseweed	*	5	NL	NL	GNR	SNA	
✓		FO	*Malva sp.*	Cheeseweed species							
✓	✓	FE	*Matteuccia struthiopteris*	Ostrich Fern	5	0	NL	NL	G5T5	S5	
	✓	FO	*Medicago lupulina*	Black Medic	*	3	NL	NL	GNR	SNA	
✓	✓	VW	*Parthenocissus quinquefolia*	Virginia Creeper	6	3	NL	NL	G5	S4?	
	✓	TR	*Picea abies*	Norway Spruce	*	5	NL	NL	G5	SNA	
	✓	TR	*Picea glauca*	White Spruce	6	3	NL	NL	G5	S5	
✓	✓	FO	*Plantago major*	Common Plantain	*	3	NL	NL	G5	S5	
	✓	GR	*Poa pratensis*	Kentucky Bluegrass	0	3	NL	NL	G5T5	SNA	
✓		TR	*Populus balsamifera*	Balsam Poplar	4	-3	NL	NL	G5	S5	
✓	✓	TR	*Populus tremuloides*	Trembling Aspen	2	0	NL	NL	G5	S5	
✓	✓	FO	*Prunella vulgaris*	Self-heal	*	0	NL	NL	G5TU	SNA	
✓	✓	TR	*Prunus avium*	Sweet Cherry	*	5	NL	NL	GNR	SNA	
	✓	FO	*Ranunculus acris*	Tall Buttercup	*	0	NL	NL	G5	SNA	
✓	✓	SH	*Rhamnus cathartica*	Common Buckthorn	*	0	NL	NL	GNR	SNA	
✓		SH	*Ribes sp.*	Gooseberry species							
✓	✓	SH	*Rubus idaeus ssp. idaeus*	Common Red Raspberry		3	NL	NL	G5T5	S5	
	✓	FO	*Rubus pubescens*	Dewberry	4	-3	NL	NL	G5	S5	
✓		SH	*Sambucus canadensis*	Common Elderberry	5	-3	NL	NL	G5	S5	
✓		SH	*Sambucus nigra*	Black Elderberry		-3	NL	NL	G5	SNA	
✓	✓	VI	*Solanum dulcamara*	Bittersweet Nightshade	*	0	NL	NL	GNR	SNA	
✓	✓	FO	*Solidago canadensis*	Canada Goldenrod	1	3	NL	NL	G5T5	S5	
✓		TR	*Sorbus aucuparia*	European Mountain-ash	*	5	NL	NL	G5	SNA	
	✓	FO	*Symphyotrichum lateriflorum*	Calico Aster	3	0	NL	NL	G5	S5	
✓	✓	FO	*Symphyotrichum novae-angliae*	New England Aster	2	-3	NL	NL	G5	S5	
✓		FO	*Symphyotrichum sp.*	Aster species							
	✓	SH	*Syringa vulgaris*	Common Lilac	*	5	NL	NL	GNR	SNA	

✓	✓	FO	*Tanacetum vulgare*	Common Tansy	*	5	NL	NL	GNR	SNA	
	✓	FO	*Taraxacum officinale*	Common Dandelion	*	3	NL	NL	G5	SNA	
	✓	TR	*Thuja occidentalis*	Eastern White Cedar	4	-3	NL	NL	G5	S5	
✓	✓	VW	*Toxicodendron radicans*	Poison Ivy	5	-1	NL	NL	G5	S5	
✓	✓	FO	*Trifolium pratense*	Red Clover	*	3	NL	NL	GNR	SNA	
✓	✓	FO	*Tussilago farfara*	Colt's-foot	*	3	NL	NL	GNR	SNA	
✓	✓	TR	*Ulmus americana*	American Elm	3	-3	NL	NL	G5	S5	
	✓	FO	*Verbascum thapsus*	Common Mullein	*	5	NL	NL	GNR	SNA	
✓		FO	*Vicia americana*	American Vetch	5	5	NL	NL	G5	S5	
✓		FO	*Viola sp.*	Violet species							
✓	✓	VW	*Vitis riparia*	Riverbank Grape	0	0	NL	NL	G5	S5	

1.	Plant Types: AL = Algae; FE = Fern; FO = Forb; GR = Grass; LC = Lichen; LV = Liverwort; MO = Moss; RU = Rush; SE = Sedge; SH = Shrub; TR = Tree; VI = Herbaceous vine; VW = Woody Vine
2.	CC: Coefficient of Conservatism reflects a species' fidelity to a specific habitat. Range from 0 to 10; 10 = very conservative, not likely in disturbed habitats, 1 = least conservative, likely found in a broad range of habitat. * = value not assigned because they are non-native
3.	CW: Coefficient of Wetness reflects a species' affinity for wet soil conditions. Range from -5 to 5; -5 = obligate wetland species, 5 = obligate upland species.
4.	SARO: Status under the Provincial Endangered Species Act, listed on the Species at Risk in Ontario (SARO) list. In order of severity, statuses include: EXP = Extirpated; END = Endangered; THR = Threatened; SC = Special Concern
5.	SARA: Status under the National Species at Risk Act (SARA), assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In order of severity, statuses include: EXP = Extirpated; END = Endangered; THR = Threatened; SC = Special Concern
6.	Global rarity rank. Range from G1 to G5; G1 = Extremely rare, G5 = Very Common. NR = Unranked; U = Unrankable.
7.	Provincial rarity rank. Range from S1 to S5; S1 = Extremely rare, S5 = Very Common. NR = Unranked; U = Unrankable.
8.	Significant Plant List for Wellington County (Dougan & Associates, 2009)

APPENDIX 6
Significant Wildlife Habitat Assessment

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
SEASONAL CONCENTRATION AREAS OF ANIMALS								
1	Waterfowl stopover and Staging Areas (terrestrial)	- Fields with Sheet water in spring (incl. agricultural)	- Mixed species aggregations of 100 or more individuals confirms SWH	flooded field ecosite and 100-300m radius is the SWH	No habitat matching criteria identified in Study Area	No	None required.	No
2	Waterfowl Stopover and Staging (Aquatic)	- Ponds, marshes, lakes, bays, coastal inlets and watercourses and reservoirs - SWTP & SWMP are not SWH	- Aggregations of 100 or more listed species for 7 days (ie. >700 waterfowl use days) confirms SWH	Aquatic ecosite and 100m radius is the SWH	No habitat matching criteria identified in Study Area	No	None required.	No
3	Shorebird Migratory stopover	- Shorelines of Lakes, rivers, wetlands, beaches, bars; seasonally flooded, muddy and un-vegetated shoreline habitat	- 3 or more listed species and >1000 shorebird use days, or >100 whimbrel, confirms SWH	Shoreline ecosite and 100m radius is the SWH	No habitat matching criteria identified in Study Area, >5km from any Lake Ontario	No	None required.	No
4	Raptor Wintering Area	- Combination of upland field and woodland habitat >20ha total (includes,>15ha upland field) - least disturbed sites, idle, fallow or lightly grazed field/meadow best	- 1 or more Short-eared Owl, or, at least 10 individuals and 2 listed species for a minimum of 20 days, and 3 of 5 years, confirms SWH	Ecosite communities (field and woodland) is the SWH	No habitat matching criteria identified in Study Area.	No	None required.	No
5	Bat Hibernacula	- Caves, mine shafts, underground foundations, karsts - buildings are not SWH	- All sites with confirmed hibernating bats, confirms SWH	Ecosite and 200m radius is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
6	Bat Maternity Colony	- All forested ecosites, FOD, FOC, FOM, SWD, SWM, SWC with >10/ha trees (>25cm DBH) in early stages of decay (class 1-3) - buildings are not SWH	- >10 Big Brown Bats, >20 Little Brown Myotis, >5 adult female Silver-haired Bats confirms SWH	Entire woodland or forest stand ELC ecosite containing colony is the SWH	Forested ecosites present in Study area with trees >10cm DBH.	Yes	Bat habitat assessment conducted. Five poor quality trees not in forested ecosites to be removed.	No
7	Turtle Wintering Area	- Areas with permanent water deep enough not to freeze, with mud/soft substrates	- 5 over-wintering Midland Painted Turtles, 1 or more Northern Map Turtle or Snapping Turtle confirms SWH	Mapped ELC ecosite, or deep pool element where turtles overwinter is the SWH	No habitat matching criteria identified in Study Area	No	None required.	No

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
8	Reptile Hibernaculum	- Sites below the frost line; rock barren, crevice and cave, talus, alvar, rock piles, slopes, stone fences and crumbling foundations	- Presence of hibernacula with minimum 5 individuals of 1 snake species/ individuals of 2 or more species confirms SWH - Congregations of a minimum of 5 snakes of 1 species/ individuals of 2 or more snake species, near potential hibernacula on sunny warm days in spring and fall confirms SWH	Feature hibernacula is located in, and 30m radius is the SWH	No habitat matching criteria identified in Study Area	No	None required.	No
9	Colonially-nesting Bird Habitat (cliff/bank)	- Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, barns	- 1 or more nest sites with 8 or more Cliff Swallow or, 50 Bank Swallow and Rough-winged Swallow pairs during the breeding season.	Colony and 50m radius around peripheral nest is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
10	Colonially-nesting Bird Habitat (Tree/shrub)	- Live or dead standing trees in wetlands, lakes, islands and peninsulas, occasionally shrubby and emergent vegetation	- 5 or more active Great-blue Heron or other listed species nests	Edge of the colony plus minimum 300m radius, or extent of the forest ecosite, or entire island <15ha is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
11	Colonially-nesting Bird Habitat (Ground)	- Rocky islands or peninsulas within a lake or large river(natural or artificial)	- >25 active nests of Herring Gull, Ring-billed Gull, >5 active nests of Common Tern, or >2 active nests of Caspian Tern. 5 or more pairs of Brewer's Blackbird. Any active nesting colony of Little Gull, Great Black-backed Gull.	Edge of colony plus min 150m radius or extent of ELC ecosite, or island <3ha is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
12	Migratory Butterfly Stopover Area	- At least 10ha, with undisturbed field/meadow and forest or woodland edge habitat present, within 5km of Lake Ontario.	- Presence of Monarch use days >5000 or >3000 where there is a mix of Monarch with Painted Ladies or White Admirals	Field/meadow and forest/woodland is the SWH	No habitat matching criteria identified in Study Area, >5km from Lake Ontario	No	None required.	No
13	Land bird Migratory Stopover Area	- Woodlots >5ha in size - within 5km of Lake Ontario	- Use by >200 birds/day, with >35species, with at least 10sp recorded on 5 different survey dates.	Woodlot is the SWH	No habitat matching criteria identified in Study Area, >5km from Lake Ontario	No	None required.	No

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
14	Deer Yarding Areas	- ELC communities providing Thermal cover (FOM, FOC, SWM, SWC, CUP2, CUP3, FOD3, CUT)	- Deer yards are managed by MNRF, available through district offices and LIO.	LIO mapping	No Deer yarding areas identified on LIO Mapping	No	None required.	No
15	Deer Winter Congregation Areas	- All forested ecosites >100ha - Conifer Plantations <50ha may be used	- Deer management is the responsibility of the MNRF - Contact MNRF or LIO for known deer winter areas.	LIO mapping	No Deer Winter Congregation areas identified on LIO Mapping	No	None required.	No
RARE VEGETATION COMMUNITIES								
16	Cliffs & Talus Slopes	- Cliff: vertical to near vertical bedrock >3m in height - Talus slope: rock rubble at the base of a cliff made up of coarse rocky debris	- Confirm any ELC Vegetation Type for Cliffs or Talus Slopes	Area of ELC sites: TAO, TAS, TAT, CLO, CLS, CLT	No habitat matching criteria identified in Study Area	No	None required	No
17	Sand Barren	- Exposed, sparsely vegetated & caused by lack of moisture, fires and erosion.	- area >0.5ha in size - Confirm any ELC vegetation Type for Sand Barren - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
18	Alvar	- Level, mostly un-fractured calcareous bedrock feature, overlain by a thin veneer or soil	- area >0.5ha in size - Field Studies that identify four of the five Alvar Indicator Species - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
19	Old Growth Forest	- >30ha forests with at least 10ha interior habitat and multi-layered canopy	- Dominant Tree Species >140 years old - No recognizable signs forestry practices (old stumps)	Area of ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
20	Savannah	- Tall Grass Prairie Habitat with 25%-60% Tree cover - Remnant sites such as Railway Right of ways are not SWH	- No minimum size, and must be restored to a natural state. - Confirm one or more savannah indicator species - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required	No

