

Natural Heritage Evaluation – 2095 County Road 6, Hall's Glen, Douro-Dummer, County of Peterborough, Ontario



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Prepared for:
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Cambium Reference: 15726-001

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1.0 Introduction

Cambium Inc. (Cambium) was retained by Paul Kidd (Client) to conduct a Natural Heritage Evaluation at 2095 County Road 6, Hall’s Glen, Douro-Dummer, County of Peterborough, Ontario (Figure 1). The proposed development includes a single residential severance to include the existing dwelling, and the establishment of a new building envelope on the retained lot for the construction of a new dwelling. Based on the proposed development, the entire property will be considered the Site for this report.

A Natural Heritage Evaluation (NHE; the Study) is required to address potential impacts to natural heritage features identified during the preliminary development review process, as required by the Provincial Policy Statement, 2020 (PPS) and the Growth Plan for the Greater Golden Horseshoe, 2020 (GPGGH). The Site contains or is adjacent to (within 120 m of) the following mapped/known natural heritage and hydrologic features: intermittent watercourse, surface water features (ponds), seepage areas and springs, unevaluated wetlands, woodlands. The Site is within Ecoregion 6E of Ontario (Crins, Gray, Uhlig, & Wester, 2009). The Site is outside of settlement area boundaries.

The Site is within the jurisdiction of the Otonabee Region Conservation Authority (ORCA) and their regulated area overlaps the Site. The regulated area is associated with the mapped unevaluated wetland on the Site and adjacent lands. As the Site contains wetlands, the Study will consider regulations on development as imposed by the local Conservation Authority’s Regulation under the Conservation Authorities Act, 1990.

The Endangered Species Act, 2007 (ESA) protects endangered and threatened species and their habitats from harm or destruction. Habitat for endangered and threatened species is also afforded protection under provincial natural heritage policy; however, it is ultimately the proponent’s responsibility to ensure that no harm to these species or their habitats occurs during their planned activities. This Study includes a habitat-based screening for species of conservation concern to determine if the Site has suitable habitat for any provincially or federally listed species at risk (SAR).



This Study has been prepared to meet application submission standards for the proposed development of the Site, and includes: the results of the background review, a description of methods used to collect site specific natural heritage information, and a summary of field investigations conducted at the Site. Information has been compiled to evaluate the existing natural heritage features on and adjacent to the Site, including an assessment of the significance and sensitivity of these features. An assessment of the form and function of natural heritage features on and adjacent to the Site is provided, which includes an evaluation of the potential for impact to these features in relation to the proposed development. Data was interpreted in accordance with provincial and municipal policies and regulations to determine potential constraints to development, to guide the decision-making process and address approval authority requirements.

1.1 Terms of Reference

A Preliminary Severance Review (PSR) for the proposed development was provided by the County of Peterborough, dated August 16, 2019. The PSR indicated the requirement of an NHE to support the severance application.

The Terms of Reference (TOR) were circulated to Matt Wilkinson, Planner at ORCA, and a response was received dated August 22, 2022. The response from ORCA requested that the Study ensures the future building envelope has a sufficient buffer from natural heritage and hydrologic features and provides suitable mitigation measures. Relevant correspondence and documentation are included in Appendix A.

1.2 Summary of Proposed Development

The Site is approximately 18.6 ha with approximately 525 m of frontage on County Road 6. The Site is currently developed with a single dwelling, barn, and outbuildings; several fields on the Site are used for agricultural purposes. Adjacent land uses are primarily rural, residential, and agricultural.

The proposed development includes a single residential lot severance of approximately 1 ha, which will contain the existing dwelling, and one retained lot of approximately 18 ha. The Client



is also seeking to establish a new building envelope on the retained lands for the construction of a new dwelling, to be located near the existing laneway and barn in the southeast portion of the Site.

The Consent Sketch prepared by EcoVue Consulting Services Inc. for the proposed development is provided in Appendix B. This Consent Sketch has been prepared to reflect the recommendations provided herein.



