



GUIDING SOLUTIONS IN THE
NATURAL ENVIRONMENT

Scoped Environmental Impact Study

Elora Clayton

Township of Centre Wellington

Wellington County

Prepared For:

Cachet Developments

Prepared By:

Beacon Environmental Limited

Date: Project:

July 2022 221469

Table of Contents

	page
1. Introduction	1
2. Methodology.....	2
2.1 Background and Policy Review	2
2.2 Field Investigations.....	3
2.2.1 Aquatic Habitat Assessment	3
2.2.2 Ecological Land Classification and Floral Inventory.....	4
2.2.3 Feature Staking.....	4
2.2.4 Breeding Bird Surveys	4
2.2.5 Endangered or Threatened Species	4
2.2.6 Incidental Wildlife	4
3. Policy Review	5
3.1 Provincial Policy Statement (2020)	5
3.2 A Place to Grow - Growth Plan for the Greater Golden Horseshoe (May, 2019).....	5
3.3 County of Wellington (2021)	6
3.4 Township of Centre Wellington (2013).....	8
3.5 Grand River Conservation Authority Policies (2015) and Regulations (2006)	9
3.6 <i>Endangered Species Act</i> (2007)	10
3.7 <i>Federal Fisheries Act</i> (1985).....	11
4. Existing Conditions.....	11
4.1 Aquatic Resources	11
4.1.1 Fish Community	16
4.2 Terrestrial Resources	17
4.2.1 Ecological Land Classification.....	17
4.2.1.1 <i>Cultural Communities</i>	18
4.2.1.2 <i>Wetland Community</i>	20
4.2.1.3 <i>Woodland Community</i>	21
4.2.1.4 <i>Flora</i>	22
4.2.2 Breeding Birds.....	22
4.2.3 Endangered or Threatened Species	23
4.2.4 Significant Wildlife Habitat.....	26
4.2.5 Incidental Wildlife	26
5. Natural Heritage Features and Constraints.....	27
5.1 Woodland	27
5.2 Valleyland.....	27
5.3 Nichol Drain.....	27
5.4 Wetlands	28
5.5 Habitat of Endangered and Threatened Species	28
6. Proposed Development	28
6.1 Residential Development.....	28

6.2	Site Servicing	29
6.2.1	Access.....	29
6.2.2	Stormwater Management.....	29
6.2.3	Sanitary Servicing	29
6.2.4	Water Supply.....	29
7.	Impact Assessment and Mitigation.....	30
7.1	Impact Assessment	30
7.1.1	Buffer Encroachments.....	30
7.1.2	Removal of Vegetation.....	30
7.1.3	Increase in Impervious Surfaces.....	31
7.1.4	Soil Mobilization	31
7.1.5	Noise and Light Effects on Wildlife.....	31
7.2	Recommended Mitigation Measures.....	31
7.2.1	Mitigation by Design	32
7.2.2	Buffers to Natural Features	32
7.2.3	Restoration and Landscape Plantings	32
7.2.4	Tree Inventory and Protection Plan.....	32
	7.2.4.1 Tree Compensation	32
7.2.5	Stormwater Management Plan.....	33
7.2.6	Groundwater.....	34
7.2.7	General Mitigation Measures	34
8.	Policy Conformity	35
8.1	Provincial Policy Statement	35
8.2	A Place to Grow - Growth Plan for the Greater Golden Horseshoe (May, 2019)	36
8.3	County of Wellington Official Plan.....	36
8.4	Township of Centre Wellington Official Plan	36
8.5	Grand River Conservation Authority	36
8.6	<i>Endangered Species Act</i>	36
8.7	<i>Federal Fisheries Act</i>	37
9.	Conclusion	37
10.	Cited References	39

Figures

Figure 1.	Site Location.....	after page 2
Figure 2.	Existing Conditions	after page 18
Figure 3.	Proposed Development	after page 28

Tables

Table 1. Summary of Field Investigations	3
Table 2. Fish Capture Information from Nichol Drain Sub Watershed Study Phase 1, Conducted in 2006	17
Table 3. Threatened or Endangered Species with Potential to Occur on Subject Property	24

Appendices

Appendix A. GRCA Correspondence	
Appendix B. Breeding Bird Survey Methods	
Appendix C. Vascular Plant Species List	
Appendix D. Breeding Bird Species List	

1. Introduction

Beacon Environmental Limited (Beacon) has been retained by Cachet Developments to prepare a Scoped Environmental Impact Study (EIS) for a proposed Draft Plan of Subdivision. The lands that comprise the Draft Plan of Subdivision are legally described as Part of Lot 16, Concession 11, in the geographic Township of Nichol, located in the community of Salem, Township of Centre Wellington, County of Wellington. These lands are herein referred to as the “Clayton subject property”. The Clayton subject property is generally bounded by Woolwich Street East to the northwest, by Irvine Street to the southeast, by existing residential to the south, and by Salem Public School to the west (**Figure 1**).

Cachet Developments also owns the adjacent parcel of land on the opposite side of Irvine Street located at 7581 Sideroad 15 (SR15) herein referred to as the “Elora Sands”. The Elora Sands are generally bounded by SR15 to the northwest, by Gerrie Road to the southeast, by existing agricultural (known as the Keating Lands) to the south, Irvine Street to the southwest, and bisected by the Nichol Drain No. 1 (ND1) (**Figure 1**). The Elora Sands (39.2 ha) are currently outside of the settlement area boundary outlined in the Township of Centre Wellington Official Plan and are under consideration to be brought into the settlement area during the County of Wellington’s Comprehensive Review process in 2022.

The Clayton subject property comprises a total area of approximately 12.49 ha (30.8 acres). The Clayton subject property is currently undeveloped with an agricultural field and adjacent natural heritage features including a woodland and valleyland. The woodland and valleyland are designated as “Greenlands” in the County of Wellington Official Plan (2021).

The Elora Sands property is currently developed with a house, barn and shed structures in the central portion. The majority of the property is an agricultural field with a municipal drain traversing the central portion of the property in a west to east direction, hedgerows, a coniferous plantation and a marsh community surrounding the watercourse. The marsh community and municipal drain are regulated by the Grand River Conservation Authority (GRCA).

The proposed development plans for the Clayton subject property include a residential subdivision with a mix of single detached and street-oriented townhouse units, an open space block, a park block, and municipal right-of-ways. Refer to the Draft Plan of Subdivision prepared by Astrid J. Clos Planning Consultants, dated April 28, 2022. The stormwater management facility (SWMF) block is being proposed to be located on the adjacent Elora Sands and will outlet to the Nichol Drain.

An EIS is required by the County and GRCA as part of the *Planning Act* application to develop the subject property as it is within 120 m of natural features.

The purpose of this EIS is to:

- Describe the existing natural heritage conditions and features both on and immediately adjacent to the subject property;
- Identify applicable environmental polices and evaluate project conformance with relevant provincial and municipal planning documents, and GRCA policies and regulations;
- Identify potential development impacts to natural heritage features and ecological functions; and
- Identify appropriate mitigation recommendations.

The GRCA and Township of Centre Wellington were consulted at the outset of the project with a terms of reference provided on December 8, 2021, a revised terms of reference provided on March 1, 2022 and final revised terms of reference provided on April 22, 2022 (**Appendix A**) to ensure their planning and ecology staff were in agreement with the work plan undertaken for this report.

2. Methodology

To characterize natural heritage resources and functions associated with the subject property and adjacent lands, Beacon completed a review of available background information and undertook seasonal field investigations. The GRCA confirmed by email on December 21, 2021 that the Clayton subject property does not contain any regulated features or additional natural heritage features of interest and did not have any comments to provide on the work plan (**Appendix A**). After the addition of the second subject property (Elora Sands), where the proposed SWMF will be built, a revised terms of reference was provided to both the GRCA and the Township and comments were provided to address the proposed development on these lands on March 22, 2022 and May 13, 2022, respectively (**Appendix A**). The information reviewed and surveys undertaken is summarized below.

2.1 Background and Policy Review

Background information was gathered and reviewed at the outset of the project. This involved consideration of the following documents and information sources, as relevant to the subject properties:

- Provincial Policy Statement (PPS; 2020);
- The Growth Plan for the Greater Golden Horseshoe (May 2019);
- County of Wellington Official Plan (July 2021 Office Consolidation);
- GRCA policies (2015) and regulations (2006);
- Land Information Ontario and Ministry of Natural Resources and Forestry (MNR) resource information; and
- *Endangered Species Act* (ESA; 2007).

Other sources of information such as current and historical aerial photographs, local topographic survey data, were also reviewed prior to commencing field investigations. Further, Beacon's background review also includes analysis of numerous information sources in a Geographic Information System (GIS) environment that facilitates an assessment of the likelihood that species at risk and other natural heritage features are present in an area of interest. This system allows Beacon to combine the most current information provided by the MNR through the Land Information Ontario (LIO) portal with GIS layers from other provincial and local datasets, including but not limited to, floral and faunal atlas data. This system enables the creation of a list of Species at Risk for which there are records or which might be expected to occur within 5 km of a location. All relevant layers can then be overlaid on the most recent high resolution ortho-imagery. The screening process helps identify areas that can then be targeted (for example, potential habitat) during the field program to maximize the efficiency and effectiveness of on-site investigations.



Legend

- Subject Property
- Watercourse (MNR 2021)



Site Location	Figure 1
Elora Clayton EIS	
Project: 221469 Last Revised: July 2022	
Client: Cachet Developments	Prepared by: SZ Checked by: KQ
1:11,000	Inset Map: 1:75,000
<small>Contains information licensed under the Open Government License— Ontario Orthoimagery Baselayar: FBS Communities of Elora and Fergus (2018)</small>	

Information sources reviewed, included but were not limited to:

- Provincially tracked species layer (1 km grid LIO dataset);
- Ontario Reptile and Amphibian Atlas (ORAA);
- Ontario Breeding Bird Atlas (OBBA);
- Natural Heritage Information Centre (NHIC) Data via the Make-A-Map application;
- Species at risk range maps (Government of Ontario);
- High resolution aerial photography of the property;
- Natural and physical feature layers (e.g. topographic, wetland, waterbody, watercourse data), LIO and Aquatic Resource Area (ARA) datasets;
- Ontario Geological Survey (OGS) and soil physiography (Chapman and Putnam) datasets; and
- Nichol Drain Subwatershed Study Phase 1 Existing Conditions Final Report (Aquafor Beech Limited 2008).

2.2 Field Investigations

The following field investigations were undertaken by Beacon ecologists in the 2021 and 2022 field season as part of this study to characterize the natural heritage features and functions associated with both of the subject properties.

A summary of the field visits and survey dates is presented in **Table 1**. More detailed survey descriptions are provided in the subsections that follow.

Table 1. Summary of Field Investigations

Field Investigation	Dates
Ecological Land Classification and Flora	December 13, 2021; April 19, 2022
Dripline Staking by Beacon	April 19, 2022
Dripline Confirmation	June 22, 2022
Breeding Bird Surveys	June 8, 20 and 29, 2022
Aquatic Habitat Assessment	April 19, 2022

2.2.1 Aquatic Habitat Assessment

An aquatic habitat assessment was completed for the Nichol Drain, part of the Irvine Creek system, on Elora Sands,. The assessment of aquatic habitat within the watercourse on the subject property involved a visual assessment of the following characteristics:

- Channel width and depth profile, bank height, bank stability;
- Substrate types and distribution;
- Fish barriers;
- Riparian vegetation type and cover; and
- In-stream cover type and extent.

2.2.2 Ecological Land Classification and Floral Inventory

Vegetation surveys and community mapping was undertaken to describe and map the existing vegetation communities on current colour ortho-photography of the lands using the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al.* 1998). This is the standard method used for describing vegetation communities in southern Ontario.

Additionally, a search for Butternut (*Juglans cinerea*), a provincially endangered tree species was conducted during the vegetation community survey.

2.2.3 Feature Staking

A dripline staking of the woodlands present immediately west of the Clayton subject property was completed on April 19, 2022. The woodland dripline boundary was confirmed by Ms. Cheryl-Anne Ross, an Ecologist from Aboud and Associates, a representative of the Township of Centre Wellington during a feature staking visit on June 22, 2022. No other natural heritage features were staked during these visits.

2.2.4 Breeding Bird Surveys

Three breeding bird surveys were conducted on the mornings of June 8, 20 and 29, 2022 on days with low to moderate winds (0-2 Beaufort Scale), no precipitation and temperatures within 5°C of normal average temperatures. The breeding bird community was surveyed using a roving type survey, in which all parts of the study area were walked to within 50 m and all birds heard or observed and showing some inclination toward breeding were recorded as breeding species. All birds seen or heard were recorded in the location observed on an aerial photograph of the site. The site visits were made more than one week apart in accordance with standard southern Ontario breeding bird survey protocols. For further details on the breeding bird survey methodology used by Beacon ecologists, see **Appendix B**. An annotated species list was compiled indicating provincial breeding status, as well as provincial and federal endangered and threatened species encountered.

2.2.5 Endangered or Threatened Species

Beacon staff considered the potential habitat suitability for species of plants and animals which are subject to the ESA and associated regulations during all field investigations on the Clayton and Elora Sands subject properties.