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
21	Tallgrass Prairie	- Ground cover dominated by prairie grasses with <25% tree cover - Remnant sites such as Railway Right of ways are not SWH	- No minimum size, and must be restored to a natural state. - Confirm one or more prairie indicator species - Not dominated by exotic or introduced species	Area of ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
22	Other Rare Vegetation Communities	- All Provincially Rare S1, S2, S3 Vegetation Communities (Appendix M of SWHTG)	- Field Studies Confirming ELC vegetation type is a rare vegetation community	Area of ELC ecosite is the SWH	No communities identified on site are S1-S3 communities	No	None required	No
SPECIALIZED HABITAT FOR WILDLIFE								
23	Waterfowl Nesting Areas	- Upland Habitat, adjacent to Wetland ELC ecosites (except SWC, SWM) - Extends 120m from a wetland (>0.5ha) and any small wetlands (<0.5ha) within a cluster of at least 3 - Upland area at least 120m wide	- Presence of 3 or more nesting pairs of listed species excluding Mallards - Presence of 10 or more nesting pairs including mallards - Any active Black Duck nesting site	SWH may be greater than or less than 120m from the wetland edge and must provide enough habitat for waterfowl to successfully nest	No habitat matching criteria identified in Study Area	No	None required	No
24	Bald Eagle or Osprey Nesting, Foraging and Perching Habitat	- Forest communities, adjacent to riparian areas - Osprey nests usually at top of tree - Bald Eagle nest usually in super canopy tree in a notch within canopy	- Studies confirm one or more active Bald Eagle or Osprey nest - Alternate nests included in SWH - Nests must be used annually, if found inactive, must be known inactive at least 3 years, or suspected unused for 5 years if unknown	Active nest plus 300m for Osprey Active nest plus 400-800m for Bald Eagle	No habitat matching criteria identified in Study Area	No	None required	No
25	Woodland Raptor Nesting Habitat	- Forested communities, forested swamp communities and cultural Plantations - Natural Forested/conifer plantations >30ha with >10ha interior habitat (200m buffer)	- One or more active nest of listed species	Nest protection radius: - Red-Shouldered Hawk, Northern Goshawk 400m - Barred Owl 200m - Broad-winged Hawk, Coopers Hawk 100m - Sharp-shinned Hawk 50	No habitat matching criteria identified in Study Area	No	No stick nests observed during SWH	No

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
26	Turtle Nesting Areas	- Exposed Mineral soil (sand or gravel) adjacent (<100m) or within shallow marsh, shallow submerged, shallow floating, bog or fen communities - Located in open sunny areas, away from roads and less prone to predation - Municipal and provincial road shoulders are not SWH.	- Confirm 5 or more nesting Midland Painted Turtles, 1 or more nesting Northern Map Turtle or Snapping Turtle	Area or sites with exposed mineral soils, plus a radius of 30-100m around the nesting area is the SWH.	No habitat matching criteria identified in Study Area	No	None required	No
27	Seeps and Springs	- Areas where ground water comes to the surface - Any forested area within the headwaters of a stream or river system	- Confirm site with 2 or more seeps/springs. -	Area of ELC forest ecosite containing seep/spring is the SWH	Seeps and springs possible within forested and wetland communities	Yes	ELC complete	No
28	Amphibian Breeding Habitat (woodland)	- Breeding pools within woodlands - Wetland, pond or pool >500m^2 within or adjacent (<120m) to a woodland. - Woodlands with permanent ponds, or those with water until mid-July more likely to be used.	- Confirm Breeding population of 1 or more listed newt/salamander species, 2 or more of the listed frog species with at least 20 individuals (adults or egg masses), 2 or more of the listed frog species with call code levels of 3. - Wetland adjacent to woodlands includes travel corridor connecting features as SWH.	Wetland area, plus 230m radius of woodland is the SWH.	No habitat matching criteria identified in Study Area	No	None required.	No

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
29	Amphibian Breeding Habitat (Wetland)	- Swamp, marsh, fen, bog, open aquatic and shallow aquatic ELC communities. - Typically isolated from woodlands (>120m), but includes larger wetlands with primarily aquatic species (bull frogs) that are adjacent to woodlands. - Wetlands >500m2 - Presence of shrubs & logs - Bullfrogs require permanent water bodies and abundant emergent vegetation.	- Confirm Breeding populations of 1 or more listed newt/salamander species, or 2 or more listed frog/toad species with at least 20 individuals (adults or egg masses), or 2 or more listed frog/toad species with a call code level of 3 - Or any wetland with confirmed breeding Bullfrog.	ELC ecosite and shoreline is the SWH Movement corridors (SWH) must be considered if this habitat is significant	No habitat matching criteria identified in Study Area	No	None required.	No
30	Area-sensitive Breeding Bird Habitat	- Habitats where interior breeding birds are breeding - Large mature (>60 years) forest stands or woodlots >30ha - Forest and swamp ELC communities - Interior habitat at least 200m from edge	- Presence of nesting or breeding pairs of 3 or more of the listed species - Any site with Cerulean Warbler or Canada Warbler is SWH -	ELC ecosite is the SWH	No interior habitat (>200m) identified in study area	No	None required	No
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH								

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
31	Marsh Bird Breeding Habitat	- Some meadow marsh, shallows submerged, shallow floating, mixed shallow floating, fen and bog communities (see SWH Ecoregion guide for specifics) - Nesting occurs in wetlands, all wetland habitat is considered with presence of shallow water with emergent aquatic vegetation - Green heron at edge of water sheltered by shrubs and trees.	- 5 or more nesting pairs of Sedge Wren or Marsh Wren, 1 pair of Sandhill Crane, or breeding by any combination of 5 or more of the listed species - Any Wetland with 1 or more breeding pair Black Tern, Trumpeter Swan, Green Heron or Yellow Rail	ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required.	No
32	Open Country Bird Breeding Habitat	- Grassland area >30ha (natural & cultural fields and meadows) - Grasslands not class 1 or 2 agriculture (no row crops or intensive hay or livestock pasturing) - Mature hayfields or pasture at least 5 years old	- Nesting or breeding of 2 or more of the listed species - Field with 1 or more Short-eared Owls	Contiguous ELC ecosite is the SWH	No habitat matching criteria identified in Study Area	No	None required.	No
33	Shrub/Early Successional Bird Breeding Habitat	- Cultural thickets, savannah and woodland habitat - Large field area succeeding to shrub and thicket habitat >10ha in size - Patches of shrub ecosite may be complexed into larger old field ecosites for some species	- Confirm nesting or breeding of 1 of the listed indicator species and at least 2 of the common species - Habitat with Yellow-breasted Chat Or Golden-winged Warbler is SWH	SWH is contiguous ELC ecosite field/thicket area	No habitat matching criteria identified in Study Area	No	None required	No

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
34	Terrestrial Crayfish	- Meadow marsh, shallow marsh, swamp thicket, deciduous swamp and mixed swamp communities - Cultural meadow with inclusions of meadow marsh may be used - Wet edges of marshes and wet meadows should be surveyed for crayfish	- Presence of 1 or more individuals of listed species or their chimneys in suitable habitat	Area of ELC ecosite or Eco element area of meadow marsh or swamp within the larger ecosite area is the SWH	No habitat matching criteria identified in Study Area	No	Incidental observation during ELC conducted	No
35	Special Concern & Rare Wildlife Species	- All Special concern and Provincially Rare plant and animal species - Where an element occurrence is identified within a 1 or 10km grid for a species listed, linking candidate habitat on the site must be completed to ELC ecosites	- Assessment/inventory of site for identified special concern or rare species completed during time of year when species is present or easily identifiable - Habitat must be easily mapped and cover an important life stage component (specific nesting habitat, foraging)	SWH is the finest ELC scale that protects the form and function of the habitat	No element occurrences for Special Concern or rare Wildlife Species identified within 1km of the study area Background Atlas review identified 10 Special concern species within 10km of the Study Area - Monarch (OBA, iNat) - Yellow-banded Bumble Bee (MECP) - Snapping Turtle (ORAA, NHIC, iNat) - Midland Painted Turtle (ORAA, NHIC, iNat) - Milksnake (ORAA) - Red-headed Woodpecker (OBBA) - Eastern Wood-pewee (OBBA) - Wood Thrush (OBBA, eBird) - Bald Eagle (MECP) - Short-eared Owl (MECP)	Yes-Woodlands on site and within 120m may provide habitat for Eastern-Wood-pewee, forb meadow provides habitat for Monarch and Yellow-banded Bumble Bee	Two season botanical survey, incidental wildlife	Yes-Monarch and Milkweed observed in forb meadow.
ANIMAL MOVEMENT CORRIDORS								

#	SIGNIFICANT WILDLIFE HABITAT (SWH)	CANDIDATE SWH CRITERIA	CRITERIA FOR SWH CONFIRMATION	SWH PROTECTED AREA	SITE ASSESSMENT DETAILS	CANDIDATE SWH	FIELD STUDIES REQUIRED/ COMPLETED	CONFIRMED SWH
36	Amphibian Movement Corridor	- Corridors may occur in all ecosites associated with water - Presence of significant amphibian breeding indicates the requirement for identifying corridors - Movement corridors between breeding habitat and summer habitat	- Corridors typically include areas with native vegetation, with several layers of vegetation, unbroken by roads, waterways or waterbodies are most significant - At least 15 of vegetation on both sides of the waterway or up to 200m wide of woodland habitat with gaps of <20m - Shorter corridors are more significant than longer, but amphibians must be able to get to and from their summer breeding habitat	Corridor is the SWH	No habitat matching criteria identified in Study Area	No	None required	No
37	Deer Movement Corridor	- May occur in all forested ecosites - Determined when deer wintering habitat is confirmed as SWH	- Corridors at least 200m wide with gaps <20m leading to wintering habitat - Unbroken by roads and residential areas - Shorter corridors are more significant	Corridor is the SWH	No habitat matching criteria identified in Study Area	No	None required	No

APPENDIX 7
Species at Risk Habitat Assessment

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Amphibians										
Jefferson Salamander	*Ambystoma jeffersonianum*	END	END	S2	MNRF Species Occurrence Mapping	Adults are found within upland deciduous or mixed forest habitat with suitable breeding ponds, such as kettle ponds, natural basins and limestone sink holes, which can be permanent or ephemeral, and include appropriate egg attachment sites and lack of predatory fish (COSEWIC 2010).	No habitat matching criteria identified in Study Area	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2010. COSEWIC assessment and status report on the Jefferson Salamander *Ambystoma jeffersonianum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 38 pp.
Unisexual Ambystoma, Jefferson dependent population	*'Ambystoma laterale - (2) jeffersonianum*	END	END	S2	MNRF Species Occurrence Mapping	Unisexual ambystoma share the same habitat requirements as Jefferson salamander, as they rely on Jefferson salamander for sperm donation in order to breed (COSEWIC 2016).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2016. COSEWIC assessment and status report on the unisexual Ambystoma, Ambystoma laterale, Small-mouthed Salamander–dependent population, Jefferson Salamander–dependent population and the Blue-spotted Salamander–dependent population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxii + 61 pp.
Western Chorus Frog – Great Lakes / St. Lawrence - Canadian Shield Population	*Pseudacris triseriata pop. 2*	NAR	THR	S4	MNRF Species Occurrence Mapping	Generally found in lowland communities, such as swamps, inhabiting lowland shrubs and grasses in the community, near breeding habitat. Breeding occurs in lowland, ephemeral ponds, devoid of predatory fish species (COSEWIC 2008a)	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2008. COSEWIC assessment and update status report on the Western Chorus Frog Pseudacris triseriata Carolinian population and Great Lakes/St. Lawrence – Canadian Shield population in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.
Butterflies, Bees, Damselflies, Dragonflies & Insects										
Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	END	END	S1S2	MECP communication	Occurs in diverse habitats, including open meadows, mixed farmlands, urban areas, boreal forest and montane meadows. Feed on pollen and nectar from a variety of plant genera (COSEWIC 2014)	The Forb Meadow and residential areas within the Study Area may provide suitable habitat.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2014. COSEWIC assessment and status report on the Gypsy Cuckoo Bumble *Bombus bohemicus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 56 pp.
Monarch	*Danaus plexippus*	SC	SC	S2N, S4B	OBA (2021), iNat (2021), MNRF Species Occurrence Mapping	Requires milkweed for larval feeding, other wildflower species are also important for adult feeding when milkweed is not in flower; often found in abandoned farmland, along roadsides, and other open spaces (COSEWIC 2010b)	The Forb Meadow within the Study Area may provide suitable habitat, with milkweed being present.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	Adult observed during ELC investigations.	COSEWIC. 2010. COSEWIC assessment and status report on the Monarch Danaus plexippus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp.
Nine-spotted Lady Beetle	*Coccinella novemnotata*	END	END	SH	MECP communication	Habitat generalists occurring in agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, riparian areas and isolated natural areas (COSEWIC 2016)	The Forb Meadow within the Study Area may provide suitable habitat.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2016. COSEWIC assessment and status report on the Nine-spotted Lady Beetle *Coccinella novemnotata* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 57 pp.
Rusty-patched Bumble Bee	*Bombus affinis*	END	END	S1	MNRF Species Occurrence Mapping	Uses a variety of open or semi-open habitat, including meadows, agricultural land and savannah habitat for foraging. Nests are often found underground, in old rodent burrows (COSEWIC 2010c).	The Forb Meadow within the Study Area may provide suitable habitat.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2010. COSEWIC assessment and status report on the Rusty-patched Bumble Bee Bombus affinis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 34 pp.
West Virginia White	*Pieris virginenisis*	SC	NAR	S3	MNRF Species Occurrence Mapping	Found in rich deciduous and mixed forests and swamps with a poorly vegetated shrub layer. The larvae feed only on the leaves of a few host plants, including the Two-leaved Toothwort (*Cardamine diphylla*) and cut-leaved toothwort (Burke 2013).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	Peter S. Burke. 2013. Management Plan for the West Virginia White (Pieris virginiensis) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. v + 44 pp.