2.0 Natural Heritage Policy Context

The evaluation of the form and function of natural heritage features present on, and adjacent to, the Site was undertaken to meet the requirements of the following legislation, plans, and policies:

- Provincial Policy Statement (PPS), 2020.
- Growth Plan for the Greater Golden Horseshoe (GPGGH), 2020.
- Otonabee Conservation Watershed Planning & Regulations Policy Manual.
- County of Peterborough Official Plan, 2020.
- Township of Douro-Dummer Official Plan, 2020.
- Township of Douro-Dummer Zoning By-law, 2022.
- Provincial Endangered Species Act (ESA), 2007.
- Federal Fisheries Act, 2019.
- Federal Species at Risk Act (SARA), 2002.
- Federal Migratory Birds Convention Act (MBCA), 1994.

This Study includes an assessment of conformity of the proposed development with relevant natural heritage policies. A summary of policy conformity is included in Section 6.0.

2.1 Provincial Policy Statement, 2020

The PPS provides direction on matters of provincial interest related to land use planning and development. Section 2.1 of the PPS (Ministry of Municipal Affairs and Housing, 2020) protects the form and function of eight types of significant natural heritage features, which include:

- significant wetlands.
- significant coastal wetlands.
- significant woodlands (limited to Ecoregions 6E and 7E).
- significant valleylands.
- significant wildlife habitat (SWH).
- significant areas of natural and scientific interest (ANSI).



- fish habitat.
- habitat of endangered and threatened species.

Given their significance, development and site alteration are prohibited within provincially significant wetlands (PSW) in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development and site alteration in fish habitat and the habitat of endangered and threatened species shall only be permitted in accordance with provincial and federal requirements. Development and site alteration within other natural heritage features and on lands adjacent to all natural heritage features may be permitted if it is demonstrated that there will be no negative impacts on the feature or its ecological function. The PPS defines “development” as the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the Planning Act. “Site alteration” means activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site.

Section 2.2 of the PPS protects the quality and quantity of water, including the form and hydrologic function of sensitive surface water features and sensitive ground water features. Focus is given to maintaining hydrologic linkages and functions at the watershed scale to minimize potential negative impacts, including cross-jurisdictional and cross-watershed impacts of development. Mitigative measures and/or alternative development approaches should be considered for development near water features.

2.2 Growth Plan for the Greater Golden Horseshoe, 2020

The Greater Golden Horseshoe is one of the most dynamic and fast-growing regions in North America. To address the challenges of increased development within the area, the Growth Plan for the Greater Golden Horseshoe, 2020 (GPGGH) builds on the PPS “*to establish a unique land use planning framework for the Greater Golden Horseshoe that supports achievement of complete communities, a thriving economy, a clean and healthy environment, and social equity*” (Ministry of Municipal Affairs and Housing, 2020). In general, the GPGGH seeks to preserve agricultural lands, water resources, and natural areas by directing growth to settlement areas as defined in municipal Official Plans.



The GPGGH contains policies regarding a provincial Natural Heritage System (NHS), key hydrologic features (KHF), key hydrologic areas (KHAs), and key natural heritage features (KNHFs) (Table 1). Policies that reference the provincial NHS apply once the municipal Official Plan has incorporated the provincial NHS into their schedules; until that time, outside of settlement areas, the policies that reference the NHS will apply to the natural heritage systems identified in Official Plans that were approved and in effect as of July 1, 2017, to the extent that such systems existed at that time. Section 4.2.3 of the GPGGH states that, outside of settlement areas, development or site alteration is generally not permitted in KNHFs that are part of the NHS or in KHFs. Section 4.2.4 states that, outside of settlement areas, a proposal for new development or site alteration within 120 metres of a KNHF within the NHS or a KHF will require a Natural Heritage Evaluation or Hydrologic Evaluation that identifies a suitable vegetation protection zone (i.e., a development setback). For KHFs, fish habitat, and significant woodlands the vegetation protection zone can be no less than 30 m measured from the outside boundary of the feature.

Table 1 Protected Features of the GPGGH

Key Hydrologic Features	Key Natural Heritage Features	
Permanent Streams	Habitat of Endangered and Threatened Species	Significant Wildlife Habitat
Intermittent Streams	Fish Habitat	Sand Barrens
Inland Lakes and their Littoral Zones	Wetlands	Savannahs
Seepage Areas and Springs	Life Science Areas of Natural and Scientific Interest (ANSI)	Tallgrass Prairies
Wetlands	Significant Valleylands	Alvars
	Significant Woodlands	

This Study is intended to address the requirements of a Natural Heritage Evaluation (NHE) under the GPGGH.