2.2.6 Incidental Wildlife

Incidental observations of other wildlife, including reptiles, amphibians and/or mammals were made during field investigations. This included sounds heard, scat, tracks and visual observations. At this time, potential for significant wildlife habitat was also considered.

3. Policy Review

A policy review was undertaken to identify environmental planning considerations and requirements, as applicable to the subject property and proposed development and site alteration activities.

3.1 Provincial Policy Statement (2020)

The PPS was issued under Section 3 of the *Planning Act*, RSO 1990, c P.13 and all decisions affecting land use planning matters “shall be consistent with” the PPS. The 2020 PPS released by the Ontario provincial government came into effect May 1, 2020.

Section 2.1 of the PPS provides direction to regional and local municipalities regarding planning policies specifically for the protection and management of defined natural heritage features and resources. The *Natural Heritage Reference Manual* (MNR 2010) is a technical document used to help assess the natural environment to identify natural heritage or significant features and areas, as defined by the PPS. The PPS provides planning policies for the following features:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat;
- Significant Areas of Natural and Scientific Interest (ANSIs);
- Fish habitat; and
- Habitat of endangered and threatened species.

Each of these features or defined areas are afforded varying levels of protection subject to guidelines, and in some cases, regulations. Of these features, significant wetlands and woodlands can be designated either by MNR and/or the municipality. Significant habitat of endangered or threatened species is regulated by the Ministry of Environment, Conservation and Parks (MECP) if a species is identified on a property through site specific investigation or through existing information. Fish habitat is governed by Fisheries and Oceans Canada (DFO). Ensuring the identification and regulation of the remaining features is the responsibility of the municipality or other planning authority.

3.2 A Place to Grow - Growth Plan for the Greater Golden Horseshoe (May, 2019)

The provincial growth plan is issued under the *Places to Grow Act*, 2005, SO 2005, c. 13. The 2019 provincial growth plan titled: “*A Place to Grow – Growth Plan for the Greater Golden Horseshoe*” (May 2019) came into effect on May 16, 2019. The subject property is located within the Greater Golden Horseshoe Growth Plan Area.

The Growth Plan, together with the Greenbelt Plan, Oak Ridges Moraine Conservation Plan (ORMCP), and the Niagara Escarpment Plan (NEP), builds on the PPS to establish a land use planning framework

for the Greater Golden Horseshoe (GGH) that supports the achievement of complete communities, a thriving economy, a clean and healthy environment, and social equity.

The 2019 Growth Plan provides for the identification and protection of a Natural Heritage System for the Growth Plan outside of the Greenbelt Area and settlement areas, and applies protections similar to those in the Greenbelt Plan to provide consistent and long-term protection throughout the GGH.

A review of the Growth Plan schedules has identified that the Clayton subject property, in its entirety, is located within the Greater Golden Horseshoe Growth Plan Area, is located outside of the Greenbelt Area, and is not located within or directly adjacent to lands associated with the defined Natural Heritage System.

In accordance with Growth Plan Policy 2.2.8.1 and as per Schedule A1 (*Centre Wellington*) of the County of Wellington Official Plan (2021), the Clayton subject property, in its entirety, is located within *Urban Centre* (as of 1999); see Section 3.3 for details.

Under Section 4.2.2.1:

The Natural Heritage System for the Growth Plan excludes lands within settlement area boundaries that were approved and in effect as of July 1, 2017.

Section 4.2.4.6 states that:

Beyond the Natural Heritage System for the Growth Plan, including within settlement areas, the municipality:

- *Will continue to protect any other natural heritage features and areas in a manner that is consistent with the PPS; and*
- *May continue to protect any other natural heritage system or identify new systems in a manner that is consistent with the PPS.*

3.3 County of Wellington (2021)

Within their Official Plan, Wellington County has identified a Greenlands System, which is illustrated on Schedule A of the Official Plan. Schedule A1 shows that the Clayton subject property is designated as urban centre, within the urban system and has a small portion of “Greenlands” directly adjacent to the subject property which overlaps with the woodlands and valleyland present to the west of the Clayton subject property.

The Greenlands System is comprised of various natural heritage features, flood prone areas, and hazard lands. The system is divided into two broad categories: Core Greenlands and Greenlands.

Core Greenlands include the following features:

- PSWs and other wetlands;
- Habitat of endangered or threatened species;
- Fish habitat; and
- Floodway and hazardous lands.

Development and site alteration are not permitted in PSWs or habitat of endangered and threatened species, and is restricted in other wetlands, fish habitat, and floodways/hazard lands.

In addition to the Core Greenlands features, the Greenlands System includes other natural heritage features such as:

- Wildlife habitat;
- ANSI;
- Streams and valleylands;
- Woodlands;
- Environmentally sensitive areas;
- Ponds, lakes and reservoirs; and
- Natural links.

In other Core Greenlands areas, and in Greenlands areas, permitted uses and activities may include: a) agriculture; b) existing uses; c) conservation; d) forestry; e) aggregate extraction within Mineral Aggregate Areas subject to appropriate rezoning, licensing and the policies of this Plan; f) open space; and g) passive recreation (section 5.6.1).

These natural heritage feature areas are often found within Core Greenlands (section 5.5). Where they are outside Core Greenlands they are identified as Greenlands.

With regard to valleylands, Section 5.5.3 states:

Streams and valleylands are included in the Greenlands system. All streams and valleylands will be protected from development or site alterations which would negatively impact on the stream or valley- land or their ecological functions.

With regard to woodlands, Section 5.5.4 states:

In the Urban System, woodlands over 1 hectare are considered to be significant by the County and are included in the Greenlands System. Woodlands of this size are important due to their economic, visual and environmental contributions to the urban landscape.

Detailed studies such as environmental impact assessments may be used to identify, delineate and evaluate the significance of woodlands based on other criteria such as: proximity to watercourses, wetlands, or other woodlands; linkage functions; age of the stand or individual trees; presence of endangered or threatened species; or overall species composition.

Significant woodlands will be protected from development or site alterations which would negatively impact the woodlands or their ecological functions. Good forestry practices will be encouraged and tree removal shall be subject to the Wellington County Forest Conservation Bylaw.

Smaller woodlands may also have local significance and, where practical, these smaller woodlands should be protected.

While the Official Plan provides direction for studies (including an Environmental Impact Assessment) when development is proposed adjacent to the Greenlands, it does not provide any recommended or required setbacks to natural features.

With respect to stormwater management infrastructure, Section 12.6.1 “Utilities Allowed” of the Official Plan states that,

Except as provided for in Section 4.13, the following uses may be permitted in any land use designation, subject to the provisions of the Zoning By-law.

b) utilities and services necessary for the transmission of municipal water, sewage, public roads, parking facilities and facilities for the detention, retention, discharge and treatment of storm water.”

Section 11.3 provides guidance regarding stormwater management plans and assessment of potential impacts.

3.4 Township of Centre Wellington (2013)

Section A.2 of the Township of Centre Wellington Official Plan (2013) states the following regarding the relationship between the County of Wellington Official Plan and the Township of Centre Wellington Official Plan:

The County Official Plan provides a consistent set of planning policies for the entire County. The County Official Plan contains sufficient detail to provide appropriate official plan coverage for all of Centre Wellington.

The County Official Plan designates three major land use systems – the Greenlands system, the Rural system and the Urban system. The Greenlands system consists of natural heritage features. The Rural system consists of prime agricultural areas, and the Urban system consists of hamlets and urban centres.

In Centre Wellington, there are three Urban Centres, Fergus, Elora-Salem and Belwood. The remainder of the Township is part of the Greenlands and Rural systems.

The County Plan also provides for local municipalities to rely on the County’s planning policies or to develop their own more detailed policies for all or parts of their community. The Township of Centre Wellington has chosen to prepare its own local municipal plan.

However, in order to avoid duplication, the Township has determined that the policies and land use plans of the County Official Plan pertaining to the Greenlands and Rural systems are appropriate for Centre Wellington. It is not necessary for the Township to maintain its own local municipal plan policies for the Rural and Greenlands areas.

Therefore, this Municipal plan applies to the Urban Centres of Centre Wellington only. The County Official Plan will govern land use in the rural areas, and will set out the broad policies applying to the urban areas, including the determination of the rural-urban

boundaries, but the Township will provide detailed planning policies for land use within the boundaries of the Urban Centres.

The Clayton subject property is located within the Elora-Salem urban centre and is entirely within the Residential area, as shown on Schedule A-1 Land Use Plan of the Township's Official Plan.

Although Core Greenlands are not on or adjacent to the subject property on the Township's Official Plan, section C.3.9 states the following with regard to woodlands:

The Core Greenlands designation may include wooded areas, particularly where these are also associated with other Natural Heritage features such as wetlands. Otherwise, the Core Greenlands designation includes only upland woodlands over 10 hectares in area. These woodlands will be protected from development or site alterations that would negatively impact the woodlands or their ecological functions. Good forestry practices will be encouraged.

The Township also recognizes that smaller wooded areas also have local significance. Wooded areas contribute to erosion control, groundwater storage and wildlife habitat. Where practical, these smaller woodlots should be protected, even if they are not included in the Core Greenlands designation.

With regard to valleyland, section C.3.8 states the following:

All streams and valleylands will be protected from development or site alterations that would negatively impact on the stream or valleyland or their ecological functions.

Township of Centre Wellington Zoning By-law

With respect to stormwater infrastructure, Section 4.39 "Uses Permitted In All Zones" of the Township of Centre Wellington Zoning Bylaw (June 2022) states that:

Nothing in this By-Law shall apply to prevent or otherwise restrict in any way any of the following:

4.39.2 The installation or maintenance of a water-main, well, sanitary sewer main, storm sewer main, pumping station, gas main, pipeline, storm water management facility, lighting fixture, overhead or underground electrical services, cable television, telegraph or telephone line or associated tower or transformer, together with any installations or structures appurtenant thereto.

3.5 Grand River Conservation Authority Policies (2015) and Regulations (2006)

GRCA regulates hazard lands, watercourses, valleylands, shorelines, and wetlands, as well as land adjacent to these features under Ontario Regulation 150/06 (2006). These features, and the lands adjacent to them, are regulated by GRCA. There are no regulated features or lands adjacent to regulated features present on the Clayton subject property. A watercourse and surrounding wetland

traverses the Elora Sands property. These features, and the lands adjacent to them, are regulated by the GRCA.

Grand River Conservation Authority Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation Ontario Regulation 150/06 (GRCA 2015) includes policies for watercourses and areas of interference and provides guidance on the permitted uses and EIS requirements.

Per Section 8.4.14,

Stormwater Management Facilities within a wetland may be approved for flood control purposes provided that a comprehensive plan supported by the GRCA, demonstrates that all alternatives to avoid wetland loss have been considered and a flood control structure is required to alleviate an existing flood or erosion problem of a regional scope, and where it can be demonstrated that:

- a) all structural components and actively managed components of the stormwater management facility are located outside of the wetland,*
- b) a detailed study (scoped EIS) consistent with the comprehensive plan demonstrates how the hydrologic and ecological functions of the wetland will be protected, restored and/or enhanced,*
- c) pollution and sedimentation during construction and post construction are minimized using best management practices including site and facility design, construction controls, and appropriate remedial measures,*
- d) design and maintenance requirements as determined by the GRCA are met, and*
- e) works are constructed, repaired or maintained according to accepted engineering principles and approved engineering standards or to the satisfaction of the GRCA, whichever is applicable based on the scale and scope of the project.*

In addition to satisfying the necessary policies, a permit must be obtained for any development and/or site alteration within a regulated area.

3.6 Endangered Species Act (2007)

Ontario's ESA came into effect on June 30, 2008 and replaced the former 1971 Act. The ESA protects species listed as endangered and threatened by the Committee on the Status of Species at Risk in Ontario (COSSARO). The purposes of the ESA are:

- To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge;
- To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk; and
- To promote stewardship activities to assist in the protection and recovery of species that is at risk.

Section 9 of the ESA prohibits the killing, harming, harassing, possession, collection, buying and selling of extirpated, endangered, and threatened species on the Species at Risk in Ontario (SARO) List; and

Section 10 prohibits the damage or destruction of protected habitat of species listed as extirpated, endangered or threatened on the SARO List.

There are a number of species protected under the ESA that occur within the County of Wellington with some degree of regularity. Seasonally appropriate field studies are typically required to determine if these species are present or using the landscape to fulfill a part of their life cycle.

3.7 Federal Fisheries Act (1985)

Fish and fish habitat are protected under the Federal *Fisheries Act* (1985), which was last updated August 2019. In Ontario, Fisheries and Oceans Canada (DFO) manages fish habitat and the Ministry of Natural Resources and Forestry (MNRF) manages fisheries. Section 35 (1) of the Federal *Fisheries Act* precludes “No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat”.

The *Fisheries Act* defines habitat as “water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas”. Further DFO provides guidance regarding the need for their review of a project.

4. Existing Conditions

The Clayton subject property is approximately 12.49 ha in area and is situated within the Upper Grand watershed with rolling topography. The adjacent Elora Sands property is approximately 39.2 ha in area and is also situated within this watershed. Both are currently used primarily for agriculture.