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Yellow-banded Bumble Bee	*Bombus terricola*	SC	SC	S3S5	MECP communication, MNRF Species Occurrence Mapping	Occur in a diverse range of habitat, including mixed woodlands, farmlands, urban areas, montane meadows, prairie grasslands and boreal habitats. Queens overwinter underground and in decomposing organic material such as rotting lots (COSEWIC 2015)	The Forb Meadow and adjacent wooded communities may provide suitable habitat.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2015. COSEWIC assessment and status report on the Yellow-banded Bumble Bee *Bombus terricola* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 60 pp. *rank considered out of date
Birds										
Bank Swallow	*Riparia riparia*	SC	THR	S4B	OBBA, MNRF Species Occurrence Mapping	Breeds in a variety of natural and artificial bank type habitat, such as bluffs, stream and river banks, sand and gravel pits, piles of sand, topsoil and other material. Nests are typically in vertical or near-vertical surfaces (COSEWIC 2013b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2013. COSEWIC assessment and status report on the Bank Swallow Riparia riparia in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 48 pp.
Barn Swallow	*Hirundo rustica*	THR	THR	S5B	OBBA, MNRF Species Occurrence Mapping	Occurs in farmland, along lake/river shorelines, in wooded clearings and in urban populated areas. Nesting may occur inside or outside buildings; under bridges and in road culverts (COSEWIC 2011a).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2011. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.
Bobolink	*Dolichonyx oryzivorus*	THR	THR	S4B	OBBA, NHIC, MNRF Species Occurrence Mapping	Nest in grassland habitats, including hayfields and meadows with a mixture of grasses and broad-leaved forbs with a high litter cover. Area Sensitive, with increased density in grasslands greater than 10ha (Renfrew et. al. 2015)	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	Renfrew, R., A.M. Strong, N.G. Perlut, S.G. Martin and T.A. Gavin. 2015. Bobolink (Dolichonyx oryzivorus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Birds of North America Online: http://bna.birds.cornell.edu/bna/species/176
Canada Warbler	*Wilsonia canadensis*	SC	THR	S4B	MNRF Species Occurrence Mapping	Prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer (COSEWIC 2008b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2008. COSEWIC assessment and status report on the Canada Warbler Wilsonia Canadensis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
Cerulean Warbler	*Setophaga cerulea*	THR	END	S3B	MNRF Species Occurrence Mapping	Occur in older, mature, deciduous forests, preferentially oak-maple composition, with a full, to partially open canopy, and little to no understory cover. Often in bottomland forests, or adjacent to treed swamplands (COSEWIC 2010f).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2010. COSEWIC assessment and status report on the Cerulean Warbler Dendroica cerulea in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.
Chimney Swift	*Chaetura pelagica*	THR	THR	S4B, S4N	eBird (2020), OBBA, MNRF Species Occurrence Mapping	Typically nests in traditional chimneys of older buildings, which also provide roosting sites for many individuals during spring and fall migration (MNRF 2013).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	MNRF, 2013. General Habitat Description for the Chimney Swift *(Chaeture pelagica)*. Ontario Ministry of Natural Resources and Forestry. July 2, 2013.
Common Nighthawk	*Chordeiles minor*	SC	THR	S4B	MNRF Species Occurrence Mapping	Breeds in open habitat, on the ground, in areas with no vegetation, including sand dunes, burned areas, open forests, railways, and gravel rooftops. Eggs are laid directly on the ground (COSEWIC 2007b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2007. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 25 pp.
Eastern Meadowlark	*Sturnella magna*	THR	THR	S4B	eBird (2019), OBBA, NHIC, MNRF Species Occurrence Mapping	Nest in grassland habitats, including hayfields, pasture, savannahs, and other open areas. Preferential habitat includes areas with good grass and thatch (litter) cover (Jaster et. al. 2012).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	Jaster, Levi A., William E. Jensen and Wesley E. Lanyon. (2012). Eastern Meadowlark (*Sturnella magna*), The Birds of North America (P. G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America: https://birdsna.org/Species-Account/bna/species/easmea

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Eastern Whip-poor-will	*Caprimulgus vociferus*	THR	THR	S4B	MNRF Species Occurrence Mapping	Often found breeding in semi-open habitats, with little ground cover, and canopy openings allowing light to penetrate the forest floor, often associated with pine or oak, savannahs and barrens, early-successional poplar stands and open conifer plantations (COSEWIC 2009a)	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2009. COSEWIC assessment and status report on the Whip-poor-will Caprimulgus vociferus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 28 pp.
Eastern Wood-pewee	*Contopus virens*	SC	SC	S4B	OBBA, MNRF Species Occurrence Mapping	Associated with mid-age mixed and deciduous forest stands, often dominated by Maple (Acer), Elm (Ulmus) or Oak (Quercus), and include areas with clear-cuts, openings or forest edges. Also prefers forest stands with little to no understory vegetation (COSEWIC 2012a).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2012. COSEWIC assessment and status report on the Eastern Wood-pewee Contopus virens in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).
Evening Grosbeak	*Coccothraustes vespertinus*	SC	SC	S4B	MNRF Species Occurrence Mapping	Breeding habitat includes open, mature mixedwood forests, where fir species and/or White Spruce are dominant, and Spruce Budworm is abundant (COSEWIC 2016)	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2016. COSEWIC assessment and status report on the Evening Grosbeak *Coccothraustes vespertinus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 64 pp.
Grasshopper Sparrow	*Ammodramus savannarum*	SC	SC	S4B	MNRF Species Occurrence Mapping	Prefers moderately open grasslands and prairies with patchy bare ground; avoids grasslands with extensive shrub cover (Vickery 1996).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	Vickery, Peter D. 1996. Grasshopper Sparrow (*Ammodramus savannarum*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/239\
Henslow's Sparrow	*Ammodramus henslowii*	END	END	SHB	MNRF Species Occurrence Mapping	Breeds in grassland habitat, and is area sensitive. Grasslands with tall, dense cover a thick thatch layer, and are greater than 30ha, but preferentially larger than 100ha are preferred (COSEWIC 2011b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2011. COSEWIC assessment and status report on the Henslow's Sparrow *Ammodramus henslowii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 37 pp.
Least Bittern	*Ixobrychus exilis*	THR	THR	S4B	MNRF Species Occurrence Mapping	Breeds in large marshes (>5ha) with emergent vegetation, typically cattails, with at least 50% open water, and relatively stable water levels (COSEWIC 2009b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2009. COSEWIC assessment and update status report on the Least Bittern Ixobrychus exilis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 36 pp.
Loggerhead Shrike	*Lanius ludovicianus*	END	END	S2B	MNRF Species Occurrence Mapping	Nests in open, low, grassy habitat with scattered shrubs. Presence of thorny shrubs, such as hawthorn, or barbwire fencing required for impaling prey. Only two recent areas of breeding in the province (Carden Plain and Napanee Plain) (Environment Canada 2015).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	Environment Canada. 2015. Recovery Strategy for the Loggerhead Shrike, migrans subspecies (Lanius ludovicianus migrans), in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. vii + 35 pp.
Louisiana Waterthrush	*Seirus motacilla*	SC	THR	S3B	MNRF Species Occurrence Mapping	Nests along headwater streams and associated wetlands which occur within large tracts of mature forest especially mixed wood forests with a component of hemlock. Nests are located in stream bank niches, under mossy logs, and within the roots of fallen trees (COSEWIC 2006b)	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2006. COSEWIC assessment and update status report on the Louisiana Waterthrush Seiurus motacilla in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 26 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
Olive-sided Flycatcher	*Contopus cooperi*	SC	THR	S4B	MNRF Species Occurrence Mapping	Associated with natural forest openings (usually conifer or mixed), and edges of forests adjacent wetlands or watercourses, will also use open and semi-open forests and clear-cuts. Presence of tall snags and residual live trees required for nesting and foraging (COSEWIC 2007c).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2007. COSEWIC assessment and status report on the Olive-sided Flycatcher Contopus cooperi in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 25 pp.