2.3 Conservation Authority Regulation

“Conservation Authorities are community-based watershed management agencies, whose mandate is to undertake watershed-based programs to protect people and property from flooding, and other natural hazards, and to conserve natural resources for economic, social and environmental benefits” (Conservation Ontario, 2022). Conservation Authorities each have their own Ontario Regulation under the *Conservation Authorities Act, 1990*.

ORCA regulates these features under Ontario Regulation 167/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

2.4 Official Plan and Zoning By-Law

The land use designations and zoning of the Site are summarized in Table 2.

Table 2 Summary of Municipal Official Plan and Zoning By-law Designations

Source	Designation / Zoning
Official Plan – County of Peterborough	Rural Area
Official Plan – Township of Douro-Dummer	Rural
Zoning By-law – Township of Douro-Dummer	Development; Rural

2.5 Provincial Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list, and their habitats, are protected under the provincial Endangered Species Act, 2007 (ESA) (Government of Ontario, 2007). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing, or taking a member of a species listed as endangered, threatened, or extirpated. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened. Protection of special concern species is provided through designation of their habitat as significant wildlife habitat (SWH), a provincially protected natural heritage feature. Species at risk (SAR) are discussed throughout this report, as applicable.



2.6 Fisheries Act, 1985

The Department of Fisheries and Oceans Canada (DFO) administers the federal Fisheries Act which defines fish habitat as “*spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes*” (Subsection 2(1)). Works within and adjacent to lakes, watercourses, and other bodies of water containing fish have the potential to impact fish and/or fish habitat. The Fisheries Act prohibits the harmful alteration, disruption, or destruction (HADD) of fish habitat (Subsection 35(1)), which is defined as “*any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat’s capacity to support one or more life processes*”.

As a result of amendments to the federal Fisheries Act in 2019, projects near water that could potentially impact fish or fish habitat may require DFO review. The primary purpose of the review is to determine whether HADD of fish habitat, as defined by the Act, can be avoided. The DFO Fisheries Protection Program provides a Decision Framework and guidance material applicable to these reviews (available on-line at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html).

2.7 Species at Risk Act, 2002

The federal Species at Risk Act (SARA) was adopted in 2002 to prevent endangered or threatened species from becoming extinct or extirpated, to help in the recovery of endangered, threatened, and extirpated species, and to manage species of special concern to help prevent them from becoming endangered or threatened. Habitat which is deemed necessary for the survival/recovery of a listed wildlife species, referred to as Critical Habitat, is protected under Section 56 of the SARA. The SARA applies to all federal lands in Canada; however, at-risk aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

2.8 Migratory Birds Convention Act, 1994

The federal Migratory Birds Convention Act (MBCA) prohibits killing, capturing, injuring, taking, or disturbing of the listed migratory birds (including eggs) or the damaging, destroying, removing, or disturbing of nests of the listed species. To ensure compliance with the MBCA



during development, best management practices should be implemented to detect and avoid disturbances to active nests of listed species. Active nests are protected and should be left undisturbed until all young have fledged, or the nest is determined by a professional to be inactive.



3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

Supporting background information pertaining to the Site and surrounding landscape was compiled and reviewed, as part of a comprehensive desktop exercise, to better understand local biophysical conditions. Data was obtained from provincial, municipal, and other online resources to provide context to the development proposal, and to guide development of the site-specific work program. Field studies were subsequently conducted to verify and/or add detail to the high-level contextual information derived from these publicly available resources.

The comprehensive desktop review for this Site included the following resources:

- Land Information Ontario (LIO) database via the online Natural Heritage Areas: Make-a-Map tool (Ministry of Natural Resources and Forestry, 2022).
- Natural Heritage Information Center (NHIC) database: species at risk (SAR) occurrence records.
- Online Atlas Data:
 - Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018).
 - Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005).
- Aquatic Species at Risk distribution maps (Fisheries and Oceans Canada, 2022).
- Aquatic Resource Area Summary Data (Government of Ontario, 2022).
- Fish ON-Line (Ministry of Natural Resources and Forestry, 2022).
- County of Peterborough Official Plan (County of Peterborough, 2020); includes
 - Township of Douro-Dummer Official Plan.
- Township of Douro-Dummer Zoning By-law (Township of Douro-Dummer, 2022).
- Otonabee Conservation Watershed Planning & Regulations Policy Manual (Otonabee Region Conservation Authority, 2015).