4.1 Aquatic Resources

The Nichol Drain traverses Elora Sands in a westerly direction. It originates in the southeast portion of site and travels approximately 450 m before crossing under the driveway to the Gibson Field property via a steel pipe culvert measuring 3 m in diameter (**Photograph 1**). The drain then continues another ~100 m to the Sideroad 15 crossing via another steel pipe culvert measuring 4 m in diameter (**Photograph 2**). A visual aquatic habitat assessment was conducted by a Beacon Ecologist on April 19, 2022, commencing at 9:30 am and finishing by 12:00 pm. Weather conditions were 0°C and overcast with intermittent periods of snowfall.



Photograph 1. Steel Pipe Culvert Under the Driveway to The Property. Facing Upstream (April 19, 2022)



Photograph 2. Steel Pipe Culvert Traveling Under Sideroad 15. Facing Downstream (April 19, 2022)

Upstream of the Driveway Culvert

Upstream of the driveway culvert, the surrounding land use is agricultural. The stream is entrenched, with both the left and right bank rising approximately 1.5 m above the watercourse. The entrenchment spans ~10 m across. The stream meanders within its entrenchment through the farm field with a small riparian zone extending an average of 3 m from the watercourse on either bank (**Photograph 3**). The upstream portion of the watercourse had moderate flow and was split evenly between runs, riffles, and flats. No pools were present. The wetted width averages 1.2 m and the wetted depth averages 0.3 m. Substrate composition consists of 10% cobble, 25% gravel, 40% sand and 15% silt. There is good sorting of bed materials, with the cobble/gravel being the dominant substrate in riffles and runs and sand/silt being the dominate substrate in the flats.



Photograph 3. A View of The Upstream Portion of the Nichol Drain. Facing Upstream (April 19, 2022)

Riparian vegetation was covered in snow at the time of the visit, making it difficult to assess specific flora. In general, riparian vegetation was limited to grasses and a few scattered riparian trees that provided no shading to the watercourse. Small undercut banks measuring < 0.1 m were found throughout the reach. Large undercut banks measuring ~0.3 m were found immediately upstream of the driveway culvert. Dormant grasses that had fallen in the watercourse along the banks provide surface cover for fish throughout the length of the reach. Pockets of watercress were found intermittently throughout the reach (**Photograph 4**) indicating potential groundwater inputs. Four tile drain outlets were observed within the banks, draining into the watercourse. This provides a possible explanation for watercress in an agricultural field with no overhead cover.



Photograph 4. Watercress Found in the Upstream Portion of the Site (April 19, 2022)

Downstream of Driveway Culvert

Downstream of the driveway culvert, the surrounding land use on the left bank is the front yard of the farmhouse with manicured lawn. The surrounding land use on the right bank is a small woodlot separating the drain from Sideroad 15. The downstream portion is less entrenchment than the upstream portion. Immediately downstream of the driveway culvert the stream flows into a ~3 m wide pool (**Photograph 5**). The pool extends ~20 m from the culvert before condensing into a riffle with an average wetted width of 1 m until reaching the Sideroad 15 culvert. The substrate composition of the pool is 70% sand and 30% silt. The substrate composition of the riffle is 5% boulder, 30% cobble, 40% gravel, 20% sand and 5% silt.



Photograph 5. The Pool Immediately Downstream of The Driveway Culvert. Facing Downstream (April 19, 2022)



Photograph 6. The Riffle in The Downstream Reach. Facing Upstream (April 19, 2022)

The riparian zone extends ~5 m on both banks with the primary vegetation consisting of grasses, dogwood and raspberry bushes. Riparian trees only occupy the right bank within the riffle, providing 30% canopy cover the downstream reach. Small undercut banks measuring ~0.1 m can be found throughout the reach. No instream vegetation was observed in the downstream reach. The south side roadside ditch of Sideroad 15 was a dry, defined channel which conveys flow to the Nichol drain from beyond Irvine Street to the west. The Nichol Drain is ~1.5 m lower than the roadside ditch, providing a significant barrier to fish from the drain being able to occupy the culvert (**Photograph 7**).



Photograph 7. Photo Taken From The Roadside Ditch Showing The 1.5 m Drop to The Watercourse (April 19, 2022)

4.1.1 Fish Community

An electrofishing survey was conducted on July 19, 2006 as part of the Nichol Drain Sub-Watershed Study Phase 1 Existing Conditions Final Report (Aquafor Beech Limited 2008). In total, two stations were surveyed; the first was downstream of Beatty Line and the second was downstream of Irvine Street, which are upstream and downstream of Elora Sands. The fish capture information can be found in **Table 2**.

The Nichol Drain Sub-Watershed Study Phase 1 also recorded surface water temperature at the two stations. The results suggest that the Nichol Drain should be considered to have coldwater fishery potential and be classified as a coldwater stream for construction and stormwater management perspective. Watercress was visible during the Beacon investigation, supporting this designation.

Table 2. Fish Capture Information from Nichol Drain Sub Watershed Study Phase 1, Conducted in 2006

Common Name	Scientific Name	Individuals Caught by Station	
		Irvine Street	Beatty Line
Blacknose Dace	<i>Rhinichthys obtusus</i>	7	11
Brook Stickleback	<i>Culaea inconstans</i>	3	30
Central Stoneroller	<i>Campostoma anomalum</i>	2	0
Creek Chub	<i>Semotilus atromaculatus</i>	10	27
Iowa Darter	<i>Etheostoma exile</i>	0	2
White Sucker	<i>Catostomus commersonii</i>	0	2
Total		22	72

Information adapted from Nichol Drain Sub-Watershed Study Phase 1 Existing Conditions Final Report (Aquafor Beech Limited 2008).

4.2 Terrestrial Resources

4.2.1 Ecological Land Classification

Clayton Subject Property

The Clayton subject property was planted with row crops at the time of field study which has been depicted as Agricultural (AG) on **Figure 2**. This does not represent a formal botanical community according to the ELC methodology typically implemented for community delineation, though has been included as it reflects the land use.

No ELC communities are present on the subject property.

Off Site Community

A wooded area is present immediately west of the Clayton subject property and was dominated by coniferous trees such as Eastern White Cedar (*Thuja occidentalis*) and Eastern Hemlock (*Tsuga canadensis*). Other trees present included Paper Birch (*Betula papyifera*), Yellow Birch (*B. alleghaniensis*), Black Cherry (*Prunus serotina*) and Manitoba Maple (*Acer nedungo*) along the community edge. A desktop delineation was performed and is shown on Figure 2 as this area is beyond the property limits. The feature limits depicted are approximate.

The southern portion of this wooded area is associated with an occupied dwelling and includes a manicured understorey and backyard items, whereas the northern area dominated by Eastern White Cedar on a downward slope.

Elora Sands

Elora Sands consists of a single dwelling, agricultural fields, meadow marshes, hedgerows, cultural plantations, as well as a woodland that extends offsite to the south. The following subsections describe the vegetation communities on the Elora Sands property, which are illustrated in **Figure 2**.

4.2.1.1 Cultural Communities

Anthropogenic (ANT)

The dwellings associated maintained yards, and overall disturbed area can be classified as anthropogenic (**ANT**). The anthropogenic areas are located in the central and northern portions of the subject property. Within the anthropogenic area, there is a single unoccupied dwelling, two barns, and smaller outbuildings all in good condition, as well as maintained yard areas with mowed grass (**Photograph 8**). The anthropogenic area contains some planted ornamental tree species such as Black Locust (*Robinia pseudoacacia*), Norway Spruce (*Picea abies*) and White Spruce (*P. glauca*). In the yard areas, there are typical weedy species present such as Ground-Ivy (*Glechoma hederacea*), Dandelion (*Taraxacum officinale*), Red Clover (*Trifolium pratense*), Common Plantain (*Plantago major*), Hairy Crab Grass (*Digitaria sanguinalis*) and Kentucky Blue Grass (*Poa pratensis*).

Agricultural (AG)

There are three agricultural (**AG**) fields located on eastern and western portions of the subject property, divided by the Nichol Drain and hedgerows (**HE**). At the time of survey, prior to the growing season there were no planted crops.

Hedgerows (HE)

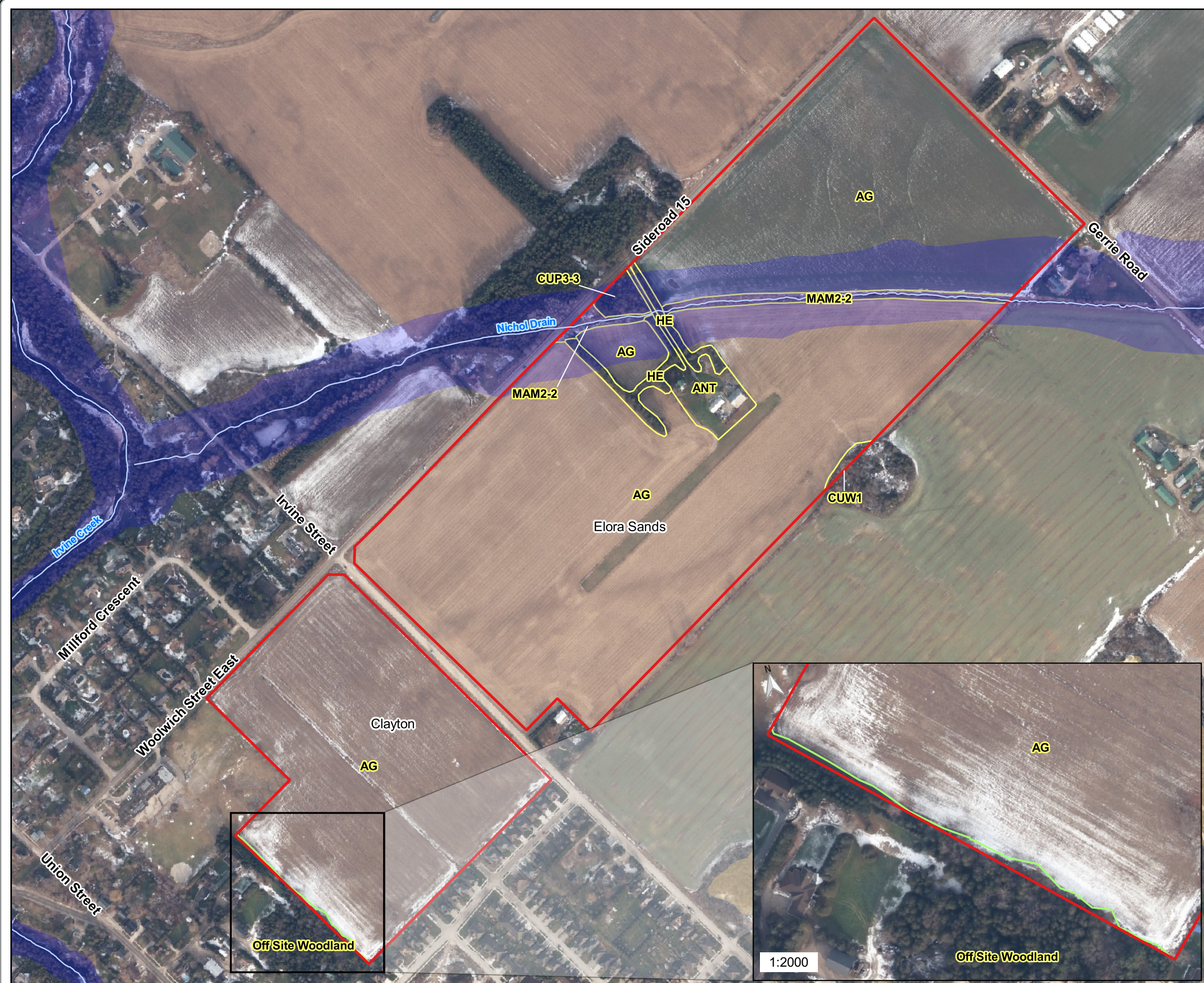
Hedgerows (**HE**) are located throughout the center portion of the subject property, lining the anthropogenic areas, driveway, and small agricultural field (**Photograph 9**). The hedgerows are composed of White Spruce, Norway Spruce and Colorado Blue Spruce (*Picea pungens*). The understory of the hedgerows is sparse and includes European Buckthorn (*Rhamnus cathartica*), Chokecherry (*Prunus virginiana*), and Riverbank Grape (*Vitis riparia*). There is minimal ground cover, that includes Garlic Mustard (*Alliaria petiolata*), Wood Avens (*Geum urbanum*), Common Motherwort (*Leonurus cardiaca*), and Broad-leaved Enchanter's Nightshade (*Circaea lutetiana*).