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Prothonotary Warbler	*Protonotaria citrea*	END	END	S1B	MNRF Species Occurrence Mapping	Occupies large, mature and semi-mature, deciduous swamp forest and riparian floodplains. Permanent and semi-permanent pools of open water are characteristics, and nests are typically situated over standing or slow-moving water (COSEWIC 2007)	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2007. COSEWIC assessment and update status report on the Prothonotary Warbler *Prothonotaria citrea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 31 pp.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	SC	THR	S4B	OBBA, MNRF Species Occurrence Mapping	Found in a variety of open areas, with a high density of dead or dying trees, particularly forests dominated by oak or beech (COSEWIC 2007d).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2007. COSEWIC assessment and update status report on the Red-headed Woodpecker *Melanerpes erythrocephalus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp.
Short-eared Owl	*Asio flammeus*	SC	SC	S2N, S4B	MECP, MNRF Species Occurrence Mapping	Breeds in open habitats, including grasslands, old pasture marshes, bogs, and sand-sage. Nests are scrapes, located on the ground (COSEWIC 2008c).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2008. COSEWIC assessment and update status report on the Short-eared Owl Asio flammeus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp.
Wood Thrush	*Hylocichla mustelina*	SC	THR	S4B	eBird (2019), OBBA, MNRF Species Occurrence Mapping	Prefers second growth moist deciduous forests, with tall trees, and a dense understory of low saplings and an open forest floor with decaying leaf litter. Often nests in saplings, shrubs or occasionally dead stumps (COSEWIC 2012b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2012. COSEWIC assessment and status report on the Wood Thrush Hylocichla mustelina in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.
Yellow-breasted Chat	*Icteria virens*	END	END	S1B	MNRF Species Occurrence Mapping	Shrub specialist, nesting in early successional, dense, low-shrub habitat, including old fields, hydro-cutovers and forest edges experiencing regeneration (COSEWIC 2011c).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2011. COSEWIC assessment and status report on the Yellow-breasted Chat auricollis subspecies Icteria virens auricollis and the Yellow-breasted Chat virens subspecies Icteria virens virens in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xvi + 51 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).
Mammals										
Eastern Small-footed Myotis	*Myotis leibii*	END	NA	S2S3	MNRF Species Occurrence Mapping	Associated with hilly or mountainous terrain, in or near coniferous or deciduous forest habitat. Maternity roosts located in cracks and crevices of talus slopes and rocky outcrops, or, occasionally in bridges, old buildings, hollow trees (or loose bark) and caves and mines during the maternity season. Hibernate singly or in small clusters in mines and caves (NatureServe, 2015).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during bat maternity habitat, ELC and Vegetation Surveys.	None observed.	COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown Myotis Myotis lucifugus, Northern Myotis Myotis septentrionalis and Tri-colored Bat Perimyotis subflavus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).
Little Brown Myotis	*Myotis lucifugus*	END	END	S3	OMA, MNRF Species Occurrence Mapping	Hibernate in Caves; maternity colonies located in warm sites, often associated with human habitation; including attics, old buildings, under bridges, rock crevices and cavities in canopy trees in wooded areas (COSEWIC, 2013c).	Five candidate trees of poor quality and not in appropriate ecosites identified.	The Study Area was investigated for habitat during bat maternity habitat, ELC and Vegetation Surveys.	None observed.	COSEWIC. 2013a COSEWIC assessment and status report on the Little Brown Myotis Myotis lucifugus, Northern Myotis Myotis septentrionalis and Tri-colored Bat Perimyotis subflavus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).
Northern Myotis	*Myotis septentrionalis*	END	END	S3	MNRF Species Occurrence Mapping	Hibernate in Caves; maternity colonies usually located in trees, and are closely associated with specific tree characteristics and density of suitable trees. Characterized by tall, large diameter trees in early stages of decay, located in openings in mature forest canopies (COSEWIC, 2013c).	Five candidate trees of poor quality and not in appropriate ecosites identified.	The Study Area was investigated for habitat during bat maternity habitat, ELC and Vegetation Surveys.	None observed.	COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown Myotis Myotis lucifugus, Northern Myotis Myotis septentrionalis and Tri-colored Bat Perimyotis subflavus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Tri-colored Bat	*Perimyotis subflavus*	END	END	S3?	MNRF Species Occurrence Mapping	Hibernate in caves, abandoned mines, wells and tunnels. Summer roosts include clumps of dead foliage and lichens, typically found in forested habitat close to water sources. May also use anthropogenic structures such as barns for maternity roosts. Foraging habitat includes forested riparian areas over water in relatively open areas (Environment Canada.2015).	Five candidate trees of poor quality and not in appropriate ecosites identified.	The Study Area was investigated for habitat during bat maternity habitat, ELC and Vegetation Surveys.	None observed.	Environment Canada. 2015. Recovery Strategy for Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis), and Tri-colored Bat (Perimyotis subflavus) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. ix + 110 pp
Reptiles										
Blanding's Turtle	*Emydoidea blandingii*	THR	THR	S3	ORAA (2015), MNRF Species Occurrence Mapping	Use a variety of eutrophic wetland habitat types, including lakes, ponds, watercourses, marshes, man-made channels, farm fields, coastal areas and bays. Seasonal overland terrestrial movements up to 2.5 km occur to reach nesting and overwintering areas, generally through wooded coniferous or mixed forest habitat. Nests are usually laid in loose sand or organic soil (COSEWIC 2005b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2005. COSEWIC assessment and update status report on the Blanding's Turtle Emydoidea blandingii in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
Midland Painted Turtle	*Chrysemys picta marginata*	NAR	SC	S4	ORAA (2019), NHIC, iNat (2020)	Occupy slow moving, relatively shallow and well-vegetated wetlands and water bodies with abundant basking sites and organic substrate. Found in association with submergent aquatic plants, which are used for cover and feeding. Semi -tolerant of human-altered landscapes, occasionally found occupying urban ponds and lands subject to anthropogenic disturbance. Suitable nesting habitat includes open, often south-facing, and sloped areas with sandy-loamy and/or gravel substrate usually within 1200 m of aquatic active season habitats. Overwinter in shallow water with deep sediment (COSEWIC 2018).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2018. COSEWIC assessment and status report on the Midland Painted Turtle Chrysemys picta marginata and the Eastern Painted Turtle Chrysemys picta picta in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xvi + 107 pp.
Northern Map Turtle	*Graptemys geographica*	SC	SC	S3	MNRF Species Occurrence Mapping	Highly aquatic species, found in deep, large waterbodies, including Lakes and large rivers, with abundant basking sites. Emerge onto land only during nesting, which occurs in soft sand or soil. Waterbodies with slow currents, soft mud bottoms and abundant aquatic vegetation are preferred (COSEWIC, 2002b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2002. COSEWIC assessment and status report on the northern map turtle Graptemys geographica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 34 pp.
Snapping Turtle	*Chelydra serpentina*	SC	SC	S4	ORAA (2018), NHIC, iNat (2022), MNRF Species Occurrence Mapping	Inhabit slow-moving waters with soft, muck bottom and dense aquatic vegetation. Ponds, sloughs and shallow bays are all often used as summering and overwintering habitat (COSEWIC 2008d).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle Chelydra serpentina in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
Spotted Turtle	*Clemmys guttata*	END	END	S2	MNRF Species Occurrence Mapping	Found in wetlands with high organic content, including bogs, fens, marshes, woodland streams, sedge meadows, and shallow bays. Only one population is known from Wellington County, in Luther Marsh. Preferential to unpolluted shallow water with aquatic vegetation and soft substrates. Presence of Sphagnum moss, sedge tussocks, cattails and water lilies, may be important to Canadian populations (COSEWIC, 2002b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2004. COSEWIC assessment and update status report on the spotted turtle Clemmys guttata in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Butler's Gartersnake	*Thamnophis butleri*	END	END	S2	MNRF Species Occurrence Mapping	Occupies open areas with dense grass and thatch cover, including tall grass prairie, old fields, abandoned sites in urban areas, drainage swales and seasonally dry marshes. only one population is known from Wellington County, in Luther Marsh. Artificial cover features such as plywood, concrete, shingles, metal sheets etc., increases probability of encounters, but is not essential (COSEWIC, 2010h).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2010. COSEWIC assessment and status report on the Butler's Gartersnake Thamnophis butler in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 51 pp.
Eastern Ribbonsnake	*Thamnophis sauritus*	SC	SC	S4	MNRF Species Occurrence Mapping	A semi-aquatic species that inhabits dense, low- vegetation, edges of ponds, streams, marshes, fens and bogs, with open sunlit areas for basking (COSEWIC 2002c).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC 2002. COSEWIC assessment and status report on the eastern ribbonsnake Thamnophis sauritus. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp.
Milksnake	*Lampropeltis triangulum*	NAR	SC	S4	ORAA (2019) MNRF Species Occurrence Mapping	Habitat generalists often associated with edge habitat, meadows, prairies, pastures, rocky outcrops and human disturbances such as hydro corridors and railway embankments. Habitat is usually close to a water source. Hibernation occurs in a variety of natural and man-made features, including rotting logs, old foundations, basements and burrows (COSEWIC 2014).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2014. COSEWIC assessment and status report on the Eastern Milksnake Lampropeltis triangulum in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 61 pp.
Massassauga Rattlesnake	*Sistrurus catenatus*	SC	THR	S3	MNRF Species Occurrence Mapping	Only historic observations of Massasauga in the north western portion of Wellington County. Found in wet prairies, old fields, peatlands, rock barrens and coniferous forests, with open-areas, and areas of dense shrub cover. Hibernate in damp areas below the frost line (COSEWIC, 2012b).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys. No further studies required.	None observed.	COSEWIC. 2012. COSEWIC assessment and status report on the Massasauga Sistrurus catenatus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 84 pp.
Vascular Plants										
American Ginseng	*Panax quinquefolius*	END	END	S2	MNRF Species Occurrence Mapping	Occur in moist, rich, undisturbed, mature Sugar Maple dominated deciduous woodlands. Often, colonies are located at the bottom of south facing slopes (COSEWIC, 2000).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys, and during the field work for the Tree Preservation Plan. No further studies required.	None observed.	COSEWIC 2000. COSEWIC assessment and update status report on the American ginseng Panax quinquefolius in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 17 pp.
Butternut	*Juglans cinerea*	END	END	S2?	MNRF Species Occurrence Mapping	Occur in rich moist sites, that are well-drained, often found along stream banks or gravelly sites. Butternut is shade intolerant (COSEWIC, 2003b).	The wooded communities within the Study Area may provide suitable habitat, but no individuals were observed during field work.	The Study Area was investigated for habitat during ELC and Vegetation Surveys, and during the field work for the Tree Preservation Plan. No further studies required.	None observed.	COSEWIC 2003. COSEWIC assessment and status report on the butternut Juglans cinerea in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 32 pp. (www.sararegistry.gc.ca/status/status_e.cfm)
Hill's Pondweed	*Potamogeton hillii*	SC	SC	S2S3	MNRF Species Occurrence Mapping	Occur in cold clear calcareous streams, ponds and ditches, which are alkaline in nature (COSEWIC 2005c).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys, and during the field work for the Tree Preservation Plan. No further studies required.	None observed.	COSEWIC 2005c COSEWIC assessment and update status report on the Hill's pondweed Potamogeton hillii in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 19 pp.

COMMON NAME	SCIENTIFIC NAME	SARO	COSEWIC	S-RANK	BACKGROUND SOURCES	HABITAT REQUIREMENTS	SUITABLE HABITAT IN STUDY AREA	FIELD STUDIES COMPLETED/ REQUIRED	OBSERVED BY A & A	REFERENCE
Tuberous Indian Plantain	*Arnoglossum plantagineum*	SC	SC	S2	MNRF Species Occurrence Mapping	Habitat includes open, sunny areas in wet calcareous soils, including wet meadows and shoreline fens (COSEWIC 2002).	No habitat matching criteria identified in Study Area.	The Study Area was investigated for habitat during ELC and Vegetation Surveys, and during the field work for the Tree Preservation Plan. No further studies required.	None observed.	COSEWIC 2002. COSEWIC assessment and update status report on the tuberous Indian-plantain Arnoglossum plantagineum in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 11 pp.

References:

Cadman, M.D.,D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. The Atlas of the Breeding Birds Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto,xxii + 706pp. (Available online here: http://www.birdsontario.org/atlas/datasummaries.jsp)

Colin Jones, Ross Layberry, and Alan Macnaughton. Ontario Butterfly Atlas Online. (April 30, 2015). (Available online here: Toronto Entomologists' Association: http://www.ontarioinsects.org/atlas_online.htm)

Cornell Lab of Ornithology. 2021. eBird. (Available online: https://www.ebird.org/home)

Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Altona Manitoba, Canada. (available online here: http://www.ontarionature.org/discover/resources/publications.php)

iNaturalist. 2021. (Available online: https://www.inaturalist.org)

MNRF, 2021. Species Occurrence Mapping (Available online: https://www.ontario.ca/page/species-risk-ontario)

NHIC, 2021. MNRF Make a map: Natural Heritage Areas. (Available online: http://www.ontario.ca/environment-and-energy/make-natural-heritage-area-map)

Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. (Available online here: http://www.ontarionature.org/atlas).