- County of Peterborough Public GIS (Peterborough County, 2022).

Mapped natural heritage features present in the general area of the Site are shown on Figure 1.

3.2 Consultation and Agency Correspondence

Regulatory agency consultation may include Fisheries and Oceans Canada (DFO), the Ministry of Natural Resources and Forestry (MNRF), the Ministry of Environment, Conservation, and Parks (MECP), as applicable. The MECP is responsible for administering the ESA and providing direction on potential compliance issues. MECP has prepared a guidance document titled *Client's Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks, 2019). This document aims to “help clients better understand their obligation to gather information and complete a preliminary screening for SAR before contacting the Ministry”. This document was used to guide the SAR habitat-based screening for the Study.

No direct consultation with provincial Ministries or DFO was undertaken for this project due to sufficient availability of Site specific data through publicly accessible resources.

3.3 Field Investigations

Ecological investigations were completed on the Site to understand potential ecological constraints to development. Information gathered through the background review was used to guide the development of the fieldwork program and was supplemented with additional site specific information gathered through various standard methodologies. Survey methodologies for each of the field investigations completed on the Site are described in the following sections.

All surveys were conducted by appropriately trained Cambium staff. Survey stations were GPS marked in the field. Data were documented manually, reviewed upon return to the office, and transposed to digital format for secure data management.



3.3.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, et al., 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, et al., 1998) and the revised 2008 tables. ELC units were initially delineated and classified by orthoimagery interpretation. Field investigations served to confirm the type and extent of ELC communities on the Site through vegetation inventory, and soil assessment with a hand auger where vegetation types could not be classified based on vegetation alone. Where vegetation communities extended off the Site, classification was done through observation from property boundaries and publicly accessible lands.

Data includes the provincial status of plant species and vegetation communities, where such information exists. Sensitivity of individual vegetation species was evaluated based on the coefficient of conservatism (CC) which is a measure of the tolerance of a species to disturbance and fidelity to a specific habitat type; species with CC of 9-10 exhibit a high degree of fidelity to a narrow range of habitat parameters. The sensitivity of vegetation communities was evaluated through an assessment of various community attributes including age, habitat quality, degree of disturbance, presence of non-native/invasive species, and presence of sensitive plant species (plants with CC of > 9). A description of CC values is provided in Table 3.



Table 3 Coefficient of Conservatism (Adapted from Oldham et al. 1995)

Coefficient of Conservatism	Rank	Description
0 to 3	Tolerant	Found in a wide variety of plant communities, including disturbed sites.
4 to 6	Moderately Conservative	Typically associated with a specific plant community but tolerate moderate disturbance.
7 to 8	Conservative	Typically associated with a plant community in an advanced successional stage that has undergone minor disturbance.
9 to 10	Highly Conservative	Typically displaying a high degree of fidelity to a specific plant community or a narrow range of synecological parameters.

3.3.2 Wetland Boundary Delineation

In Ontario, wetlands are mapped and evaluated under the Ontario Wetland Evaluation System (OWES). Mapped evaluated wetlands have undergone extensive study and been assessed based on their form and function under four categories: Biological, Social, Hydrological, and Special Features (Ministry of Natural Resources, 2014). Evaluated wetlands that score high enough are deemed Provincially Significant Wetlands (PSW). Evaluated wetlands that did not score high enough to be a PSW are called Locally Significant Wetlands (LSW). The province also maps unevaluated wetlands. These mapped wetlands are approximate; as such, they require field verification in order to confirm their presence and determine their boundaries.

The subject wetland was delineated following provincially approved methods outlined in the Ontario Wetland Evaluation System: Southern Manual, 3rd Ed. (Ministry of Natural Resources, 2014). Fieldwork was carried out by provincially certified Cambium staff.

Wetland boundaries were initially delineated and classified by orthoimagery interpretation. The presence/absence of wetlands on the Site was confirmed through field investigations during the growing season (late May through October). Wetland boundaries were determined using the 50% wetland vegetation rule. Where vegetation-based delineation was inconclusive, soil assessment with a hand auger was used to confirm wetland boundaries. Wetland boundaries on the Site were marked with a hand-held GPS unit and staked/flagged in the field. Where



wetland communities extend off the Site, classification was done through observation from property boundaries and publicly accessible lands.