Elora Clayton EIS

Legend

- Subject Property
- Ecological Communities
- Watercourse (MNRF 2021)
- Staked Dripline
- Unevaluated Wetlands (MNRF 2021)
- Regulatory Floodplain (GRCA)

Code	Wetland Communities
MAM2-2	Reed-canary Grass Mineral Meadow Marsh
Code	Cultural Communities
CUP3-3	Scotch Pine Coniferous Plantation
CUW1	Mineral Cultural Woodland
Code	Other Communities
AG	Agricultural Crop
ANT	Anthropogenic



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Checked by: KQ

Scale: 1:5,000 0 100 200 m

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Ontario Orthoimagery Baselayer:
FBS Communities of Elora and Fergus (2018)



**Photograph 8. View of Unoccupied Dwelling and Anthropogenic Area (ANT) Facing North
(April 19, 2022)**



**Photograph 9. View of Hedgerow (HE) Along Northern Property Boundary Facing South
(April 19, 2022)**

Scots Pine Coniferous Plantation (CUP3-3)

This cultural community is located along the northern property boundary. It is dominated by Scots Pine (*Pinus sylvestris*), with a single row of White Spruce along the western limit (**Photograph 10**). The Scots Pine were planted over abundantly originally and there are some individuals declining from lack of space and light. The plantation understory is dense, composed primarily of European Buckthorn, and to lesser extent Tatarian Honeysuckle (*Lonicera tatarica*), Alternate-leaved Dogwood (*Cornus alternifolia*), Choke Cherry and sapling Green Ash (*Fraxinus pennsylvanica*) and Black Walnut (*Juglans nigra*). The ground cover within the community is composed of Garlic Mustard, Ground Ivy and Thicket Creeper (*Parthenocissus vitacea*). Along the edges of the community, there is Red Raspberry (*Rubus idaeus*), Blackberry (*R. allegheniensis*), Canada Goldenrod (*Solidago canadensis*), Smooth Brome (*Bromus inermis*) and Queen Anne's Lace (*Daucus carota*).



Photograph 10. View Outside of Scots Pine Cultural Plantation (CUP3-3) Facing Southwest (April 19, 2022)

4.2.1.2 Wetland Community

Reed Canary Grass Mineral Meadow Marsh (MAM2-2)

This community transects the central portion of the subject property, following the Nichol Drain from northwest to southeast. The community is dominated by Reed Canary Grass (*Phalaris arundinacea*), and to a lesser extent Elecampane (*Inula helenium*), Purple Loosestrife (*Lythrum salicaria*), Common Burdock (*Arctium minus*), Canada Goldenrod and Swamp Aster (*Symphotrichum puniceum*) (**Photograph 11**). There are a few scattered woody species that include European Highbush Cranberry (*Viburnum opulus*), Red Osier Dogwood (*Cornus sericea*), Pussy Willow (*Salix discolor*), Missouri River Willow (*S. eriocephala*), and sapling Manitoba Maple (*Acer negundo*). Majority of the woody vegetation

are found on the west side of the feature, near the (CUP3-3), however accumulatively they compose less than 25% of the total vegetation cover.



Photograph 11. View within Reed Canary Grass Mineral Meadow Marsh (MAM2-2) Facing East (April 19, 2022)

4.2.1.3 Woodland Community

Cultural Woodland (CUW1)

This forest community is located at the southern property boundary and continues off site towards the south. This is a successional woodland community, with canopy cover of less than 60%. The canopy is composed of White Poplar (*Populus alba*), Manitoba Maple, Crack Willow (*Salix x fragilis*), Common Apple (*Malus pumila*), Basswood (*Tilia americana*), Red Oak (*Quercus rubra*), and Eastern White Cedar (*Thuja occidentalis*). The understory is dense, and includes European Buckthorn, Choke Cherry, and Red-berried Elder (*Sambucus racemosa*). Where the canopy is open, the ground cover includes thicket species such as Red Raspberry, Blackberry, Goldenrod, Common Teasel (*Dipsacus fullonum*), and Queen Anne's Lace. Where the canopy cover is dense, the ground cover is composed of shade tolerant species such as Garlic Mustard, Jack-in-the-pulpit (*Arisaema triphyllum*), Broad-leaved Enchanter's Nightshade, Coltsfoot (*Tussilago farfara*), and Herb-Robert (*Geranium robertianum*) (**Photograph 12**).



Photograph 12. View Within Cultural Woodland (CUW1) Facing West (April 19, 2022)

4.2.1.4 Flora

Seventy (70) plant *taxa* were recorded on the subject property (**Appendix C**), with half (50%) being non-native plant species, reflecting the disturbed character of the site. There were no floral regulated or rare species encountered on the subject property.

The majority of native plant species are ranked provincially as S5 (Secure) with the exception of Green Ash, Black Walnut and Virginia Creeper (*Parthenocissus quinquefolia*) found within the CUP3-3 on the subject property, that are provincially ranked S4. All these species are common locally within Wellington County.

4.2.2 Breeding Birds

A total of 26 species of breeding birds were recorded on the Clayton and Elora Sands subject properties during the 2022 surveys (**Appendix D**). This avian diversity is reflective of the habitat diversity within the subject property discussed in the preceding sections, with a marsh community, hedgerows, an off-site deciduous woodland, cultural woodland and plantation, open agricultural fields and a residential area.

The majority of breeding records were common species regularly found in urbanizing areas of southern Ontario, including the most abundant in descending order: Savannah Sparrow (*Passerculus sandwichensis*), Red-winged Blackbird (*Agelaius phoeniceus*), Song Sparrow (*Melodia melospiza*), and American Robin (*Turdus migratorius*). Other species observed with multiple breeding territories included American Goldfinch (*Spinus tristis*) and Bobolink (*Dolichonyx oryzivorus*).

One bird typically associated with moist thicket habitats was present: Common Yellowthroat (*Geothlypis trichas*). A limited number of forest species were also recorded during the surveys: Red-eyed Vireo (*Vireo olivaceus*), Pine Warbler (*Setophaga pinus*) and Black-capped Chickadee (*Poecile atricapillus*).

Species of open habitat were associated with the agricultural fields and included: Killdeer (*Charadrius vociferus*), Eastern Kingbird (*Tyrannus tyrannus*), Savannah Sparrow, and Horned Lark (*Eremophila alpestris*).

Area-sensitive birds require larger tracts of suitable habitat in which to breed or have higher breeding success in larger areas of suitable habitat. Three such species were recorded: Pine Warbler, Savannah Sparrow and Bobolink. Pine Warbler typically breeds in pine or mixed pine-deciduous forests. One breeding territory of Pine Warbler was recorded in the Scots Pine coniferous plantation in the western portion of the Elora Sands property. The Savannah Sparrow is an inhabitant of open country or grassland habitat and seven distinct breeding territories were recorded during the surveys on the Elora Sands property throughout the hayfield. Bobolink breeds in similar habitat and three breeding territories were recorded during the surveys on the Elora Sands property.

One species, Bobolink, listed as threatened under the provincial ESA (2007) was observed breeding on the subject property. Three territories of Bobolink were recorded nesting in the southern agricultural hayfield on the Elora Sands property.

Barn Swallow (*Hirundo rustica*) is also a threatened species under the provincial ESA (2007) and was observed foraging above the hayfield and along the Nichol Drain on the Elora Sands property. Barn Swallow nest almost exclusively on human-made structures that are open such as open barns, under bridges and in culverts. A barn is present on the Elora Sands subject property however was not searched during the surveys as it is not part of the study area or proposed development limits. No other endangered or threatened bird species were recorded.

No species ranked as S1 through S3 (Critically Imperiled through Vulnerable) by the province were present during the 2022 breeding season.

4.2.3 Endangered or Threatened Species

Beacon has conducted field surveys and/or a general habitat assessment to assess the potential for each of the indicated species to be present. The results of the endangered and threatened species assessment are based on site review combined with knowledge of the habitat preferences and natural history of the species known to occur within 5 km of the subject property (**Table 3**).

Table 3. Threatened or Endangered Species with Potential to Occur on Subject Property

Species	Status on SARO List	Were Species and/or Habitat Documented during on-site Assessment?
Vascular Plants (Dicots)		
Butternut, <i>Juglans cinerea</i>	END	No , a targeted search for Butternut trees (<i>Juglans cinerea</i>) was conducted. This species is a provincially and nationally endangered tree species that, while still relatively common in southern Ontario, has been listed because the population has been declining due to the presence of a Butternut Canker disease. No Butternut were present on either of the subject properties.
Reptiles and Amphibians		
Blanding's Turtle, <i>Emydoidea blandingii</i>	END	No ; suitable habitat is not present on or adjacent to the subject properties.
Birds		
Bank Swallow, <i>Riparia riparia</i>	THR	No , vertical exposed banks (suitable habitat) are not present at this location.
Barn Swallow, <i>Hirundo rustica</i>	THR	No , suitable nesting habitat is not present on the subject properties within the proposed development limits and study area.
Chimney Swift, <i>Chaetura pelagica</i>	THR	No , suitable nesting habitat is not present on the subject properties within the proposed development limits and study area.
Bobolink, <i>Dolichonyx oryzivorus</i>	THR	Yes , suitable nesting habitat is present on the Elora Sands subject property within the agricultural fields where hay is growing. Seasonal studies confirmed three Bobolink breeding territories in the southern agricultural field on the Elora Sands property (AG, Figure 2). There is no suitable nesting habitat present on the Clayton subject property and seasonal studies confirmed that this species is not present on the Clayton property.
Eastern Meadowlark, <i>Sturnella magna</i>	THR	Although suitable habitat is present in the hay field on the Elora Sands property, seasonal studies confirmed this species is not present. There is no suitable nesting habitat present on the Clayton subject property and seasonal studies confirmed that this species is not present on the Clayton property.
Eastern Whip-poor-will, <i>Antrostomus vociferus</i>	THR	No , suitable nesting habitat is not present on the subject properties.
Least Bittern, <i>Ixobrychus exilis</i>	THR	No ; suitable habitat is not present on or adjacent to the subject properties.
Northern Bobwhite, <i>Colinus virginianus</i>	END	No , suitable nesting habitat is not present on the subject properties. In addition, the Northern Bobwhite is no longer found in the area where the subject property is located.

Species	Status on SARO List	Were Species and/or Habitat Documented during on-site Assessment?
Aquatic Species		
Wavy-rayed Lampmussel, <i>Lampsilis fasciola</i>	THR	No ; suitable habitat is not present on or adjacent to the subject property.
Mammals		
Endangered Bats <ul style="list-style-type: none"> • Little Brown Myotis, <i>Myotis lucifugus</i> • Northern Myotis, <i>Myotis septentrionalis</i> • Tri-colored Bat, <i>Perimyotis subflavus</i> • Eastern Small-footed Myotis, <i>Myotis leibii</i> 	END	No suitable overwintering habitat present. No structures present on the Clayton subject property to provide roosting habitat. Structures are present on the Elora Sands subject property, however these structures are not within the proposed development limits or study area. Potential roosting habitat may be present in the woodland adjacent to the Clayton subject property to the west within the protected Greenlands which will be retained.

SARO: Species at Risk in Ontario List

END: Endangered

THR: Threatened

Based on the above assessment in **Table 3** and on-site investigations, there is suitable nesting habitat for Bobolink present within the hay field on the Elora Sands subject property. This species is discussed in Section 5.5.

Potential roosting habitat for endangered bats is present within the woodland adjacent to the Clayton subject property to the west (**Figure 2**).

4.2.4 Significant Wildlife Habitat

SWH includes those natural areas, features, attributes and functions that represent the best examples of wildlife habitat within a municipality. The PPS (2020) defines SWH as follows:

Significant means: in regard to other features and areas, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system...

The responsibility for confirming SWH is assigned to the local or regional planning authority; however, municipalities often also rely upon proponents to identify “candidate SWH” through studies such as this EIS. Ultimately, it is the responsibility of the municipality to confirm SWH.

According to the *Significant Wildlife Habitat Technical Guidelines* (MNR 2000), there are four broad categories of SWH:

- Seasonal Concentration Areas of Animals;
- Rare Vegetation Communities or Specialized Habitat for Wildlife;
- Habitat for Species of Conservation Concern; and
- Animal Movement Corridors.

Within each of these categories, there are multiple subcategories of SWH, each of which is intended to capture a specialized type of habitat that may or may not be captured by other existing feature-based categories (e.g., significant wetlands, significant woodlands).

Neither the Township, nor the County have identified SWH on the property. During field investigations in 2022, the subject property was assessed for the presence of any SWH. Given the poor quality habitat present on the subject property and the lack of habitat criteria present to satisfy significant wildlife habitat categories, it was concluded that significant wildlife habitat is not present on the subject property.

4.2.5 Incidental Wildlife

A number of incidental wildlife species were recorded during field investigations on the subject properties. Mammal species recorded on the subject properties included Grey Squirrel (*Sciurus carolinensis*), Red Squirrel (*Sciurus vulgaris*), Eastern Chipmunk (*Tamias striatus*), Eastern Cottontail (*Sylvilagus floridanus*), Red Fox (*Vulpes vulpes*) and Groundhog (*Marmota monax*). Evidence of White-tailed Deer (*Odocoileus virginianus*) present on the subject properties was also recorded. In addition, Silvery Blue (*Glaucopteryx lygdamus*) and Eastern Forktail (*Ischnura verticalis*) were recorded on the subject properties.

Other common mammal species that are likely present on and adjacent to the subject property include Coyote (*Canis latrans*), Raccoon (*Procyon lotor*), Striped Skunk (*Mephitis mephitis*) and/or Meadow Vole (*Microtus pennsylvanicus*).