APPENDIX 8
Background Wildlife List

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
INSECTS															
MECP	Nine-spotted Lady Beetle	*Coccinella novemnotata*	END	END	END	NA	No Schedule	S1	G2	N2					
iNat (2020)	Asian Lady Beetle	*Harmonia axyridis*						SNA		NNA					
iNat (2022)	Common Red Soldier Beetle	*Rhagonycha fulva*						SNA		NNA					
iNat (2021)	Eastern Calligrapher	*Toxomerus geminatus*						S5		N5					
iNat (2019)	European Mantis	*Mantis religiosa*						SNA		NNA					
iNat (2022)	Japanese Beetle	*Popillia japonica*						SNA		NNA					
iNat (2021)	Milkweed Leaf Beetle	*Labidomera clivicollis*						S4S5		N5					
iNat (2022)	N/A	*Eupeodes americanus*						S4S5		N5					
iNat (2021)	Red Milkweed Beetle	*Tetraopes tetrophthalmus*						S5		N5					
iNat (2021)	Red-banded Leafhopper	*Graphocephala coccinea*						SNR		NNR					
iNat (2021)	Scarlet Malachite Beetle	*Malachius aeneus*						SNA		NNA					
iNat (2021)	Seven-spotted Lady Beetle	*Coccinella septempunctata*						SNA		NNA					
iNat (2021)	Spotted Calligraphy Leaf Beetle	*Calligrapha multipunctata*						S4S5		N5					
iNat (2022)	Dogwood Spittle Bug	*Clastoptera proteus*						S5		N5					
iNat (2021)	Elm Borer	*Saperda tridentata*						S5		N5					
iNat (2021)	Golden Tortoise Beetle	*Charidotella sexpunctata*						S4S5		N5					
iNat (2021)	Goldenrod Leaf Beetle	*Trirhabda canadensis*						S4S5		N5					
iNat (2021)	Green Immigrant Leaf Weevil	*Polydrusus formosus*						SNA		NNA					
iNat (2021)	Imported Long-horned Weevil	*Calomycterus setarius*						SNA		NNA					
iNat (2022)	One-banded Mason Wasp	*Ancistrocerus unifasciatus*						S3		NU					
iNat (2020)	Scooped Scarab	*Onthophagus hecate*						S4S5		N5					
iNat (2022)	Tomentose Burying Beetle	*Nicrophorus tomentosus*						S4S5		N5					
iNat (2021)	Woodbine Borer	*Saperda puncticollis*						S4		N4N5					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
iNat (2021)	N/A	*Elater abruptus*						SU		N4N5					
iNat (2021)	N/A	*Odontocorynus salebrosus*						SU		N4N5					
BEES															
iNat (2019)	Two-spotted Bumble Bee	*Bombus bimaculatus*						S5		N5					
iNat (2022)	Common Eastern Bumble Bee	*Bombus impatiens*						S5		N5					
MECP	Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	END	END	END	END	Schedule 1	S1S2	GH	N1					
MECP	Yellow-banded Bumble Bee	*Bombus terricola*	SC	SC	SC	SC	Schedule 1	S3S4	G2G4	N4?					
BUTTERFLIES & MOTHS															
OBA (1980)	Arctic Skipper	*Carterocephalus palaemon*						S5	G5	N5					
OBA (2020)	Least Skipper	*Ancyloxypha numitor*						S5	G5	N5					
OBA (1980)	European Skipper	*Thymelicus lineola*						SNA	G5	NNA					
OBA (2021)	Dun Skipper	*Euphyes vestris*						S5	G5	N5					
iNat (2020), OBA (2020)	Black Swallowtail	*Papilio polyxenes*						S5	G5	N5					
OBA (2020)	Giant Swallowtail	*Papilio cresphontes*						S4	G5	N4					✓
OBA (2021)	Eastern Tiger Swallowtail	*Papilio glaucus*						S5	G5	N4					
iNat (2021), OBA (2021)	Cabbage White	*Pieris rapae*						SNA	G5	NNA					
OBA (2020)	Clouded Sulphur	*Colias philodice*						S5	G5	N5					
OBA (1975)	Orange Sulphur	*Colias eurytheme*						S5	G5	N5B,N5M					
OBA (1987)	Little Yellow	*Pyrisitia lisa*						SNA	G5	NNA					
iNat (2021), OBA (2021)	Acadian Hairstreak	*Satyrium acadica*						S4	G5	N5					
OBA (1963)	Banded Hairstreak	*Satyrium calanus*						S4	G5	N4N5					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
OBA (2020)	Great Spangled Fritillary	*Speyeria cybele*						S5	G5	N5					
OBA (2021)	Northern Crescent	*Phyciodes cocyta*						S5	G5	N5					
OBA (2020)	Eastern Comma	*Polygonia comma*						S5	G5	N5					
OBA (2021)	Compton Tortoiseshell	*Nymphalis l-album*						S5	G5	N5					
iNat (2021), OBA (2021)	Mourning Cloak	*Nymphalis antiopa*						S5	G5	N5					
OBA (2019)	Red Admiral	*Vanessa atalanta*						S5B	G5	N5B,N5M					
OBA (2020)	White Admiral	*Limenitis arthemis arthemis*						S5	G5T5	N5					
OBA (2021)	Viceroy	*Limenitis archippus*						S5	G5	N5					
OBA (2021)	Northern Pearly-Eye	*Enodia anthedon*						S5	G5	N5					
OBA (1980)	Eyed Brown	*Lethe eurydice*						S5	G4	N5					
OBA (1980)	Little Wood-Satyr	*Megisto cymela*						S5	G5	N5					
OBA (2021)	Common Ringlet	*Coenonympha tullia*						S5	G5	N5					
iNat (2021), OBA (2020)	Common Wood-Nymph	*Cercyonis pegala*						S5	G5	N5					
iNat (2021), OBA (2021)	Monarch	*Danaus plexippus*	SC	SC	END	SC	Schedule 1	S2N,S4B	G5	N3B,NNRM					
iNat (2022)	Virginia Ctenucha	*Ctenucha virginica*						S5	G5	N5					
iNat (2020)	White-marked Tussock Moth	*Orgyia leucostigma*						S5	G5	N4N5					
iNat (2021)	Woody Underwing	*Catocala grynea*						S4	G5	N4					
iNat (2021)	Painted Lichen Moth	*Hypoprepia fucosa*						S5?	G5	N4N5					
iNat (2021)	Bristly Cutworm Moth	*Lacinipolia renigera*						S5	G5	N5					
iNat (2019)	Virginian Tiger Moth	*Spilosoma virginica*						S5	G5	N5					
iNat (2022)	Yellow-headed Cutworm Moth	*Apamea amputatrix*						S5	G5	N5					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
iNat (2021)	Spongy Moth	*Lymantria dispar*						SNA	G5	NNA					
iNat (2022)	The Herald	*Scoliopteryx libatrix*						S5	G5	N5					
iNat (2021)	Forest Tent Caterpillar Moth	*Malacosoma disstria*						S5	G5	N5					
iNat (2021)	Blind-eye Sphinx	*Paonias excaecatus*						S5	G5	N5					
iNat (2022)	Small-eyed Sphinx	*Paonias myops*						S5	G5	N5					
iNat (2022)	Elm Spanworm Moth	*Ennomos subsignaria*						S4S5	G5	N4N5					
iNat (2021)	Eastern Tent Caterpillar Moth	*Malacosoma americanum*						S5	G5	N5					
iNat (2022)	Johnson's Euchlaena	*Euchlaena johnsonaria*						S4	G5	N5					
iNat (2022)	Lettered Sphinx	*Deidamia inscripta*						S4S5	G5	N5					
iNat (2022)	Crocus Geometer	*Xanthotype sospeta*						S5?	GNR	N5					
iNat (2022)	Carolina Sphinx	*Manduca sexta*						S2		N2					
iNat (2020)	Cecropia Moth	*Hyalophora cecropia*						S4S5		N5					
iNat (2019)	Large Yellow Underwing	*Noctua pronuba*						SNA		NNA					
iNat (2021)	Red-fringed Emerald	*Nemoria bistriaria*						S4S5		N4N5					
iNat (2019)	Squash Vine Borer Moth	*Melittia cucurbitae*						S4S5		NNR					
iNat (2021)	Yellow-collared Scape Moth	*Cisseps fulvicollis*						S5		N5					
iNat (2020)	Betrothed Underwing	*Catocala innubens*						S3		NU					
iNat (2022)	Common Lytrosis Moth	*Lytrosis unitaria*						S4		N4N5					
iNat (2021)	Little Underwing	*Catocala minuta*						S3		N3					
iNat (2021)	Rose Plume Moth	*Cnaemidophorus rhododactyla*						SNA		NNR					
iNat (2022)	Scallop Moth	*Cepphis armataria*						S4?		N4N5					
iNat (2022)	Spotted Grass Moth	*Rivula propinqualis*						S5		N5					
DRAGONLIES & DAMSELFLIES															

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
iNat (2021)	Dot-tailed Whiteface	*Leucorrhinia intacta*						S5	G5	N5					
iNat (2020)	White-faced Meadowhawk	*Sympetrum obtrusum*						S5	G5	N5					
iNat (2019)	Shadow Darner	*Aeshna umbrosa*						S5	G5	N5					
SLUGS AND SNAILS															
iNat (2020)	Brown-lipped Snail	*Cepaea nemoralis*						SNA		NNA					
ARACHNIDS															
iNat (2021)	Yellow Garden Spider	*Argiope aurantia*						S5		N5					
iNat (2021)	Bold Jumping Spider	*Phidippus audax*						SU		NU					
iNat (2022)	Cross Orbweaver	*Araneus diadematus*						SNA		NNA					
iNat (2022)	Zebra Jumping Spider	*Salticus scenicus*						SNA		NNA					
iNat (2021)	Polymorphic Long-jawed Cobweaver	*Enoplognatha ovata*						SNA		NNA					
iNat (2021)	Checkered False Black Widow Spider	*Steatoda triangulosa*						SNA		NNA					
AMPHIBANS															
ORAA (2018)	Eastern Red-backed Salamander	*Plethodon cinereus*						S5	G5	N5					
ORAA (2017)	Mudpuppy	*Necturus maculosus*		NAR	NAR			S4	G5	N4N5					✓
ORAA (2015)	Red-spotted Newt	*Notophthalmus viridescens viridescens*						S5	G5	N5					✓
ORAA (2009)	American Toad	*Anaxyrus americanus*						S5	G5	N5					
iNat (2019), ORAA (2009)	Gray Treefrog	*Hyla versicolor*						S5	G5	N5					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
iNat (2019), ORAA (2011)	Spring Peeper	*Pseudacris crucifer*						S5	G5	N5					
ORAA (1982)	American Bullfrog	*Lithobates catesbeianus*						S4	G5	N5	✓				✓
ORAA (2018)	Green Frog	*Lithobates clamitans*						S5	G5	N5					
iNat (2020), ORAA (2009)	Northern Leopard Frog	*Lithobates pipiens*		NAR	NAR			S5	G5	N5					
ORAA (2009)	Wood Frog	*Lithobates sylvaticus*						S5	G5	N5					
SNAKES & LIZARDS															
ORAA (2013)	Ring-necked Snake	*Diadophis punctatus*						S4	G5T5	N5					
ORAA (2019)	Milksnake	*Lampropeltis triangulum*	NAR	NAR	SC	SC	Schedule 1	S4	G5T5	N3					✓
ORAA (2018)	Northern Red-bellied Snake	*Storeria occipitomaculata occipitomaculata*						S5	G5	N5					✓
iNat (2021), ORAA (2017)	Eastern Gartersnake	*Thamnophis sirtalis sirtalis*						S5	G5T5	N5					
ORAA (2018)	Smooth Greensnake	*Opheodrys vernalis*						S4	G5	N5					✓
TURTLES															
NHIC, iNat (2022), ORAA (2018)	Snapping Turtle	*Chelydra serpentina*	NL	SC	SC	SC	Schedule 1	S4	G5T5	N4					
NHIC, iNat (2020), ORAA (2019)	Midland Painted Turtle	*Chrysemys picta marginata*	NAR	NAR	SC	SC	Schedule 1	S4	G5T5	N4					
ORAA (2015)	Blanding's Turtle	*Emydoidea blandingii*	THR	THR	END	END	Schedule 1	S3	G4	N3					✓

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
ORAA (1995)	Pond Slider	*Trachemys scripta*						SNA	GNR	NNA					
BIRDS															
eBird (2014)	Pied-billed Grebe	*Podilymbus podiceps*						S4B,S2N	G5	N5B,N4N5N,N5M				CP	✓
OBBA	American Bittern	*Botaurus lentiginosus*						S5B	G5	N5B,N3N,N5M	✓			CP	✓
eBird (2022), iNat (2021), OBBA	Great Blue Heron	*Ardea herodias*						S4	G5	N5B,N3N,N5M					✓
eBird (2022)	Trumpeter Swan	*Cygnus buccinator*		NAR	NAR			S4	G4	N5B,N3N,N5M					✓
iNat (2021)	Mute Swan	*Cygnus olor*						SNA	G5	NNA					
eBird (2023), iNat (2021), OBBA	Canada Goose	*Branta canadensis*						S5	G5	N5B,N5N,N5M				CP	
eBird (2018)	Cackling Goose	*Branta hutchinsii*						SUB,S4M	G5	N5B,N5N,N5M					
eBird (2020), iNat (2022)	Snow Goose	*Chen caerulescens*						S5B		N5B,N4N5N,N5M					
iNat (2022), OBBA	Wood Duck	*Aix sponsa*						S5B, S3N	G5	N5B,N4N5N,N5M					
eBird (2016)	Green-winged Teal	*Anas crecca*						S4B,S4N,S5M	G5	N5B,N5N,N5M					✓
eBird (2020)	American Black Duck	*Anas rubripes*						S4	G5	N5B,N5N,N5M				CP	✓
eBird (2023), OBBA	Mallard	*Anas platyrhynchos*						S5	G5	N5B,N5N,N5M					
OBBA	Blue-winged Teal	*Anas discors*						S3B,S4M	G5	N5B,N5M				CP	✓
eBird (2020), iNat (2022)	Northern Shoveler	*Anas clypeata*						S4B,S4N,S5M	G5	N5B,N5N,N5M					✓
eBird (2019)	American Wigeon	*Anas americana*						S4B,S4N,S5M	G5	N5B,N5N,N5M				CP	✓