3.3.3 Aquatic Habitat Assessment

Aquatic habitat surveys were completed to identify and map all aquatic features on Site, including waterbodies, watercourses (permanent and intermittent), seeps, springs, and overland drainage paths. Aerial photography and topographical mapping sources were reviewed to identify hydrologically connected aquatic features on adjacent lands that were inaccessible during the field assessments. On-site features were characterized based on in-stream and riparian cover, channel structure/morphology, substrates, flow, and hydrologic characteristics, as well as general documentation of channel instability, erosion/sedimentation, groundwater, and flow permanency indicators. If present, crossing features including bridges, culverts, and bed-level crossings were noted and georeferenced in the field. Standard assessment methods and technical criteria referenced in the Ontario Stream Assessment Protocol (Ministry of Natural Resources and Forestry, 2017) were applied to wadeable streams. All identified aquatic features were assessed to determine their potential function as fish habitat, with particular consideration to sensitive, limiting, or critical habitat, such as spawning locations, overwintering habitat, and migratory corridors. Fish observations, habitat connectivity, and barriers to fish movement were documented, when present, to provide regional context to their function within the general aquatic network and sub-watershed.

3.3.4 Habitat-Based Wildlife Surveys

Given the scale of the proposed development, a habitat-based approach was used to assess potential impacts to wildlife, consistent with standard practice. General habitat information gathered through the field investigations was used to assess the connectivity of the Site with the surrounding landscape and evaluate the ecological significance of the local area. Cambium staff actively searched for features that may provide specialized habitat for wildlife. These searches included inspecting tree cavities, overturning logs, rocks, and debris, and scanning for scat, browse, sheds, fur, etc. Any evidence of breeding, forage, shelter, or nesting was noted. Species and habitat observations were documented and photographed.



The background review revealed local records of grassland bird SAR: Bobolink (*Dolichonyx oryzivorus*), Eastern Meadowlark (*Sturnella magna*), and Grasshopper Sparrow (*Ammodramus savannarum*) (see Section 3.1). As such, the Site was specifically screened for grassland bird breeding habitat to determine whether further avian surveys were required.



4.0 Characterization of Natural Features and Functions

Data acquired through the background information review and field investigations is summarized in the following sections. Based on the information gathered, an assessment of significance has been completed to identify protected natural heritage and hydrologic features on and/or adjacent to the Site.

A summary of the field investigations completed on the Site is presented in Table 4. Representative Site photos are included within the Photo Log in Appendix C. Sample points are shown on Figure 2.

Table 4 Summary of Field Investigations

Date	Time On Site	Weather	Observer	Activities
2022-08-24	9:00-14:45	23-27°C, partly cloudy Wind: 1 Noise: 0	T. Jamieson	Ecological Land Classification and Vegetation Inventory Wetland Delineation Aquatic Habitat Assessment Habitat-based Wildlife Survey

Notes: Wind = Beaufort Wind Scale value (0 = 0-2 kph, 1 = 3-5 kph, 2 = 6-11 kph, 3 = 12-19 kph, 4 = 20-30 kph, 5 = 31-39 kph, 6 = 40-50 kph). Noise is reported based on background noise levels: Index 0 – no appreciable effect, 1 – slightly affecting sampling, 2 – moderately affecting sampling, 3 – seriously affecting sampling, 4 – profoundly affecting sampling.

4.1 Landscape Position and Topography

The Site is located within the Mixedwood Plains Ecozone: Lake Simcoe Rideau Ecoregion 6E, which extends southward from a line connecting Lake Huron in the west to the Ottawa River in the east, including Ottawa, Kingston, Peterborough, Barrie, Tobermory, Kitchener, and Toronto. This Ecoregion is characterized by a mixed geology that includes both shallow soil areas such as alvar and bedrock plains, as well as deep soil areas such as the Oak Ridges Moraine. It falls within the Great-Lakes St. Lawrence Forest Region, including deciduous and mixed forests; however, over 50% of the landscape in this Ecoregion is currently in use as agricultural land (Lee, et al., 1998).



The topography on-site is relatively flat; sloping downwards slightly towards the mapped unevaluated wetland that traverses the centre of the Site in a north-south direction. According to NHIC mapping, the elevation on-site ranges between 275 to 277 m above sea level.