5. Natural Heritage Features and Constraints

The natural heritage features on and adjacent to the subject properties are discussed in the next paragraphs in the context of the proposed development, the results of the vegetation and wildlife surveys, and based on applicable policy and regulations related to natural heritage.

5.1 Woodland

The natural heritage feature present immediately west of the Clayton subject property is a woodland associated with the top of bank of the valleyland associated with Irvine Creek. According to the County of Wellington Official Plan, this woodland is part of the Greenlands system and is considered significant based on its size (1.2 ha). The Township of Centre Wellington Official Plan does not include this woodland in their Core Greenlands system and this woodland is not considered significant based on its smaller size (<10 ha). The Township, however, does recognize that smaller wooded areas have local significance and should be protected even if they are not included in the Core Greenlands designation. The limits of this woodland were captured through a natural feature staking exercise undertaken by Beacon on April 19, 2022 and confirmed by Ms. Cheryl-Anne Ross, an Ecologist from Aboud and Associates, a representative of the Township of Centre Wellington during a feature staking visit on June 22, 2022.

5.2 Valleyland

The valley present immediately west of the Clayton subject property is a built up valley with a terraced slope. The top of bank of this valley is estimated to be offset from the subject property boundary within the woodland. Only the portion of the valley associated with the woodland adjacent to the subject property is included in the County of Wellington's Greenlands system. This valley is not considered significant according to this official plan based on it being a built up valley without any water flowing through. The Township of Centre Wellington does not provide a specific definition of valleyland in their official plan, however they do state that all valleyland are to be protected from development or site alteration that would negatively impact on the valleyland and its ecological functions. The Township does not include any portion of the valley in the Core Greenlands system.

5.3 Nichol Drain

The Nichol Drain traverses the Elora Sands subject property in a westerly direction and is immediately surrounded by the meadow marsh community (**Figure 2**). The Nichol Drain has a varied morphology and substrate and its riparian conditions are associated with the adjacent meadow marsh. The results of the aquatic habitat assessment determined that the Nichol Drain provides coldwater fish habitat. The

roadside ditch would not be considered fish habitat as the drop from the ditch to the drain would act as a barrier to fish passage. The Nichol Drain and the lands adjacent to it are regulated by the GRCA.

5.4 Wetlands

There is one wetland community present on the Elora Sands subject property. This wetland community surrounds the Nichol Drain on both sides of the watercourse and runs parallel to the watercourse through the subject property (MAM2-2, **Figure 2**). This community has not been evaluated through the Ontario Wetland Evaluation System (OWES) and is not considered provincially significant. This wetland community and the lands adjacent to it are regulated by the GRCA.

5.5 Habitat of Endangered and Threatened Species

The provincially threatened Bobolink was confirmed breeding on the Elora Sands subject property within the southern agricultural field (AG, **Figure 2**) during the June 2022 breeding bird surveys. Three Bobolink breeding territories were recorded in this southern agricultural field. Under the habitat regulations for this species, it is possible to remove the habitat provided suitable new habitat is created within the same ecoregion. MECP has developed species specific guidelines and regulations to address habitat removals. Prior to removal of the meadow habitat, a plan must be developed in accordance with MECP guidelines to ensure compliance with the regulations.

The woodland adjacent to the Clayton subject property to the west potentially supports habitat for endangered bats. This woodland is part of the County of Wellington's Greenlands system and will be protected with the proposed development plan.

6. Proposed Development

6.1 Residential Development

The Draft Plan of Subdivision for the Elora Clayton proposed residential development includes the following:

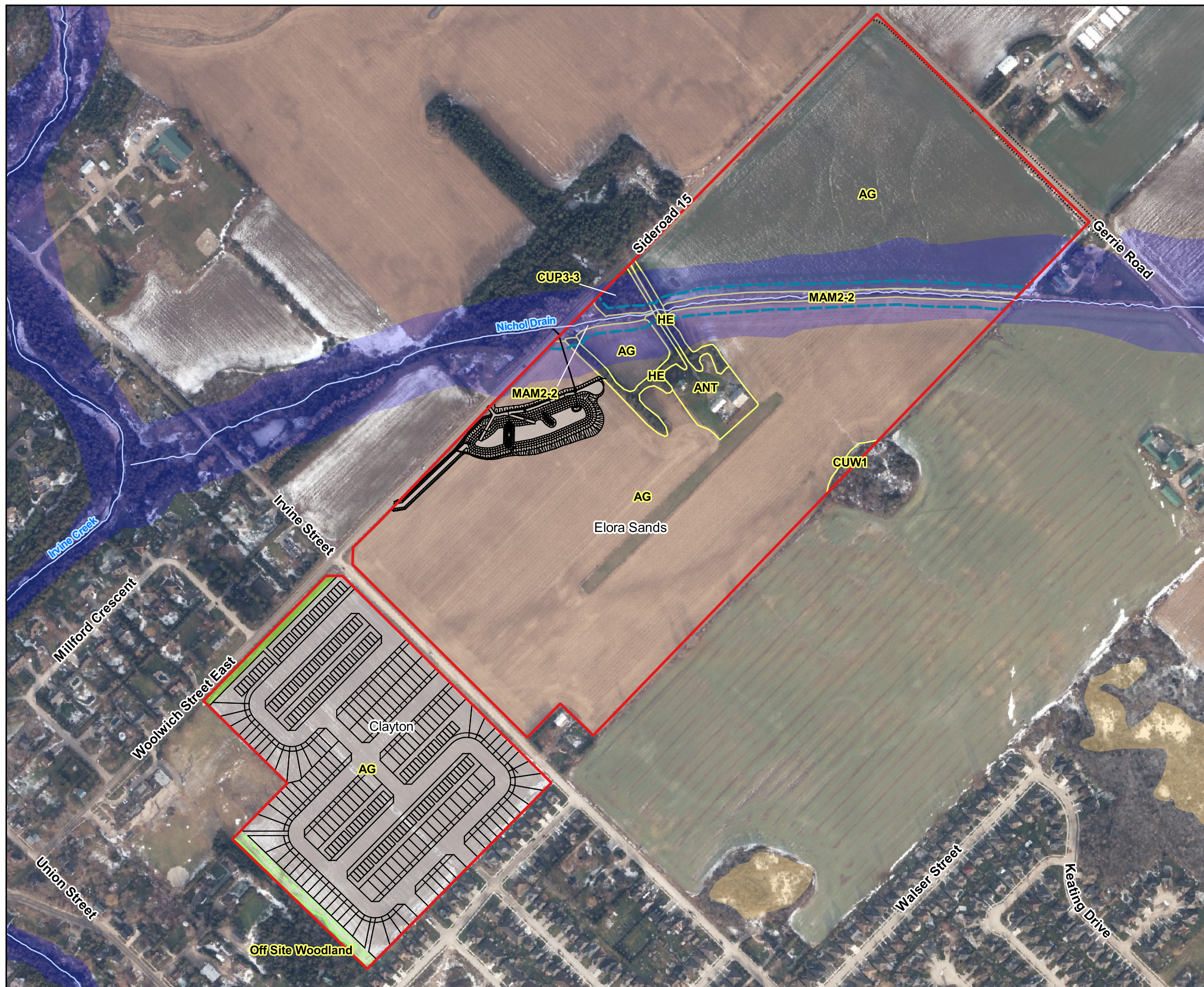
- Residential (Single family and townhouse) blocks;
- Open space and park blocks; and
- Municipal right-of-ways (all right-of-ways 20.0 m width).

The Clayton subject property is proposed to be developed as 146 single detached houses with 143 townhouses, one park block in the north and an open space block in the west. A stormwater management facility (SWMF) is proposed on the adjacent Elora Sands property (**Figure 3**).

Legend

- Subject Property
- Proposed Development
- Open Space Block
- Park Space Block
- Ecological Communities
- Watercourse (MNRF 2021)
- Staked Dripline
- Staked Dripline + 10 m
- Regulatory Floodplain (GRCA)
- Unevaluated Wetlands (MNRF 2021)
- Wetland + 10 m
- Encroachment into Dripline + 10 m (25 m²)

Code	Wetland Communities
MAM2-2	Reed-canary Grass Mineral Meadow Marsh
Code	Cultural Communities
CUP3-3	Scotch Pine Coniferous Plantation
CUW1	Mineral Cultural Woodland
Code	Other Communities
AG	Agricultural Crop
ANT	Anthropogenic



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Checked by: KQ

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Ontario Orthoimagery Baselayer:
FBS Communities of Elora and Fergus (2018)

6.2 Site Servicing

A Functional Servicing Report (FSR) has been prepared for the proposed residential development (MTE 2022a) and has been submitted as a companion report, the proposed servicing is summarized below.

6.2.1 Access

Urbanization of Irvine Street to a full urban cross-section has been contemplated within the DC bylaw. With the urbanization, the road profile will be updated to meet the Township's standards and specifications, as well as accommodate the proposed grading and stormwater management (SWM) strategy for the subject lands.

An emergency access ramp is proposed to provide access from Irvine Street directly to Street A. This ramp will also function as the major storm overland flow route for the subject lands, ultimately directing flows along Sideroad 15 to the proposed SWMF.

6.2.2 Stormwater Management

The proposed SWM strategy includes water quality, quantity, and erosion control within a proposed SWMF located in the adjacent Elora Sands as described by MTE (2022a):

Storm drainage for the subject lands will be provided through a combination of minor (storm sewer) and major (overland flow) drainage systems. The storm drainage catchment areas within the subject lands are conveyed via storm sewers along Irvine Street and Sideroad 15, to the proposed SWMF located within the Elora Sands. Water quality and quantity control will be provided within one (wet pond) SWMF. The proposed facility will provide peak flow attenuation of runoff from the contributing drainage area for storm events up to and including the 100-year storm event. Conveyance of Regional storm flows through the SWMF.

6.2.3 Sanitary Servicing

The proposed development can be adequately serviced for sanitary sewage through the existing Marr Drive sanitary sewer. The sewer within the subject land are proposed at 0.4% which is within the MOE guidelines and requires approval from the Township of Centre Wellington Director of Engineering as outlined in township standards

6.2.4 Water Supply

A number of connection points to the existing and future municipal watermain system are available to provide water supply for the proposed development. The Township is to confirm whether adequate pressure and flow is available and the sizing of proposed internal water distribution network.

7. Impact Assessment and Mitigation

The following sections present the potential effects of the proposed re-development and identify mitigation opportunities and compensation measures to be utilized to minimize the adverse effects of the project.

7.1 Impact Assessment

The proposed development is generally confined to lands that are actively managed for agricultural row crops. The subject properties are located in an area that is already highly developed and subject to existing urban stressors and disturbances (e.g., noise, light). Accordingly, it is anticipated that negative effects to natural heritage will be minimal. However, there are several potential effects that could occur if appropriate mitigation is not employed (a) during the construction phase and (b) following completion of construction, as discussed below.

Potential environmental effects of the proposed development of the property include:

- Encroachment into buffers to natural features;
- Removal of vegetation including trees, shrubs and cultural growth;
- Increase in impervious surfaces; and
- Mobilization of soil and sediment during construction.

7.1.1 Buffer Encroachments

A 10 m setback was applied to the woodland dripline surrounding the proposed development on the Clayton property as staked by Beacon and Ms. Cheryl-Anne Ross, an Ecologist from Aboud and Associates, a representative of the Township of Centre Wellington. A minor encroachment of 25 m² into the woodland dripline 10 m buffer is proposed for the residential development in the western portion of the proposed development (**Figure 3**). There will be no encroachment into the staked woodland dripline boundary.

The SWMF is proposed to outlet to the Nichol Drain, at the SR15 culvert on the north side. Construction methodology and potential impacts will be reviewed at detailed design.

7.1.2 Removal of Vegetation

The entire Clayton subject property is characterized as agricultural crop. There are trees growing along the edges of the agricultural field as well as a few scattered in the middle of the field.

An Arborist Reports was prepared by Beacon Environmental (2022) and outlines the tree removals for privately owned trees and street trees on the Clayton subject property. A total of 59 trees are proposed for removal at this location, the species, health and size characteristics of which are provided in the accompanying report. This includes the removal of 55 healthy trees along the Clayton subject property boundaries and the central portion of the property and an additional four trees that are dead, in poor

condition or in a state of decline that are posing a potential hazard. Trees proposed for removal include Black Walnut, Manitoba Maple, Sugar Maple, European Mountain-ash and Green Ash.

All of the species recorded in this area are common in the urban environment.

7.1.3 Increase in Impervious Surfaces

The proposed development plan represents an increase of impervious surfaces, with the bulk of the residential areas and proposed roads being converted from agricultural crops to hard surfaces on the Clayton subject property. Similarly, the proposed SWMF on the Elora Sands subject property represents an expansion of impervious surfaces with the SWMF being converted from agricultural crop to hard surfaces. Runoff from these areas, and reduced infiltration can cause thermal and erosion impacts to the receiving watercourse.

7.1.4 Soil Mobilization

Without mitigation construction works such as grading, grubbing and excavation have the potential to result in the movement of sediment into the adjacent woodlands, wetland and watercourse on both the Clayton and Elora Sands subject properties.