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
eBird (2015)	Canvasback	*Aythya valisineria*						S1B,S3N,S4M	G5	N5B,N4N5N,N5M	✓			CP	✓
eBird (2019)	Redhead	*Aythya americana*						S2B,S4N,S4M	G5	N5B,N5N,N5M	✓				✓
eBird (2022), iNat (2022)	Ring-necked Duck	*Aythya collaris*						S5B,S4N	G5	N5B,N5N,N5M				CP	✓
eBird (2019)	Greater Scaup	*Aythya marila*						S4B,S4N,S5M	G5	N5B,N5N,N5M					
eBird (2014)	Lesser Scaup	*Aythya affinis*						S4B,S4N,S5M	G5	N5B,N5N,N5M				CP	✓
eBird (2019)	Common Goldeneye	*Bucephala clangula*						S5	G5	N5B,N5N,N5M	✓				
eBird (2022), iNat (2022)	Bufflehead	*Bucephala albeola*						S5	G5	N5B,N5N,N5M					
eBird (2019), iNat (2022), OBBA	Hooded Merganser	*Lophodytes cucullatus*						S5	G5	N5B,N5N,N5M				CP	✓
eBird (2021)	Ruddy Duck	*Oxyura jamaicensis*						S3B,S4N,S5M	G5	N5B,N5N,N5M					✓
eBird (2022), OBBA	Turkey Vulture	*Cathartes aura*						S5B, S3N	G5	N5B,N5M				CP	✓
MECP	Bald Eagle	*Haliaeetus leucocephalus*	NL	NL	NL	NL		S4	G5	N5B,N5N,N5M	✓		✓		✓
OBBA	Northern Harrier	*Circus cyaneus*		NAR	NAR			S5B,S4N	G5	N5B,N4N	✓	>30ha	✓	CP	✓
OBBA	Sharp-shinned Hawk	*Accipiter striatus*		NAR				S5	G5	N5B,N5N,N5M	✓	>30ha		CP	✓
OBBA	Cooper's Hawk	*Accipiter cooperii*		NAR	NAR			S4	G5	N5B,N5N,N4N5M	✓	>10ha		CP	✓
iNat (2022), OBBA	Red-tailed Hawk	*Buteo jamaicensis*		NAR	NAR			S5	G5	N5B,N5N,N5M					
OBBA	American Kestrel	*Falco sparverius*						S4	G5	N5B,N1N,N5M			✓	CP	✓
OBBA	Ruffed Grouse	*Bonasa umbellus*						S5	G5	N5				CP	
OBBA	Wild Turkey	*Meleagris gallopavo*						S5	G5	N5					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
OBBA	Virginia Rail	*Rallus limicola*						S4S5B	G5	N5B,NUM,N5M				CP	
OBBA	Sora	*Porzana carolina*						S5B	G5	N5B,N5M				CP	✓
eBird (2014)	American Coot	*Fulica americana*		NAR	NAR			S3B,S4N	G5	N5B,N4N5N,N5M				CP	
eBird (2021), OBBA	Killdeer	*Charadrius vociferus*						S4B	G5	N5B,N4N5N,N5M					
OBBA	Spotted Sandpiper	*Actitis macularius*						S5B	G5	N5B,N3N,N5M				CP	
OBBA	Upland Sandpiper	*Bartramia longicauda*						S2B	G5	N5B,N5M	✓	>25ha		CP	✓
OBBA	Wilson's Snipe	*Gallinago delicata*						S5B	G5	N5B,N5M				CP	
OBBA	American Woodcock	*Scolopax minor*						S4B	G5	N5B,N5M				CP	
iNat (2018)	Ring-billed Gull	*Larus delawarensis*						S5	G5	N5B,N5N,N5M					✓
eBird (2020)	Herring Gull	*Larus argentatus*						S4B,S5N	G5	N5B,N5N,N5M					✓
eBird (2022), OBBA	Rock Pigeon	*Columba livia*						SNA	G5	NNA					
eBird (2020), iNat (2022), OBBA	Mourning Dove	*Zenaida macroura*						S5	G5	N5B,N5N,N5M					
OBBA	Eastern Screech-Owl	*Megascops asio*		NAR	NAR			S4	G5	N4N5					
OBBA	Great Horned Owl	*Bubo virginianus*						S4	G5	N5					
MECP	Short-eared Owl	*Asio flammeus*	THR	SC	THR	SC	Schedule1	S4?B,S2S3N	G5	N4B,N3N,N4M	✓	>75ha	✓	CP	✓
eBird (2020), OBBA	Chimney Swift	*Chaetura pelagica*	THR	THR	THR	THR	Schedule1	S3B	G4G5	N4BN3M			✓		✓
eBird (2018), OBBA	Ruby-throated Hummingbird	*Archilochus colubris*						S5B	G5	N5B,N5M				CP	
OBBA	Belted Kingfisher	*Megaceryle alcyon*						S5B,S4N	G5	N5B,N4N5N,N5M			✓		✓

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
OBBA	Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	END	END	Schedule1	S3	G5	N4B,N3M			✓		✓
OBBA	Yellow-bellied Sapsucker	*Sphyrapicus varius*						S5B,S3N	G5	N5B,N5M	✓	2-5ha		CP	✓
OBBA	Downy Woodpecker	*Picoides pubescens*						S5	G5	N5					
eBird (2020), OBBA	Hairy Woodpecker	*Picoides villosus*						S5	G5	N5B,N5N,NUM	✓	4-8ha			✓
eBird (2020),OBBA	Northern Flicker	*Colaptes auratus*						S5	G5	N5B,N5N,N5M			✓		✓
OBBA	Pileated Woodpecker	*Dryocopus pileatus*						S5	G5	N5	✓	>40ha		CP	✓
OBBA	Eastern Wood-Pewee	*Contopus virens*	SC	SC	SC	SC	No Schedule	S4B	G5	N5B,N5M			✓		✓
OBBA	Alder Flycatcher	*Empidonax alnorum*						S5B	G5	N5B,N5M				CP	
OBBA	Willow Flycatcher	*Empidonax traillii*						S4B	G5	N5B,N5M			✓		✓
OBBA	Least Flycatcher	*Empidonax minimus*						S5B	G5	N5B,N5M	✓	>100ha		CP	✓
eBird (2020), OBBA	Eastern Phoebe	*Sayornis phoebe*						S5B	G5	N5B,N5M				CP	
OBBA	Great Crested Flycatcher	*Myiarchus crinitus*						S5B	G5	N5B,N5M					
eBird (2018), iNat (2022), OBBA	Eastern Kingbird	*Tyrannus tyrannus*						S4B	G5	N5B,N5M			✓	CP	✓
OBBA	Horned Lark	*Eremophila alpestris*						S4	G5	N5B,N5N,N5M				CP	
OBBA	Purple Martin	*Progne subis*						S3B	G5	N5B,N5M				CP	✓
eBird (2020), OBBA	Tree Swallow	*Tachycineta bicolor*						S4S5B	G5	N5B,N5M					
eBird (2014), OBBA	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*						S4B	G5	N5B,N5M				CP	
OBBA	Bank Swallow	*Riparia riparia*	THR	THR	THR	THR	No Schedule	S4B	G5	N5B,N5M			✓	CP	✓

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
eBird (2014), OBBA	Cliff Swallow	*Petrochelidon pyrrhonota*						S4S5B	G5	N5B,N5M				CP	✓
eBird (2018), OBBA	Barn Swallow	*Hirundo rustica*	SC	SC	THR	THR	No Schedule	S4B	G5	N3N4B,N3N4M				CP	
eBird (2022), iNat (2022), OBBA	Blue Jay	*Cyanocitta cristata*						S5	G5	N5B,N5N,NNRM					
eBird (2022), OBBA	American Crow	*Corvus brachyrhynchos*						S5	G5	N5B,N5N,N5M					
eBird (2021), OBBA	Black-capped Chickadee	*Poecile atricapillus*						S5	G5	N5				CP	
eBird (2016), OBBA	Red-breasted Nuthatch	*Sitta canadensis*						S5	G5	N5B,N5N,N5M	✓	>10ha		CP	✓
eBird (2020), OBBA	White-breasted Nuthatch	*Sitta carolinensis*						S5	G5	N5	✓	>10ha			
OBBA	Brown Creeper	*Certhia americana*						S5	G5	N5B,N5N,N5M	✓	>30ha		CP	✓
eBird (2020), OBBA	House Wren	*Troglodytes aedon*						S5B	G5	N5B,N5M					
OBBA	Marsh Wren	*Cistothorus palustris*						S4B,S3N	G5	N5BN5N,N5M				CP	✓
eBird (2019)	Ruby-crowned Kinglet	*Corthylio calendula*						S5B,S3N	G5	N5B,N5N,N5M				CP	✓
OBBA	Eastern Bluebird	*Sialia sialis*		NAR	NAR			S5B,S4N	G5	N5B,N5M				CP	
OBBA	Veery	*Catharus fuscescens*						S5B	G5	N5B,N5M	✓	>10ha		CP	✓
eBird (2019), OBBA	Wood Thrush	*Hylocichla mustelina*	SC	SC	THR	THR	No Schedule	S4B	G4	N4B,NUM			✓		✓
OBBA	American Robin	*Turdus migratorius*						S5	G5	N5B,N4N5N,N5M					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
iNat (2022),OBBA	Gray Catbird	*Dumetella carolinensis*						S5B,S3N	G5	N5B,N5M				CP	
OBBA	Brown Thrasher	*Toxostoma rufum*						S4B	G5	N5B,NUN,N5M			✓	CP	✓
eBird (2021), iNat (2022), OBBA	Cedar Waxwing	*Bombycilla cedrorum*						S5	G5	N5B,N5N,N5M					
iNat (2022)	Northern Shrike	*Lanius borealis*						S4B, S5N		N5B,N5N,N5M					
eBird (2022), iNat (2020), OBBA	European Starling	*Sturnus vulgaris*						SNA	G5	NNA					
eBird (2019), iNat (2021), OBBA	Warbling Vireo	*Vireo gilvus*						S5B	G5	N5B,N5M					
OBBA	Red-eyed Vireo	*Vireo olivaceus*						S5B	G5	N5B,N5N,N5M					
OBBA	Nashville Warbler	*Vermivora ruficapilla*						S5B	G5	N5B.N5M				CP	
eBird (2019), iNat (2022), OBBA	Yellow Warbler	*Dendroica petechia*						S5B	G5	N5B,N5M					
OBBA	Chestnut-sided Warbler	*Dendroica pensylvanica*						S5B	G5	N5B,N5M				CP	
eBird (2017), iNat (2022), OBBA	Yellow-rumped Warbler	*Dendroica coronata*						S5B,S4N	G5	N5B,N4N,N5M				CP	
OBBA	Black-throated Green Warbler	*Dendroica virens*						S5B	G5	N5B,N5M	✓	>30ha			✓
OBBA	Pine Warbler	*Dendroica pinus*						S5B,S3N	G5	N5B,N5M	✓	15-30ha		CP	✓

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
OBBA	Black-and-white Warbler	*Mniotilta varia*						S5B	G5	N5B,N5M	✓	>100ha		CP	✓
OBBA	American Redstart	*Setophaga ruticilla*						S5B	G5	N5B,N5M	✓	>100ha		CP	✓
OBBA	Ovenbird	*Seiurus aurocapilla*						S5B	G5	N5B,N5M	✓	>70ha		CP	✓
OBBA	Northern Waterthrush	*Seiurus noveboracensis*						S5B	G5	N5B,N5M					
OBBA	Mourning Warbler	*Oporornis philadelphia*						S5B	G5	N5B,N5M				CP	
eBird (2020), OBBA	Common Yellowthroat	*Geothlypis trichas*						S5B,S3N	G5	N5B,N5M					
OBBA	Scarlet Tanager	*Piranga olivacea*						S5B	G5	N5B,N4N5M	✓	>20ha		CP	✓
eBird (2022), OBBA	Northern Cardinal	*Cardinalis cardinalis*						S5	G5	N5					
OBBA	Rose-breasted Grosbeak	*Pheucticus ludovicianus*						S5B	G5	N5B,N5M			✓		✓
OBBA	Indigo Bunting	*Passerina cyanea*						S5B	G5	N5B,N5M					
OBBA	Eastern Towhee	*Pipilo erythrophthalmus*						S4B,S3N	G5	N4N5B,N4M			✓	CP	✓
eBird (2022)	American Tree Sparrow	*Spizella arborea*						S5	G5	N5B,N5N,N5M					
eBird (2020), OBBA	Chipping Sparrow	*Spizella passerina*						S5B,S3N	G5	N5B,N5M					
OBBA	Field Sparrow	*Spizella pusilla*						S4B,S3N	G5	N4B,NUM			✓	CP	✓
OBBA	Vesper Sparrow	*Pooecetes gramineus*						S4B	G5	N5B,N5M			✓	CP	✓
OBBA	Savannah Sparrow	*Passerculus sandwichensis*						S5B,S3N	G5	N5B,N4N,N5M	✓	>50ha	✓	CP	✓
eBird (2022), iNat (2022), OBBA	Song Sparrow	*Melospiza melodia*						S5	G5	N5B,N5N,N5M					
OBBA	Swamp Sparrow	*Melospiza georgiana*						S5B,S4N	G5	N5B,NUN,N5M				CP	
OBBA	White-throated Sparrow	*Zonotrichia albicollis*						S5	G5	N5B,N5N,N5M				CP	

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
eBird (2020)	Dark-eyed Junco	*Junco hyemalis*						S5	G5	N5B,N5N,N5M				CP	✓
NHIC, OBBA	Bobolink	*Dolichonyx oryzivorus*	THR	THR	THR	THR	No Schedule	S4B	G5	N5B,N4N5M	✓	>10ha	✓	CP	✓
eBird (2022), iNat (2022), OBBA	Red-winged Blackbird	*Agelaius phoeniceus*						S5	G5	N5B,N5N,N5M					
NHIC, eBird (2019), OBBA	Eastern Meadowlark	*Sturnella magna*	THR	THR	THR	THR	No Schedule	S4B,S3N	G5	N4B,NUM	✓	>10ha	✓	CP	✓
eBird (2022), iNat (2022), OBBA	Common Grackle	*Quiscalus quiscula*						S5	G5	N5B,NUN,N5M					
eBird (2020), OBBA	Brown-headed Cowbird	*Molothrus ater*						S5	G5	N5B,NUN,N5M					
eBird (2019), iNat (2021), OBBA	Baltimore Oriole	*Icterus galbula*						S4B	G5	N5B,N5M			✓		✓
OBBA	Purple Finch	*Carpodacus purpureus*						S5	G5	N5B,N5N,N5M				CP	
eBird (2020), iNat (2022), OBBA	House Finch	*Carpodacus mexicanus*						SNA	G5	N5					
eBird (2022), iNat (2020), OBBA	American Goldfinch	*Carduelis tristis*						S5	G5	N5B,N5N,N5M				CP	
eBird (2022), OBBA	House Sparrow	*Passer domesticus*						SNA	G5	NNA					
MAMMALS															