The Site is accessed via a 'U' shaped laneway with two entrances off of County Road 6. From the existing dwelling, the laneway travels south then east through the mapped wetland. East of the wetland, it connects to a north-south farm access lane. The farm access lane travels from County Road 6 to the existing barn and outbuildings in the southeast field (i.e., in proximity to the proposed new dwelling).

4.1.1 Historical Land Use

A review of historical aerial imagery for the Site area indicates that overall land use and vegetation on-site have remained similar since at least 1964 (Trent University Library & Archives, 1964). Similar to the present, the majority of the Site was historically used for agriculture. The central treed / wetland area that exists today is also present on the historical imagery. Hedgerows running north to south in the western field on historical imagery have since been removed. Based on the review of historical imagery, the existing dwelling and associated structures and laneways have been constructed since 1964.

4.2 Surface Water and Drainage Features

The background review did not reveal any watercourses mapped on the Site or on adjacent lands within 120 m. However, a watercourse was observed on the orthoimagery of the Site prior to the field investigations. In addition, two ponds are mapped on the Site (one along the southwestern wetland boundary and one at the southeast corner of the Site) and two ponds are mapped on adjacent lands (one approximately 35 m east of the northeast Site boundary and the other approximately 113 m south of the southeast Site boundary; see Figure 1). The PSR indicated the presence of seepage areas associated with each of the four mapped ponds located on and adjacent to the Site.

Field investigations confirmed the presence of the unnamed, unmapped watercourse flowing from the northeast to southwest through the wetland communities on-site (Figure 2).



Representative photos of the watercourse are included in Appendix C (Photos 1, 2, and 3). At the time of the field visit, the watercourse was mostly dry with disjunct areas of standing water (Appendix C, Photo 4); as such, this feature is intermittent, receiving snowmelt during the spring freshet and overland flows during storm events. The existing laneway crosses the watercourse at two points, as shown on Figure 2. The eastern farm access laneway crosses the watercourse approximately 50 m south of County Road 6, via a plastic culvert with a perched inlet (Appendix C, Photos 5 and 6). A second crossing is located along the western arm of the laneway, approximately 160 m south of County Road 6, via a steel culvert which has a perched inlet and buried outlet (Appendix C, Photos 7 and 8). Before exiting the Site to the south, the watercourse passes through another plastic culvert that was flush with the channel bed, associated with an existing multi-use / ATV trail. The watercourse was dry in the vicinity of the ATV trail crossing during the field investigations (Appendix C, Photos 9 and 10). According to orthoimagery, the watercourse continues to flow south off-site for at least 100 m. Two dug ponds were observed on the Site, as mapped (Figure 2; Appendix D, Form 1). Both were hydrologically disconnected from the watercourse. The pond near the centre of the Site was dominated by Cattails, with low water levels at the time of the field investigations. The pond near the southeast corner of the Site had limited emergent vegetation and a water depth of less than 50 cm throughout. No signs of groundwater inputs (e.g., watercress, iron floc, etc.) were observed during the field investigations. However, given the existing mapping provided by Peterborough County, these dual features are discussed as seepage areas herein.

The mapped pond located on adjacent lands to the northeast of the Site appeared to be connected to the intermittent watercourse, based on roadside observations. The mapped pond to the southeast was not verified during the field investigations due to its location on private lands.

4.3 Wetland Delineation

Provincial mapping shows an unevaluated wetland feature mapped across the Site from south to northeast and extending slightly onto adjacent lands to the east and south. The presence of wetland communities on-site was confirmed during field investigations. The boundaries of the



confirmed wetland were generally consistent with provincial mapping, with only minor variations.

In addition, a previously unmapped wetland community was observed during the field investigations in the southeast corner of the Site, associated with the mapped pond/seepage area.

Wetland boundaries were determined based on the dominance of wetland indicator species (>50% relative dominance), and where necessary confirmed using soil samples. Wetland boundaries were marked using a handheld GPS unit.

4.4 Vegetation Communities and Inventory

The vegetation communities on the Site are summarized in Table 5 and are mapped on Figure 2. A list of identified species and representative photos for each community are provided in Appendix D.