7.1.5 Noise and Light Effects on Wildlife

Acute and cumulative effects for a single development associated with noise and light are very difficult to quantify. Noise in particular may be a reason why landscape-level effects are known to occur within urban matrices even as natural areas are set aside. The effects of these stressors can be significant in previously undeveloped areas, however, this system is already heavily influenced by the light and noise of the nearby urban developments and major roadways. This has resulted in a suite of species that are already urban-tolerant.

7.2 Recommended Mitigation Measures

The proposed development is located within active agricultural fields and has been impacted historically by this land use; however the above potential impacts have been addressed and the following mitigation measures have been proposed to ensure protection and enhancement of the natural heritage system.

7.2.1 Mitigation by Design

The proposed development on the Clayton subject property will be built on land that is already disturbed habitat and is primarily agricultural. The proposed development footprint is located outside of the adjacent woodland features.

7.2.2 Buffers to Natural Features

As per the GRCA Policies and Regulations, a 10 m buffer has generally been applied to the woodland dripline adjacent to the proposed development. There will be no encroachment of the proposed development into the staked woodland dripline boundary. There will only be a minor encroachment into the woodland dripline 10 m buffer due to the provision of a regularized (i.e., straight) lot line of the proposed residential development. This will be mitigated through the provision of a greater area of buffer being provided overall and restoration/landscape plantings along the woodland dripline boundary. These restoration and landscape plantings will provide an additional area of 1,024 m² of naturalized buffer within the Open Space Block (Nak Design Strategies 2022).

7.2.3 Restoration and Landscape Plantings

In order to ensure no adverse affects on the off-site woodlot a landscape enhancement plan will be prepared for the buffer area at the detailed design phase.

These plantings will, over time, provide a robust edge to the feature limit and will increase the total area within the NHS resulting in a net benefit in both area and function.

7.2.4 Tree Inventory and Protection Plan

A number of trees were noted for retention and preservation in the accompanying Arborist Report (Beacon 2022). There is potential for damage to occur to trees during construction if proper precautions and protection measures are not implemented. Tree Protection Zones (TPZs) will be established on the ground consistent with tree protection fencing as outlined in the accompanying Arborist Report prior to the start of construction and shall remain in good condition throughout the duration of all site work. No grading, soil disturbance or surface treatments shall occur within the TPZ. No equipment or materials shall be stored inside the TPZ. If grading or site alteration is required within the TPZs an ISA certified arborist should be consulted. Where trees have been identified for retention, tree protection fencing will be erected and maintained throughout the duration of all construction activity. There shall be no disturbance within the tree protection zone

Further details are outlined in Arborist Report (Beacon 2022).

7.2.4.1 Tree Compensation

A total of 59 trees will be removed for the proposed development. Of these, four trees are almost dead and will be removed as potential hazard trees given safety concerns for nearby workers, vehicles and buildings. The remaining 55 trees are privately owned and street trees and will be compensated for by

the planting of native trees, as shown on the Landscape Plan (Nak Design Strategies 2022). The details of this tree compensation plan will be proposed at the detailed design phase. The street trees will be compensated for as described in the accompanying Arborist Report (Beacon Environmental 2022).

The Arborist Report recommends the following for tree replacement and compensation on private property:

*Any trees identified for removal should be replaced after construction activities are completed. Replacement trees should be healthy calliper stock (50 mm minimum), balled and burlap trees of suggested species listed in **Table 2** below, or any combination thereof. Planting of ash trees, which are host species for the EAB, should be avoided entirely.*

Additional measures regarding planting technique, soil requirements, and tree care are provided in the Arborist Report (Beacon 2022).

7.2.5 Stormwater Management Plan

Per the Preliminary Stormwater Management Report (MTE 2022b),

The majority of the onsite conveyance will be collected via a storm sewer network, ranging in size from 300mm to 1200mm diameter. Storm sewers draining into the SWMF will be sized to convey runoff for a 5-year storm event utilizing the City of Kitchener's (per the Township) IDF curve parameters in accordance with the current development standards. Roof areas will be directed to lot-level stone infiltration galleries to infiltrate the 25mm event where possible.

These conveyance systems will outlet into the proposed forebay within the SWMF at one location. The SWMF outlets into a control manhole sized to convey events up to and including the Regional Storm event. Flows within the control manhole are split into an infiltration gallery sized to attenuate the 25mm storm event. The remaining flows in excess of the 25mm storm event are conveyed over a series of internal control weirs that outlet towards the Nichol Drain adjacent to the SWMF. The outflow from the SWMF will be conveyed to the Nichol Drain via a 750mm diameter storm sewer discharging on the downstream side of Sideroad 15.

The infiltration galleries described above will also mitigate thermal impacts. Per MTE (2022b),

Since the vast majority of annual rainfall occurs in high frequency storm events, as a best management practice the 25 mm storm event was chosen for thermal mitigation as this event accounts for the majority of annual precipitation.

To achieve thermal targets, Lot Level Infiltration (in the form directing roof water flows to groundwater systems), End-of-Pipe Infiltration Gallery, a bottom draw outlet, and shading through landscape design of the SWMF will be implemented.

To protect downstream erosion and mitigate any flooding concerns in the Nichol Drain flows from the subject property will be restricted to the equivalent pre-development lands that were draining to the

Nichol Drain in pre-development conditions. MTE (2022b) completed a monthly surface runoff water balance analysis to confirm that existing surface water volume inputs into the Nichol Drain are maintained. Enhanced (previously Level 1) water quality control will be provided in the proposed SWMF, further protecting downstream water quality.

7.2.6 Groundwater

According to the Hydrogeological Assessment report (Soil-Mat Engineers & Consultants Ltd. 2022), the conditions on the Clayton subject property consisted mostly of permeable sand and there was little to no fluctuation in groundwater level between “wet” and “dry” seasons. These conditions allow for natural drainage and movement of groundwater and therefore service trenches will not present any conflict or impact to natural groundwater conditions. The exception might be deeper trunk sewers, which would warrant closer assessment as the detailed design proceeds.

Basement excavations are expected to remain above the water table with sufficient distance, and with proper consideration to the site grading and design founding elevations, it is not anticipated that foundation excavations would require ongoing groundwater control, other than typical perimeter weeping tile and sump pumps.

Soil-Mat Engineers & Consultants Ltd (2022) do not anticipate that dewatering would be greater than 400,000 L/day, and so the need for a permit to take water (PTTW) is not expected, though an Environmental Sector Activity Registration (EASR) may be required.

The Hydrogeological Report notes that the permeable sand deposit predominantly on the Clayton Lands, above the groundwater level, would afford an opportunity for natural infiltration of surface runoff, such as in infiltration galleries, rear yard infiltration swales or galleries, etc., and in this regard, Soil-Mat Engineers & Consultants Ltd (2022) supports the LIDs proposed by MTE (2022b) for maintaining infiltration on site.

With respect the proposed SWM pond, Soil-Mat Engineers & Consultants Ltd (2022) anticipate that the pool will have a permanent pool elevation near the observed groundwater level, and the use of an impermeable liner would be expected to be required.

7.2.7 General Mitigation Measures

Sediment and Erosion Control

Any grading or site alteration related activities should be confined to the established limit of development. Fencing at the development limit should be regularly inspected and maintained in good working order throughout the construction period. Fencing should be removed upon completion of construction after exposed soils have been stabilized. Standard Best Management Practices, including the provision of sediment control measures, should also be employed during the construction process.

Suggested site-specific ESC measures are outlined in the accompanying Preliminary Stormwater Management Report (MTE Consultants 2022b).

Timing of Vegetation Removal

The federal *Migratory Birds Convention Act* (1994) and provincial *Fish and Wildlife Conservation Act* protect the nests, eggs and young of most bird species from harm or destruction. As the breeding bird season in southern Ontario is generally from early April to August, the clearing of vegetation (including grasses and shrubs) should occur outside of these periods. For any proposed clearing of vegetation within these dates, or where birds may be suspected of nesting outside of typical dates, an ecologist should undertake detailed nest searches immediately prior to site alteration to ensure that no active nests are present.

Noise and Light Effects

Noise and light can cause negative effects on wildlife in areas that are previously undeveloped, or in cases where new development occurs adjacent to natural features. In this situation, the proposed development is occurring in an urbanized area which has been subject to both noise and light for an extended period. Urban-tolerant wildlife using this area are expected to already be well adapted to these conditions. Based on this assessment we do not anticipate a measurable effect on wildlife as a result of the proposed development and no further mitigation is proposed.

8. Policy Conformity

The natural heritage policy framework with respect to the Clayton and Elora Sands subject properties was detailed under Section 3 of this report.

8.1 Provincial Policy Statement

The Clayton and Elora Sands subject properties do not contain significant valleyland, significant wetlands, significant coastal wetlands, significant wildlife habitat, or significant ANSIs. Significant woodland is present adjacent to the Clayton subject property to the west and development has provided an appropriate 10 m buffer to this feature. This buffer will protect the woodland and its functions. Minor encroachments will be addressed through restoration plantings.

Fish habitat is present within the Nichol Drain watercourse on the Elora Sands subject property and development has provided an appropriate buffer to this feature. The construction of the SWMF outfall will be address with DFO, as necessary.

The provincially threatened Bobolink was confirmed breeding on the Elora Sands subject property within the southern agricultural field during the June 2022 breeding bird surveys. The removal of a portion of this habitat for the proposed SWMF will be addressed in conformance with the ESA.

Potential habitat for endangered bats is also associated with the significant woodlands adjacent to the Clayton subject property. This woodland is part of the County of Wellington's Greenlands system and will be protected with the proposed development plan.

8.2 A Place to Grow - Growth Plan for the Greater Golden Horseshoe (May, 2019)

The Clayton subject property, in its entirety, is located outside of the Greenbelt Area, and is not located within or directly adjacent to lands associated with the defined Natural Heritage System. The Clayton subject property is located within a defined Settlement Area.

8.3 County of Wellington Official Plan

The Clayton subject property is designated as urban centre, within the urban system and has a small patch of “Greenlands” directly adjacent to the subject property which overlaps with the woodlands present to the west of the Clayton subject property. These woodlands will be maintained with a 10 m buffer with the proposed development plan. The SWMF proposed on the Elora Sands property is permitted under Official Plan policies.

8.4 Township of Centre Wellington Official Plan

The Clayton subject property is located within the Elora-Salem urban centre and is entirely within the Residential area, as shown on the Township’s Official Plan. There are no Core Greenlands on or adjacent to the Clayton subject property according to this Official Plan. The Township does, however, recognize that smaller wooded areas have local significance and should be protected even if they are not included in the Core Greenlands designation. As stated in the previous section, the adjacent woodlands will be maintained with a 10 m buffer with the proposed development plan. Wellington’s Zoning By-law permits the construction of the SWMF on the Elora Sands property.

8.5 Grand River Conservation Authority

There are no regulated features or lands adjacent to regulated features present on the Clayton subject property. A watercourse and surrounding wetland traverses the Elora Sands property. These features, and the lands adjacent to them, are regulated by the GRCA. A 10 m buffer was applied to the wetland that surrounds the watercourse. The proposed SWMF on this property does not encroach into the buffer, however, the proposed outlet to the watercourse will be constructed within the road right of way at the existing culvert location on SR15.

8.6 Endangered Species Act

The provincially threatened Bobolink was confirmed breeding on the Elora Sands subject property within the southern agricultural field during the June 2022 breeding bird surveys. The removal of a portion of this habitat for the proposed SWMF will be addressed in conformance with the ESA.

Potential habitat for endangered bats is associated with the significant woodlands adjacent to the Clayton subject property. This woodland is part of the County of Wellington's Greenlands system and will be protected with the proposed development plan.

8.7 Federal Fisheries Act

The need to address the Federal *Fisheries Act* and provide DFO with a Request for Review will be determined upon detailed design of the SWMF outfall.

9. Conclusion

Beacon has conducted a background review and field investigations in order to prepare this EIS for the Draft Plan of Subdivision. Seasonal field studies including vegetation characterization, breeding bird surveys and aquatic habitat assessment were completed.

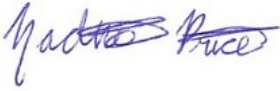
This EIS was prepared using information collected through a review of relevant background information and scoped field investigations in 2021 and 2022.

The report characterizes existing natural heritage features on the properties and addresses potential impacts of the proposed development on the natural heritage features and functions associated with the properties. Although the impacts outlined herein are limited in intensity and scope, a series of mitigation measures are also recommended to ensure that the natural heritage features and functions on the subject properties and in the adjacent lands are appropriately addressed.

The Draft Plan of Subdivision will be largely confined to portions of the sites that are in agricultural use. The appropriate natural heritage policy framework was reviewed with respect to the PPS, Growth Plan, County of Wellington Official Plan, Township of Centre Wellington Official Plan, as well as the GRCA regulations and ESA. From an ecological standpoint there are no sensitive features or functions that were identified through Beacon's work. Impacts are limited to tree removal outside of woodland features, removal of Bobolink habitat and potential impacts to Nichol Drain with respect to the SWMF outfall. All of these will be mitigated through the appropriate policies. Therefore, no negative effects are anticipated and enhancements to the subject property will be proposed as the project moves forward. General best practice mitigation measures including timing windows and erosion and sediment control should be undertaken and a restoration planting plan will be prepared. In summary, the proposed development is not anticipated to adversely impact the natural heritage resources and ecological functions associated with the natural heritage system provided the mitigation and enhancement measures recommended in this report are implemented.