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
OMA	Virginia Opossum	*Didelphis virginiana*						S4	G5	N4N5					
OMA	Masked Shrew	*Sorex cinereus*						S5	G5	N5					
OMA	Little Brown Myotis	*Myotis lucifugus*	END	END	END	END	Schedule 1	S3	G3G4	N2N4B,NNRN,NNRM					✓
OMA	Big Brown Bat	*Eptesicus fuscus*						S4	G5	N5B,N5N,NNRM					
OMA	Hoary Bat	*Lasiurus cinereus*						S4	G4	N5B,NUM					✓
iNat (2022), OMA	Eastern Cottontail	*Sylvilagus floridanus*						S5	G5	N5					
OMA	European Hare	*Lepus europaeus*						SNA	G5	NNA					
iNat (2022)	Eastern Chipmunk	*Tamias striatus*						S5	G5	N5					
OMA	Woodchuck	*Marmota monax*						S5	G5	N5					
iNat (2021), OMA	Eastern Gray Squirrel	*Sciurus carolinensis*						S5	G5	N5					
OMA	Red Squirrel	*Tamiasciurus hudsonicus*						S5	G5	N5					
OMA	Beaver	*Castor canadensis*						S5	G5	N5					
OMA	White-footed Mouse	*Peromyscus leucopus*						S5	G5	N5					
iNat (2021), OMA	Muskrat	*Ondatra zibethicus*						S5	G5	N5					
OMA	Norway Rat	*Rattus norvegicus*						SNA	G5	NNA					
OMA	Porcupine	*Erethizon dorsatum*						S5	G5	N5					
OMA	Red Fox	*Vulpes vulpes*						S5	G5	N5					
OMA	Northern Raccoon	*Procyon lotor*						S5	G5	N5					
OMA	Ermine	*Mustela erminea*						S5	G5	N5					
OMA	Long-tailed Weasel	*Mustela frenata*						S4	G5	N5					✓
OMA	American Mink	*Mustela vison*						S4	G5	N5					

SOURCE	COMMON NAME	SCIENTIFIC NAME	COSSARO	SARO	COSEWIC	SARA	SCHEDULE	S-RANK	G-RANK	NRANK	AREA SENSITIVE	AREA REQUIRED	PIF SPECIES (BCR 13)	GRCA (DATE UNKNOWN)	WELLINGTON COUNTY (DOUGAN & ASSOCIATES, 2009)
OMA	Striped Skunk	*Mephitis mephitis*						S5	G5	N5					
iNat (2021), OMA	White-tailed Deer	*Odocoileus virginianus*						S5	G5	N5					
FISH															
ARA (2013)	White Sucker	*Catostomus commersoni*						S5	G5	N5					
ARA (2013)	Brook Stickleback	*Culaea inconstans*						S5	G5	N5					
ARA (2013)	Brassy Minnow	*Hybognathus hankinsoni*						S5	G5	N5					
ARA (2013)	Pumpkinseed	*Lepomis gibbosus*						S5	G5	N5					
ARA (2013)	Common Shiner	*Luxilus cornutus*						S5	G5	N5					
MECP	Silver Shiner	*Notropis photogenis*	THR	THR	THR	THR	Schedule 1	S2S3	G5	N2N3					
ARA (2013)	Fathead Minnow	*Pimephales promelas*						S5	G5	N5					
ARA (2013)	Creek Chub	*Semotilus atromaculatus*						S5	G5	N5					

Legend:
SARO: Species at Risk Ontario
COSEWIC: Committee on the status of endangered wildlife in Canada
SARA: Species at Risk Act
END: Endangered
THR: Threatened
SC: Special Concern
NAR: Not At Risk

S-Rank:
S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
S4: Apparently Secure—Uncommon but not rare
S5: Secure—Common, widespread, and abundant in the province
SX: Presumed extirpated
SH: Possibly Extirpated (Historical)
SNR: Unranked
SU: Unrankable—Currently unrankable due to lack of information
SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities
S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species
S#B- Breeding status rank
S#N- Non Breeding status rank
?: Indicates uncertainty in the assigned rank

G-Rank:
G1: Extremely rare globally
G1G2: Extremely rare to very rare globally
G2: Very rare globally
G2G3: Very rare to uncommon globally
G3: Rare to uncommon globally
G3G4: Rare to common globally
G4: Common globally
G4G5: Common to very common globally
G5: Very common globally; demonstrably secure
T: Denotes that the rank applies to a subspecies or variety

Source codes
OBA: Ontario Butterfly Atlas Online
ORAA: Ontario Reptile and Amphibian Atlas

OMA: Ontario Mammal Atlas
OBBA: Ontario Breeding Bird Atlas
NHIC: Natural Heritage Information Centre
iNat: iNaturalist
eBird: eBird
ARA: Aquatic Resource Area Survey Point
DFO: Department of Fisheries and Oceans

APPENDIX 9
MECP Request for Information and Response

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects

190 Nicklin Road
Guelph . Ontario
N1H 7L5

T: 519.822.6839
info@aboudtng.com
www.aboudtng.com

URBAN FORESTRY
ARBORIST REPORTS
MANAGEMENT PLANS
TREE PRESERVATION PLANS
TREE RISK ASSESSMENT
GIS TREE INVENTORIES
TREE APPRAISALS
MONITORING

ECOLOGICAL RESTORATION
NATURAL SYSTEMS DESIGN
HABITAT RESTORATION
EDGE MANAGEMENT PLANS
RAVINE STEWARDSHIP PLANS
NATURALIZATION PLANS
INTERPRETIVE DESIGN
MONITORING
CONTRACT ADMINISTRATION

ENVIRONMENTAL STUDIES
SUBWATERSHED STUDIES
ENVIRONMENTAL IMPACT STATEMENTS
ECOLOGICAL LAND CLASSIFICATION
WETLAND EVALUATION
VEGETATION ASSESSMENT
BOTANICAL INVENTORIES
WILDLIFE SURVEYS
MONITORING

LANDSCAPE ARCHITECTURE
MASTER PLANNING
RESIDENTIAL COMMUNITIES
COMMERCIAL/INDUSTRIAL
HEALTHCARE AND EDUCATION
STREETSCAPES
PARKS AND OPEN SPACES
TRAIL SYSTEMS
GREEN ROOFS
CONTRACT ADMINISTRATION

EXPERT OPINION
OMB TESTIMONY
LEGAL PROCEEDINGS
PEER REVIEW
RESEARCH
EDUCATION

09/08/2021

Our Project #:AA20-100B
Sent by email: SAROntario@ontario.ca

Ministry of the Environment, Conservation and Parks
Permissions and Compliance Section, Species at Risk Branch

Re: Part Lot 10 (79, 83 & 87 Sideroad 19)
Township of Centre Wellington (Fergus)
Request for Species at Risk and Local Site Information

To whom it may concern:

Please accept this request for information regarding Species at Risk (SAR), any other site constraints or information would also be appreciated. As it applies to an EIS for Part Lot 10 (79, 83 & 87 Sideroad 19) Fergus, ON (Figure 1). The information provided will be used to inform the Scoped Environmental Impact Study (EIS) required by the Grand River Conservation Authority (GRCA).

Project Proponent and Location

Township: Centre Wellington

UTM Coordinates: 548675.3 m E 4840000.82 m N

Proposed Activity

The client requires an EIS prepared to the satisfaction of the Township of Centre Wellington, Wellington County and GRCA in order to proceed with a proposed development on the subject property.

Project Timing

A project schedule or desired start date has not been supplied at this time; it is expected that construction will begin once all approvals have been acquired.

Existing Site Conditions

The subject property includes lands within the GRCA regulation limit and is within the area of interference for a GRCA wetland. The subject property is within the Urban Centre as designated by the County of Wellington Official Plan; no Greenland features are currently mapped. The subject property is designated as Residential, per the Township of Centre Wellington Official Plan Schedule A-1.

The subject property includes lands designated as Natural Heritage System, per the Wellington County Draft Natural Heritage System mapping. The subject property is zoned by the Township of Centre Wellington Zoning By law 2009-045 as Residential R1A, with a portion being Environmental Protection and Environmental Protection Overlay.

The study area is the subject property and up to 120m beyond the subject property, where access is permitted (*Figure 1*).

Background Information

A thorough background search has been completed; using available resources provided online related to the subject lands and adjacent lands and is listed below:

1. The Ontario Reptile and Amphibian Atlas shows within a 10 km square of the subject lands, the recent and historical presence of 14 species of reptiles and amphibians. Including four species of Conservation Concern (Midland Painted Turtle (SC(SARA)), Blanding's Turtle (THR(SARO), END(SARA)), Milksnake (SC(SARA)) and Snapping Turtle (SC(SARA&SARO))).

2. The Natural Heritage Information Center indicates the presence of four species of conservation concern within the 1km square containing the project location, including Midland Painted Turtle, Eastern Meadowlark (THR(SARA&SARO)), Bobolink (THR(SARA&SARO)) and Snapping Turtle. Irvine Creek Wetland Complex is also identified within the 1km square.

3. The Ontario Breeding Bird Atlas shows within a 10 km square of the subject land, the recent and historical presence of 86 species of birds. This list includes seven species of Conservation Concern (Chimney Swift (THR(SARO&SARA)), Eastern Wood-pewee (SC(SARO)), Bank Swallow (THR(SARO&SARA)), Barn Swallow (THR(SARO&SARA)), Wood Thrush (SC(SARO), THR(SARA)), Bobolink, and Eastern Meadowlark).

4. iNaturalist observations (research grade) within 1 km of the subject property indicate the recent presence of 2 vascular plant species, 9 insect species, 3 bird species, 3 amphibian

species and 2 reptile species. One of the species observed (Midland Painted Turtle) is considered species of Conservation Concern.

5. The Ontario Butterfly Atlas indicates the recent and historical presence of 14 species of butterflies, including one species of Conservation Concern (Monarch (SC(SARO&SARA))).

6. eBird records from nearby Fergus-Nexans Ponds (~1.25km from the subject property) indicates the recent and historical presence of 61 species, including four species of Conservation Concern (Barn Swallow, Chimney Swift, Eastern Meadowlark and Wood Thrush).

7. The Ontario Mammal Atlas shows within the 10km square containing the subject lands, the historical presence of 18 species of mammals. This list includes one species of Conservation Concern (Little Brown Myotis (END(SARO&SARA))).

Please contact the undersigned should you require additional information of the above.

Yours truly,

ABOUD & ASSOCIATES INC.

Kelly Skaug, Rec, Fish & Wildlife Tech Dip, Ecosystem Mgmt Tech Dip.
Aquatic Ecologist
T:613.267.0412

LEGEND

- SUBJECT PROPERTY
- STUDY AREA
- WETLAND
- REGULATION LIMIT

Information Sources:

1. Orthophotography provided by First Base Solutions Accessed August, 2021
2. Wetlands and Regulation Limit provided by Grand River Conservation Authority Accessed August, 2021

Title:

STUDY AREA

Project:

PART LOT 10, SIDEROAD 19
TOWN OF FERGUS

Date: AUGUST 2021
Project: AA20-100B
Scale: 1 : 2000

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
190 Nicklin Road, Guelph, Ontario, N1H 7L5 519.822.6839, www.aboudng.com

Figure No:

1

From: Species at Risk (MECP)
To: Kelly Skaug
Subject: RE: Request for SAR information for Part Lot 10 in the Township of Centre Wellington (Fergus)
Date: September 21, 2021 2:43:21 PM

External

Hi Kelly,
In addition to the species you have listed we have records of the following in proximity to your site;

End/Thr – silver shiner, gypsy cuckoo bumble bee, nine-spotted lady beetle,
Special Concern: bald eagle, yellow-banded bumble bee, short-eared owl

Please note it remains the clients responsibility to:

- Carry out preliminary screening for their project,
- Obtain the best available information for all applicable information sources,
- Conduct necessary field studies or inventories to identify and confirm the presence of absence of species at risk or their habitat,
- Consider any potential impacts to species at risk that a proposed activity might cause, and
- Comply with the Endangered Species Act (ESA).