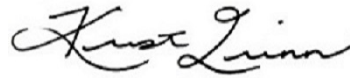
In this regard, the Draft Plan of Subdivision can proceed in accordance with the applicable natural heritage policies and regulations.

Report prepared by:
Beacon Environmental



Nadine Price, M.Sc.
Ecologist

Report reviewed by:
Beacon Environmental



Kristi Quinn, B.E.S., Cert. Env. Assessment
Principal, Senior Environmental Planner

Report reviewed by:
Beacon Environmental



Carolyn Glass, B.Sc. M.E.S.
Senior Ecologist

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Appendix A

GRCA Correspondence

April 21, 2022

BEL 221469

Ben Kissner
Resource Planner
Grand River Conservation Authority
400 Clyde Road
Cambridge, ON N1R 5W6

via email: Ben Kissner, Grand River Conservation Authority, bkissner@grandriver.ca
cc: Meagan Ferris, County of Wellington, meaganf@wellington.ca
Brett Salmon, Township of Centre Wellington, bsalmon@centrewellington.ca
Astrid Clos, Planning Consultants, astrid.clos@aicplanning.ca

Re: Updated Revised Terms of Reference for Environmental Impact Study; Elora Clayton, Elora

Dear Mr. Kissner:

Beacon Environmental Limited (Beacon) has prepared the following Terms of Reference for a Scoped Environmental Impact Study (EIS), for your review and comment, in support of a proposed development for the subject property, located at the southern quadrant of the intersection of Woolwich Street East and Irvine Street in Elora, Ontario (herein referred to as subject property; **Figure 1**), located in the Township of Centre Wellington in the County of Wellington. As part of the proposed development, a stormwater outfall is proposed to outlet to the Nichol Drain on the adjacent property (Gibson Field) on the eastern side of Irvine Street (**Figure 1**). This feature is regulated by the Grand River Conservation Authority (GRCA).

Based on a preliminary desktop review, the subject property is currently composed of agricultural fields with an adjacent woodland to the west. The adjacent property is also composed of agricultural fields, a residential area, some small wooded areas and a regulated municipal drain (Nichol Drain) traversing the property in a west to east direction. These will need to be confirmed in the field. The subject property and adjacent property are located within the Growth Plan for the Greater Golden Horseshoe (GGH) and are subject to municipal and regional official plans as well as the policies and regulations of the GRCA. An EIS is required to demonstrate that the proposed development complies with applicable environmental legislation, policies and regulations of the province, municipality and GRCA.

Beacon will prepare an EIS including the following key components:

- Background/Context;
- Identification of Natural Heritage Features and Functions;
- Impact Identification and Analysis;

- Response to Impacts; and
- Conclusion/Recommendations.

In preparing the scoped EIS, Beacon proposes to undertake the following tasks.

1. Background and Policy Review

Existing information will be compiled for the area, including aerial photographs, area mapping, GRCA information, Natural Heritage Information Centre (NHIC) and any other relevant data that are available. The following background report will be consulted for baseline and management guidance:

- Nichol Drain No. 1 Sub-Watershed Study: Phase 1 (Township of Centre Wellington 2008).

A desktop screening will be completed for Species at Risk (SAR) and potential Significant Wildlife Habitat through the review of background information. The relevant environmental/natural heritage policies that may apply to the subject property at a provincial and municipal level will be reviewed including the *Endangered Species Act* (2007; ESA), Provincial Policy Statement, County of Wellington Official Plan, Centre Wellington Official Plan, and GRCA regulations and policies.

2. Field Investigations

Environmental field investigations will focus on the areas of potential environmental impact within the project limits and will be undertaken to support a SAR screening exercise necessary to inform the development of SAR mitigation plans. Targeted biological surveys for flora, fauna and wildlife attributes are detailed below.

Vegetation Community Classification and Flora Survey

Beacon ecologists will conduct a single site visit to document the flora and vegetation communities on and immediately adjacent to the subject property and the adjacent property with a focus on the flora and vegetation communities surrounding the watercourse in spring 2022. Vegetation communities will be mapped and described following the Ministry of Natural Resources' Ecological Land Classification (ELC) for southern Ontario.

A Butternut (*Juglans cinerea*) survey will also be undertaken that will determine the presence and location of any Butternut, which is listed as endangered under the ESA. If any Butternut specimens are located, a health assessment will likely be required.

Breeding Bird Surveys

Two breeding bird surveys will be completed between late May to early July. This will consist of early morning roving surveys in which the entire site is walked to within 50 m of its edge and all representative habitats will be sampled. The surveys will occur at least one week apart during suitable weather.

Aquatic Habitat Assessment

The Nichol Drain has been identified on the adjacent property and will require field investigations to assess any potential impacts of a stormwater outfall. A visual assessment of aquatic habitats within the study area will be completed. Detailed fisheries surveys will not be undertaken as it is understood that background data is available.

Screening for Endangered and Threatened Species

A targeted search for species protected by the ESA and their potential habitat will be undertaken at the time of the vegetation surveys and breeding bird surveys. The Ministry of the Environment, Conservation and Parks (MECP) will be contacted for records of SAR in the area.

Incidental Wildlife Observations

During the site visit surveys, incidental wildlife observations will be recorded (i.e., scat, tracks, visual observation).

3. Data Analysis and Report Production

The EIS report will summarize the findings of the background review and field investigations, assess the function and significance of natural heritage features including the adjacent woodland, evaluate impacts of the proposed development, recommend mitigation and enhancement opportunities, and assess conformity with provincial, county, and GRCA policies and regulations. The EIS will be prepared according to the following outline:

Introduction – This section of the report will include introductory remarks regarding the purpose and scope of the study, a general description of the site and the site location, and a brief description of the proposed development.

Policy Review – The report will include a summary of applicable provincial, municipal and conservation authority natural heritage policies and legislation, and their relevance to the property, including the Provincial Policy Statement, County of Wellington, and GRCA policies and regulations.

Methodology – This section of the report will include a description of the methods used to characterize the site's natural heritage features and functions. A list of background information sources consulted as well as details of all field work and assessments will be included.

Findings – The report will provide a detailed description of existing conditions based on the results of the background review and field investigations. We will characterize existing biophysical resources on the subject property, including wildlife and vegetation communities using available information from relevant background resources and field work.

Description of Proposed Development – This section of the report will provide a description and map of the proposed development.

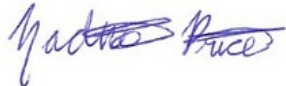
Impact Assessment – This section will evaluate potential direct and indirect impacts of the proposed development on the natural heritage features and ecological functions on/adjacent to the subject property. This will include an assessment of the potential direct and indirect stormwater impacts on the receiving watercourse.

Mitigation and Enhancement Recommendations – This section of the report will recommend mitigation measures to prevent, minimize, or off-set any identified impacts to natural heritage features. This will include an analysis of the proposed buffer distance to the adjacent woodland feature.

Policy Conformity - We will review the proposed development with respect to applicable provincial, municipal and conservation authority policies and regulations.

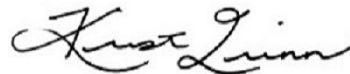
We propose that the approach described above be used as Terms of Reference for the Scoped EIS. Should you have any comments or questions, or if the GRCA has an interest in visiting the subject property, please do not hesitate to contact the undersigned at (647) 637-7586 or kquinn@beaconenviro.com.

Prepared by:
Beacon Environmental



Nadine Price, M.Sc.
Ecologist

Reviewed by:
Beacon Environmental





Kristi Quinn, B.E.S., Cert. Env. Assessment
Principal, Senior Environmental Planner



Legend

- Subject Property
- Watercourse (MNR 2021)



Site Location	Figure 1	
Elora Clayton EIS		
	Project: 221469 Last Revised: April 2022	
Client: Cachet Developments	Prepared by: SZ Checked by: KQ	
	1:11,000	Inset Map: 1:75,000
Contains information licensed under the Open Government License— Ontario Orthoimagery Baselayer: FBS Communities of Elora and Fergus (2018)		

From: [Ben Kissner](#)
To: [Nadine Price](#)
Cc: [Kristi Quinn](#); [Meagan Ferris](#); [Brett Salmon](#); [Astrid Clos](#)
Subject: RE: Terms of Reference - Elora Clayton - Elora - BEL 221469
Date: May 4, 2022 11:46:44 AM
Attachments: [image001.jpg](#)

Good morning,

I have received the confirmation from my colleagues in Ecology that the revised ToR has incorporated our comments and is acceptable.

Regards,
Ben

Ben Kissner, M.Sc., MCIP, RPP
Resource Planner
Grand River Conservation Authority

400 Clyde Road, PO Box 729
Cambridge, ON N1R 5W6
Office: 519-621-2763 ext. 2237
Toll-free: 1-866-900-4722
Fax: 519-621-4844

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From: Ben Kissner
Sent: April 22, 2022 11:15 AM
To: Nadine Price <NPrice@beaconenviro.com>
Cc: Kristi Quinn <kquinn@beaconenviro.com>; Meagan Ferris <meaganf@wellington.ca>; Brett Salmon <BSalmon@centrewellington.ca>; Astrid Clos <astrid.clos@ajcplanning.ca>
Subject: RE: Terms of Reference - Elora Clayton - Elora - BEL 221469

Good morning Nadine,

I have recirculated the updated ToR to my colleagues in Ecology. As soon as I have their response I will let you know.

Regards,
Ben

Ben Kissner, M.Sc., MCIP, RPP
Resource Planner
Grand River Conservation Authority

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From: Nadine Price <NPrice@beaconenviro.com>

Sent: April 22, 2022 10:37 AM

To: Ben Kissner <bkissner@grandriver.ca>

Cc: Kristi Quinn <kquinn@beaconenviro.com>; Meagan Ferris <meaganf@wellington.ca>; Brett Salmon <BSalmon@centrewellington.ca>; Astrid Clos <astrid.clos@ajcplanning.ca>

Subject: RE: Terms of Reference - Elora Clayton - Elora - BEL 221469

Good morning Ben,

Please find attached to this email the revised Terms of Reference letter to conduct an Environmental Impact Study for the proposed development of Elora Clayton. This revised Terms of Reference includes updates to address the comments that we received from the GRCA as well as the comments that we received from the Township of Centre Wellington.

Thanks,

Nadine

Nadine Price, M.Sc. / Ecologist

BEACON ENVIRONMENTAL

80 Main St. North, Markham, ON L3P 1X5

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www.beaconenviro.com

To protect our staff, families, clients and the greater community all Beacon staff are working remotely. We will continue to provide timely communications *via* email and telephone and are committed to providing the highest level of service possible during this challenging time.

From: Ben Kissner <bkissner@grandriver.ca>

Sent: Monday, March 21, 2022 2:56 PM

To: Nadine Price <NPrice@beaconenviro.com>

Cc: Kristi Quinn <kquinn@beaconenviro.com>; Meagan Ferris <meaganf@wellington.ca>; Brett Salmon <BSalmon@centrewellington.ca>; Astrid Clos <astrid.clos@ajcplanning.ca>

Subject: RE: Terms of Reference - Elora Clayton - Elora - BEL 221469

Good afternoon,

I have attached the comments from the GRCA for the revised Terms of Reference that was submitted for review.

Thank you,

Ben

Ben Kissner, M.Sc., MCIP, RPP
Resource Planner
Grand River Conservation Authority

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From: Nadine Price <NPrice@beaconenviro.com>
Sent: March 1, 2022 8:56 AM
To: Laura Warner <warner@grandriver.ca>
Cc: Kristi Quinn <kquinn@beaconenviro.com>; Meagan Ferris <meaganf@wellington.ca>; Brett Salmon <BSalmon@centrewellington.ca>; Astrid Clos <astrid.clos@ajcplanning.ca>
Subject: RE: Terms of Reference - Elora Clayton - Elora - BEL 221469

Good morning Laura,

Please find attached to this email a revised Terms of Reference letter to conduct an Environmental Impact Study for the proposed development of Elora Clayton (southern quadrant of Woolwich Street East and Irvine Street) in Elora. The revision includes the addition of a stormwater outfall which is proposed to outlet to the Nichol Drain on the adjacent property (eastern side of Irvine Street) as part of the proposed development.

Please advise if you are in agreement with this work plan.

Best regards,

Nadine Price, M.Sc. / Ecologist
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To protect our staff, families, clients and the greater community all Beacon staff are working remotely. We will continue to provide timely communications *via* email and telephone and are committed to providing the highest level of service possible during this challenging time.

From: Laura Warner <warner@grandriver.ca>
Sent: Tuesday, December 21, 2021 2:17 PM
To: Nadine Price <NPrice@beaconenviro.com>
Cc: Kristi Quinn <kquinn@beaconenviro.com>
Subject: RE: Terms of Reference - Elora Clayton - Elora - BEL 221469

Hi Nadine,

The subject property does not contain any features that are regulated by the GRCA and there are no additional natural heritage features of interest to GRCA on this property. As such, the GRCA does not have any comments to provide on the terms of reference.

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
lwerner@grandriver.ca | www.grandriver.ca

From: Nadine Price <NPrice@beaconenviro.com>
Sent: Wednesday, December 8, 2021 2:51 PM
To: Laura Warner <lwerner@grandriver.ca>
Cc: Kristi Quinn <kquinn@beaconenviro.com>
Subject: Terms of Reference - Elora Clayton - Elora - BEL 221469

Dear Ms. Warner,

Please find attached to this email our Terms of Reference letter to conduct an Environmental Impact Study for the proposed development of Elora Clayton (southern quadrant of Woolwich Street East and Irvine Street) in Elora.

Please advise if you are in agreement with this work plan.

Best regards,

Nadine Price, M.Sc. / Ecologist
BEACON ENVIRONMENTAL
80 Main St. North, Markham, ON L3P 1X5
T) 905.201.7622 x224 C) 647.461.4359
www.beaconenviro.com

Beacon thanks all of our clients for their support in 2021 and we hope that our clients and our suppliers enjoy a great holiday season! In lieu of holiday greeting cards, we have made a donation to Kids Help Phone. Please note that our offices are closed from December 25th to January 3rd inclusive.

To protect our staff, families, clients and the greater community all Beacon staff are working remotely. We will continue to provide timely communications *via* email and telephone and are committed to providing the highest level of service possible during this challenging time.

Appendix B

Breeding Bird Survey Methods

Appendix B

Breeding Bird Survey Methods

Beacon Environmental Limited (Beacon) staff undertake hundreds of breeding bird surveys every year across the province and have done so for many years. These are in support of federal, provincial and municipally regulated and or reviewed projects. We have not in the past had an issue raised with our site specific survey techniques.

Contrary to the information provided by the TRCA (cite) there is no “standard” for breeding bird surveys. We have seen in various sources the Ontario Breeding Bird Atlas (OBBA) methodology raised as a potential standard. In our opinion this method is not scientifically valid for site specific work. The following paragraphs will provide a rationale for this position and explain our methods comparatively.

The OBBA uses two methods for collecting bird data.

One method is a walkabout within the area of interest to record presence and evidence of breeding, some birds that are present but without evidence of breeding may be considered “possible” breeders rather than “probable” or “confirmed”. This is absence/presence.

The second method is the point count. Point counts are used to assess abundance (but not at the site level). Birds are not attracted to the counter in any way. The protocol was devised mainly to make the process easy for counters and easy to standardise. However, the abundance data created are aggregated across hundreds of counts. This is necessary for birds due to the high variability in detections (and presence) and annual variability creating, substantial variance. The atlas uses this approach to enable comparison of data for large geographic areas across years using a repeatable methodology. The methodology is geared towards large data sets being compared over time, not to site specific investigations. Generally speaking, and according to our discussions in the past with Environment Canada statisticians, point counts need to be in the order of 100 counts before they become very useful for comparing abundance data across space or time, this is due to issues of power as previously discussed here. There are many critiques in the literature on the use of point counts, especially for small data sets.

Beacon staff conduct surveys where the primary objective is to establish existing conditions, not to compare data over time.

The objective then is typically not to provide a multi-year monitoring protocol that can allow comparative data to be generated across vast geographic areas. Even if it were, point counts would not be able to provide such data at the site level, for reasons discussed above. Beacon uses a roving transect approach whereby most or all portions of a subject property are approached to within approximately 50 m. The transects are effectively 50 m each side of the observer. All potentially breeding birds are mapped. Transects are much more efficient than point counts as they record all data at any time during the site visit, not just while at timed point points. The Beacon distance used for detection (50 m) is half that of the OBBA method, thus overall, Beacon surveys provide much greater density of coverage. We also do not have the issue of bias, as point counts to be representative must be selected randomly. Species that are less common are easily missed by point counts and more easily encountered with a roving transect. Further, Beacon takes the conservative position that any species present during the breeding season, in suitable habitat and showing any disposition towards breeding (e.g., song, pair),

be considered breeding. This is a conservative approach that is entirely appropriate for site specific investigations. We use the highest “pair” value from two or three site visits, which starts to approach the gold-standard of bird surveys methods (i.e., territory mapping).

In summary the Beacon approach provides:

- Greater density and granularity of data;
- Increases site specific coverage sometimes by an order of magnitude and thereby increases the likelihood of detection, covering typically >90% of a subject property;
- A roving transect covers the entire site not just a portion of the site, most sites will support only a few 100 m point counts 250 m apart, sampling perhaps less than 50% of a subject property;
- Less common species are more likely to be detected;
- The ability to attract birds to the observer without compromising the data set; and
- Conservative position that birds present in suitable habitat are likely breeding.

The provincial point count system as devised for the Atlas data is meant to compare large standardised data sets over time (and may be appropriate for that purpose) but it is not an appropriate scientific methodology for site specific investigations of the kind that we undertake on a regular basis.

We recommend for further reading: Monitoring Bird Populations by Point Counts (Ralph et al. US Forest Service General Technical Report PSW-GTR-149, Pacific Southwest Research Station, Albany, CA.) and Bird Census Techniques by Bibby et al. 1992. Academic Press Limited.

Appendix C

Vascular Plant Species List

Appendix C

Vascular Plant Species List

Scientific Name	Common Name	SRank
<i>Acer negundo</i>	Manitoba Maple	S5
<i>Acer saccharum</i>	Sugar Maple	S5
<i>Acer x freemanii</i>	(<i>Acer rubrum</i> X <i>Acer saccharinum</i>)	SNA
<i>Alliaria petiolata</i>	Garlic Mustard	SE5
<i>Ambrosia artemisiifolia</i>	Common Ragweed	S5
<i>Arctium minus</i>	Common Burdock	SE5
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	S5
<i>Asclepias syriaca</i>	Common Milkweed	S5
<i>Bromus inermis</i>	Smooth Brome	SE5
<i>Carex pedunculata</i>	Long-stalked Sedge	S5
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	S5
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	S5
<i>Cornus sericea</i>	Red-osier Dogwood	S5
<i>Daucus carota</i>	Wild Carrot	SE5
<i>Digitaria sanguinalis</i>	Hairy Crabgrass	SE5
<i>Dipsacus fullonum</i>	Common Teasel	SE5
<i>Festuca rubra ssp. rubra</i>	Red Fescue	SE5
<i>Fraxinus pennsylvanica</i>	Red Ash	S4
<i>Geranium robertianum</i>	Herb-Robert	S5
<i>Geum urbanum</i>	Wood Avens	SE3
<i>Glechoma hederacea</i>	Ground-ivy	SE5
<i>Inula helenium</i>	Elecampane	SE5
<i>Juglans nigra</i>	Black Walnut	S4?
<i>Leonurus cardiaca</i>	Common Motherwort	SE5
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	SE5
<i>Lythrum salicaria</i>	Purple Loosestrife	SE5
<i>Malus pumila</i>	Common Apple	SE4
<i>Medicago sativa</i>	Alfalfa	SE5
<i>Melilotus officinalis</i>	Yellow Sweet-clover	SE5
<i>Nasturtium officinale</i>	Watercress	SE
<i>Nepeta cataria</i>	Catnip	SE5
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel	S5
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	S4?
<i>Parthenocissus vitacea</i>	Thicket Creeper	S5
<i>Phalaris arundinacea</i>	Reed Canarygrass	S5
<i>Picea abies</i>	Norway Spruce	SE3
<i>Picea glauca</i>	White Spruce	S5
<i>Picea pungens</i>	Blue Spruce	SE1
<i>Pinus sylvestris</i>	Scots Pine	SE5
<i>Plantago lanceolata</i>	English Plantain	SE5
<i>Plantago major</i>	Common Plantain	SE5
<i>Poa pratensis</i>	Kentucky Bluegrass	S5
<i>Populus alba</i>	White Poplar	SE5
<i>Prunus virginiana</i>	Chokecherry	S5
<i>Quercus rubra</i>	Northern Red Oak	S5

Scientific Name	Common Name	SRank
<i>Ranunculus acris</i>	Common Buttercup	SE5
<i>Rhamnus cathartica</i>	European Buckthorn	SE5
<i>Robinia pseudoacacia</i>	Black Locust	SE5
<i>Rubus allegheniensis</i>	Allegheny Blackberry	S5
<i>Rubus idaeus</i>	Red Raspberry	S5
<i>Salix discolor</i>	Pussy Willow	S5
<i>Salix eriocephala</i>	Cottony Willow	S5
<i>Salix x fragilis</i>	(<i>Salix alba</i> X <i>Salix euxina</i>)	SNA
<i>Sambucus racemosa</i>	Red Elderberry	S5
<i>Solidago canadensis</i>	Canada Goldenrod	S5
<i>Sonchus oleraceus</i>	Common Sow-thistle	SE5
<i>Symphyotrichum lanceolatum</i>	Panicled Aster	S5
<i>Symphyotrichum novae-angliae</i>	New England Aster	S5
<i>Symphyotrichum puniceum</i>	Purple-stemmed Aster	S5
<i>Taraxacum officinale</i>	Common Dandelion	SE5
<i>Thuja occidentalis</i>	Eastern White Cedar	S5
<i>Tilia americana</i>	Basswood	S5
<i>Trifolium pratense</i>	Red Clover	SE5
<i>Tsuga canadensis</i>	Eastern Hemlock	S5
<i>Tussilago farfara</i>	Coltsfoot	SE5
<i>Ulmus americana</i>	White Elm	S5
<i>Verbascum thapsus</i>	Common Mullein	SE5
<i>Viburnum lantana</i>	Wayfaring Viburnum	SE2
<i>Viburnum opulus ssp. opulus</i>	Cranberry Viburnum	SE3?
<i>Vitis riparia</i>	Riverbank Grape	S5

Appendix D

Breeding Bird Species List

Appendix D

Breeding Bird Species List

Common Name	Scientific Name	Status				# Breeding Pairs/Territories
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK ^b	Area-sensitive (OMNR)c	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>			S5		F
Mallard	<i>Anas platyrhynchos</i>			S5		F
Killdeer	<i>Charadrius vociferus</i>			S5		1
Ring-billed Gull	<i>Larus delawarensis</i>			S5		F
Mourning Dove	<i>Zenaida macroura</i>			S5		1
Eastern Phoebe	<i>Sayornis phoebe</i>			S5		1
Eastern Kingbird	<i>Tyrannus tyrannus</i>			S4		1
Horned Lark	<i>Eremophila alpestris</i>			S5		1
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	S4		F
Blue Jay	<i>Cyanocitta cristata</i>			S5		2
American Crow	<i>Corvus brachyrhynchos</i>			S5		1
Black-capped Chickadee	<i>Poecile atricapillus</i>			S5		2
House Wren	<i>Troglodytes aedon</i>			S5		1
American Robin	<i>Turdus migratorius</i>			S5		4
Gray Catbird	<i>Dumetella carolinensis</i>			S4		1
Cedar Waxwing	<i>Bombycilla cedrorum</i>			S5		1
European Starling	<i>Sturnus vulgaris</i>			SE		2
Red-eyed Vireo	<i>Vireo olivaceus</i>			S5		1
Pine Warbler	<i>Setophaga pinus</i>			S5	A	1
Common Yellowthroat	<i>Geothlypis trichas</i>			S5		1
Indigo Bunting	<i>Passerina cyanea</i>			S4		1
Chipping Sparrow	<i>Spizella passerina</i>			S5		2
Vesper Sparrow	<i>Poocetes gramineus</i>			S4		1
Savannah Sparrow	<i>Passerculus sandwichensis</i>			S4	A	7

Common Name	Scientific Name	Status				# Breeding Pairs/Territories
		National Species at Risk COSEWIC ^a	Species at Risk in Ontario Listing ^a	Provincial breeding season SRANK ^b	Area-sensitive (OMNR) ^c	
Song Sparrow	<i>Melospiza melodia</i>			S5		6
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4	A	3
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			S4		7
Common Grackle	<i>Quiscalus quiscula</i>			S5		1
Brown-headed Cowbird	<i>Molothrus ater</i>			S4		1
American Goldfinch	<i>Spinus tristis</i>			S5		3

Field Work Conducted On: June 8, 20 and 29, 2022

F indicates foraging or flyover (non-breeding) birds

Number of Species: 30 (26 breeding, 4 flyover/foraging)

Number of (provincial and national) Species at Risk: 1 (Bobolink); Barn Swallow was observed foraging on site but not breeding

Number of S1 to S3 Species: 0

Number of Area-sensitive Species: 3 (Pine Warbler, Savannah Sparrow and Bobolink)

KEY

a COSEWIC = Committee on the Status of Endangered Wildlife in Canada

a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario)

END = Endangered, THR = Threatened, SC = Special Concern

^b SRANK (from Natural Heritage Information Centre) for breeding status if:

S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)

SNA (Not applicable...because the species is not a suitable target for conservation activities'; includes non-native species)

^c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.