Additionally, while this data represents MECP's best current available information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

If you would like to discuss further please feel free to reach out directly.
Lisa

Lisa McShane | Management Biologist | Permissions and Compliance Section, Species at Risk Branch | Ministry of Environment, Conservation and Parks | lisa.mcshane@ontario.ca | (226) 668-0527

From: Kelly Skaug <Kelly@aboudtng.com>
Sent: Thursday, September 9, 2021 3:19 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Cheryl-Anne Ross <Cheryl@aboudtng.com>
Subject: Request for SAR information for Part Lot 10 in the Township of Centre Wellington (Fergus)

Good Afternoon,

Please see the attached request for review for consideration of Species at Risk concerns or study recommendations for the proposed development at Part Lot 10 in the Township of Centre Wellington (Fergus).
Your prompt review of the information is greatly appreciated.

Thank you,

Kelly Skaug R.F.W.T. E.M.T
Aquatic Ecologist
ABOUD & ASSOCIATES INC. 190 Nicklin Road . Guelph . Ontario . N1H 7L5
C: 613.267.0412 www.aboudtng.com . kelly@aboudtng.com

APPENDIX 10
Project Impacts and Proposed Mitigation

ACTIVITY	PROJECT PHASE	POTENTIAL IMPACTS	INITIAL IMPACT RATING[1,3]	MITIGATION RECOMMENDATIONS/COMMENTS	FINAL IMPACT RATING[2,3]	PROPOSED IMPLEMENTATION PHASE	MONITORING/ FOLLOW-UP RECOMENDATIONS
Vegetation Removal – Clearing & Grubbing *Upland Area*	Site Preparation and Servicing	Loss of vegetation and wildlife habitat	Moderate	▪ Avoidance of significant wildlife habitat ▪ Implicate design to avoid or minimize loss of vegetation and edge habitat. ▪ Implement compensation plan where possible, using native tree, shrub, and vegetative species.	None	Site Preparation and Servicing, Construction, Post-construction	▪ Monitor any re-vegetated areas for establishment and install and monitor ESC to ensure encroachment into buffers is avoided.
Vegetation Removal – Clearing & Grubbing *Upland Area*	Site Preparation and Servicing	Disturbance of wildlife species	Minor	▪ Avoid removal or destruction of animal movement corridors. ▪ Time activities to avoid wildlife disturbance during important life stages	None	Site Preparation and Servicing, Construction	
Vegetation Removal – Clearing & Grubbing *Upland Area*	Site Preparation and Servicing	Impacts to nesting birds protected under the Migratory Bird Convention Act	Severe	▪ Complete all vegetation removal outside the Environment Canada breeding bird nesting window (April 1- August 31) ▪ Where vegetation removal must occur during the nesting window, conduct a bird nest survey to determine locations of active nests prior to construction works including installation of Erosion Sediment Control (ESC) fence and any site clearing. ▪ Create nest protection zones where active bird nests are found and monitor (as needed, e.g., weekly) until inactive.	None	Site Preparation and Servicing, Construction	▪ Monitor nests (as needed, e.g. weekly) until inactive
Vegetation Removal – Clearing & Grubbing *Upland Area*	Site Preparation and Servicing	Impacts to bat maternity habitat	Moderate	▪ Complete all vegetation removal outside of the bat maternity window (April 1-September 30)	Minor-none	Site Preparation and Servicing, Construction	▪

ACTIVITY	PROJECT PHASE	POTENTIAL IMPACTS	INITIAL IMPACT RATING[1,3]	MITIGATION RECOMMENDATIONS/COMMENTS	FINAL IMPACT RATING[2,3]	PROPOSED IMPLEMENTATION PHASE	MONITORING/ FOLLOW-UP RECOMENDATIONS
Vegetation Removal – Clearing & Grubbing *Wetland Areas*	Site Preparation and Servicing	Increased erosion, sedimentation into wetland	Moderate	▪ Develop & implement ESC plan	None	Site Preparation and Servicing, Construction, Post-construction	▪ Monitor ESC to ensure wetland is not impacted
Vegetation Removal – Clearing & Grubbing *Wetland Areas*	Site Preparation and Servicing	Decreased shade and cover	Moderate-minor	▪ Maintain or restore vegetative buffers	None	Site Preparation and Servicing, Construction, Post-construction	▪ Monitor any re-vegetated areas for establishment, and monitor ESC to ensure encroachment into buffers is avoided.
Grading	Site Preparation and Servicing	Increased erosion, sedimentation, and turbidity	Moderate	▪ Maintain and restore vegetative buffers. ▪ Develop & implement ESC Plan per GGH Erosion and Sediment guidelines (TRCA, 2019)	Minor-none	Site Preparation and Servicing, Construction, Post-construction	▪ Monitor ESC fence weekly, and after major storm events for any breaks, and repair.
Grading	Site Preparation and Servicing	Increase nutrient inputs and contaminants to waterbodies and wetlands	Moderate	▪ Develop & implement ESC Plan per GGH Erosion and Sediment guidelines (TRCA, 2019) ▪ Designate areas for equipment storage.	Minor-none	Site Preparation and Servicing, Construction	▪ Monitor ESC fence weekly, and after major storm events for any breaks, and repair.
Grading	Site Preparation and Servicing	Increased soil compaction	Moderate	▪ Control access and movement of equipment and people	Minor	Site Preparation and Servicing, Construction	
Grading	Site Preparation and Servicing	Changes to drainage	Minor	▪ Schedule grading to avoid high runoff volumes. ▪ Minimize changes to land contours and natural drainage	None	Site Preparation and Servicing, Construction, Post-construction	

ACTIVITY	PROJECT PHASE	POTENTIAL IMPACTS	INITIAL IMPACT RATING[1,3]	MITIGATION RECOMMENDATIONS/COMMENTS	FINAL IMPACT RATING[2,3]	PROPOSED IMPLEMENTATION PHASE	MONITORING/ FOLLOW-UP RECOMENDATIONS
Grading	Site Preparation and Servicing	Changes to surface runoff	Minor	▪ Maintain streams and timing, quantity of flows. ▪ Implement site designed SWM plan	None	Site Preparation and Servicing, Construction, Post-construction	
Grading	Site Preparation and Servicing	Changes in soil moisture, tree cover and vegetation	Minor	▪ Minimize the area and duration of soil exposure	None	Site Preparation and Servicing, Construction, Post-construction	▪ Monitor plantings to ensure proper establishment.
Grading	Site Preparation and Servicing	Disturbance to wildlife	Minor	▪ Time activities and conduct work outside timing windows of sensitive species and avoid sensitive periods (Breeding birds, fish spawning)	None	Site Preparation and Servicing, Construction, Post-construction	
Grading	Site Preparation and Servicing	Alteration or destruction of wildlife habitat	Minor	▪ Identify sensitive species prior to work and design grading to avoid disturbing sensitive species.	None	Site Preparation and Servicing, Construction, Post-construction	
Grading	Site Preparation and Servicing	Wildlife entering construction areas	Minor	▪ Develop & implement ESC plan to exclude wildlife	None	Site Preparation and Servicing, Construction	▪ Monitor ESC fence weekly, and after major storm events for any breaks, and repair.
Installation of Services and utilities	Site Preparation and Servicing	Increased erosion, sedimentation, and turbidity	Minor	▪ Maintain vegetated buffers. ▪ Develop sediment and erosion control plan	Minor-none	Site Preparation and Servicing, Construction, Post-construction	▪ Monitor ESC fence weekly, and after major storm events for any breaks, and repair.
Installation of Services and Utilities	Site Preparation and Servicing	Disturbance to wildlife including sensitive species	Minor	▪ Conduct work outside timing windows of sensitive species and time sensitive periods (Breeding birds, bats).	None	Site Preparation and Servicing, Construction	
Installation of Services and Utilities	Site Preparation and Servicing	Hydrological changes	Minor	▪ Conduct appropriate studies to determine how to maintain existing hydrology. ▪ Design underground facilities to minimize impacts to groundwater	None	Site Preparation and Servicing, Construction	

ACTIVITY	PROJECT PHASE	POTENTIAL IMPACTS	INITIAL IMPACT RATING[1,3]	MITIGATION RECOMMENDATIONS/COMMENTS	FINAL IMPACT RATING[2,3]	PROPOSED IMPLEMENTATION PHASE	MONITORING/ FOLLOW-UP RECOMENDATIONS
Installation of Services and Utilities	Site Preparation and Servicing	Wildlife entering construction areas	Minor	▪ Develop & implement ESC plan to exclude wildlife	None	Site Preparation and Servicing, Construction	▪ Monitor ESC fence weekly, and after major storm events for any breaks, and repair.
Building Construction (including accessory uses and amenities)	Construction	Increased erosion, sedimentation and turbidity	Moderate	▪ Maintain vegetated buffers. ▪ Develop sediment and erosion control plan	Minor-none	Construction, Post-construction	▪ Monitor ESC fence weekly, and after major storm events for any breaks, and repair.
Building Construction (including accessory uses and amenities)	Construction	Water contamination by oils, gasoline, grease and other materials	Moderate	▪ Control water contamination through good housekeeping practices such as designated areas for parking and refuelling vehicles.	Minor-none	Construction	
Building Construction (including accessory uses and amenities)	Construction	Increased impervious surfaces causing increased runoff, reduced infiltration and groundwater discharge	Minor	▪ Maintain or provide vegetative buffers. ▪ Implement infiltration techniques. ▪ Control quantity and quality of stormwater discharge	None	Construction, Post-construction	
Building Construction (including accessory uses and amenities)	Construction	Loss of vegetation at wetland edges and removal of dead trees for homeowner safety	Minor	▪ Maintain sufficient buffer between buildings and significant features	None	Construction, Post-construction	

ACTIVITY	PROJECT PHASE	POTENTIAL IMPACTS	INITIAL IMPACT RATING[1,3]	MITIGATION RECOMMENDATIONS/COMMENTS	FINAL IMPACT RATING[2,3]	PROPOSED IMPLEMENTATION PHASE	MONITORING/ FOLLOW-UP RECOMENDATIONS
Building Construction (including accessory uses and amenities)	Construction	Disturbance to wildlife from sounds and activity associated with occupancy	Minor	▪ Restrict access and buffer natural areas to discourage landowner encroachment and improper use. ▪ Provide homeowners manual to encourage stewardship	None	Construction, Post-construction	
Building Construction (including accessory uses and amenities)	Construction	Loss of wildlife (mortality) due to collisions with buildings	Minor	▪ Design buildings to minimize/prevent mortality	None	Construction, Post-construction	
Human Occupation	Post-Construction	Increased nutrient and contaminant inputs to waterbodies, wetlands from fertilizers, pesticides etc.	Minor	▪ Avoid use near sensitive vegetation and landforms	None	Post-construction	
Human Occupation	Post-Construction	Vegetation and soil compaction	Minor	▪ Minimize erosion by using gravel, stones or wood on paths	None	Post-construction	
Human Occupation	Post-Construction	Noise and light pollution from pets and residents	Moderate	▪ Provide homeowners manual to promote stewardship	Minor	Post-construction	
Human Occupation	Post-Construction	Predation of wildlife by pets	Moderate	▪ Provide homeowners manual to promote stewardship	Minor	Post-construction	
Human Occupation	Post-Construction	Non-native species introductions, increased competition, predators, and parasites	Moderate	▪ Create natural fences and berms within buffers to natural areas to reduce potential for dumping.	Minor	Post-construction	

ACTIVITY	PROJECT PHASE	POTENTIAL IMPACTS	INITIAL IMPACT RATING[1,3]	MITIGATION RECOMMENDATIONS/COMMENTS	FINAL IMPACT RATING[2,3]	PROPOSED IMPLEMENTATION PHASE	MONITORING/ FOLLOW-UP RECOMENDATIONS
Human Occupation	Post-Construction	Increased erosion and sedimentation from dumping of debris and compost in natural areas	Minor	▪ Create natural fences and berms within buffers to natural areas to reduce potential for dumping.	None	Post-construction	▪

LEGEND:

[1] *Initial Impact* is a relative rating of the expected impact to occur in the absence of any mitigation measures. It evaluates the impact based on the duration, reversibility, extend of influence, frequency, existing ecological site context, likelihood of occurring and cumulative effects.

[2] *Actual Impact* is the expected impact in consideration of implementation of mitigation measures or where potential impact may cause little to no actual impact.

[3] *Impact Rating*

None: An event that, if it occurs, will cause no foreseeable impact.
Minor: An event that, if it occurs, will cause small, reversible, and geographically localized impact that can be easily mitigated.
Moderate: Significant but reversible, OR irreversible and geographically localized, impact that requires significant mitigation.
Severe: Significant AND irreversible impact on the environment, impacts cannot be fully mitigated.

- Urban Forestry
- Ecological Restoration
- Landscape Architecture
- Environmental Studies
- Expert Opinion

ABOUD & ASSOCIATES INC.
Consulting Arborists • Ecologists • Landscape Architects
3-5 Edinburgh Road South . Guelph . Ontario . N1H 5N8 . 519.822.6839 . www.aboudtng.com