Table 5 Vegetation Communities

No.	ELC Code	Community Description	Community Type	S - Rank
1	MAM/SAS	Meadow Marsh / Shallow Aquatic Mosaic	Wetland/ Aquatic	SNA
2	FODM11	Naturalized Deciduous Hedgerow	Terrestrial	SNA
3	SWD6-2	Silver Maple Organic Deciduous Swamp	Wetland	S5
4	FOM7-2	Moist – Fresh White Cedar – Birch – Aspen Mixed Forest	Terrestrial	S5
5	SWD4	Mineral Deciduous Swamp	Wetland	SNA
6	MAM2-2	Reed Canarygrass Mineral Meadow Marsh	Wetland	S5
7	FOD6-5	Fresh – Moist Sugar Maple – Hardwood Deciduous Forest	Terrestrial	S5
8	CUM	Cultural Meadow	Terrestrial	SNA
9	FOD3-1	Dry – Fresh Aspen – Poplar Deciduous Forest	Terrestrial	S5



No.	ELC Code	Community Description	Community Type	S - Rank
	CVR	Residential	Terrestrial	SNA
	OAGM1	Annual Row Crops	Terrestrial	SNA

No provincially rare vegetation communities were observed on-site or adjacent lands. Field investigations confirmed that the fields on the western and southeast portions of the Site are currently used for agricultural row crop production (OAGM1; Figure 2). Vegetation communities directly adjacent to these agricultural fields are reflective of historical cultural influences and contain a high proportion of non-native species (Communities 2 and 8). The central treed area contains woodlands (Communities 4, 7, and 9) and wetlands (Communities 3, 5, and 6; as detailed in Section 4.3). All native vegetation communities observed on-site are provincially secure (S5).

A search for Butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; one Butternut tree was identified on the Site. Further details are provided in Section 4.9. No other provincially rare or at-risk plant species were observed on-site.

4.4.1 Soil Characterization

Soil characterization was completed for wetland and transitional vegetation communities, where conclusive classification to vegetation type could not be completed based solely on vegetation. Soils were sampled using a hand auger, and moisture regimes were determined based on industry standard guidance (Heck, et al., 2017). A summary of the soil characterization efforts on the Site is provided in Table 6, and soil core locations are illustrated on Figure 2.

Table 6 Soil Characterization Summary

No.	ELC Code	Soil Description	Effective Texture	Moisture Regime
1	FOM7-2	Silty Loam up to 70 cm; mottles encountered at 35 cm; no gley or water table encountered	3	5 (moist)



No.	ELC Code	Soil Description	Effective Texture	Moisture Regime
2	SWD6-2	Fibric/Mesic Organic layer at least 50 cm deep; no mottles or gley encountered; water table encountered at 25 cm	-	>7
3	FOD6-5	Silty Loam up to 60 cm; mottles encountered at 40 cm; no gley or water table encountered	3	4 (moderately moist)
4	FOM7-2	Silty Loam; refusal due to coarse fragments at 60 cm; mottles encountered at 40 cm; no gley or water table encountered	3	4 (moderately moist)

4.5 Significant Woodlands

In the past 200 years over 70 percent of woodland cover has been lost in Ecoregions 6E and 7E (Ministry of Natural Resources, 2010). The protection of woodland cover in southern Ontario is an important concern (Ministry of Natural Resources, 2010). Planning authorities are responsible for protecting significant woodlands within Ecoregions 6E and 7E in accordance with policies 2.1.4(b) and 2.1.6 of the PPS. The amount of woodland cover is high across the landscape within Ecoregion 5E. As such, the Natural Heritage Reference Manual and the PPS do protect or designate significant woodlands within Ecoregion 5E.

Significant woodlands are natural heritage features that are afforded protection under provincial policy within Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River), which occur to the south and east of the Canadian Shield. Currently, according to their respective Official Plan Schedules, the planning authority has not explicitly defined or designated significant woodlands within their jurisdiction. In the absence of local criteria for evaluating woodlands, the Natural Heritage Reference Manual (NHRM) provides such guidance (Ministry of Natural Resources, 2010).

A summary of the significant woodlands assessment, based on the criteria and standards listed in Table 7-2 of the NHRM is provided in Table 7. To be considered significant, a woodland must meet the minimum standard for any one of the criteria listed in Table 7 *and* meet the minimum size for that woodland criterion. The minimum size criteria are contingent



upon the percent cover of woodlands within the jurisdiction. Approximately 39% of Peterborough County is comprised of woodland cover (pers. comm. with ORCA staff, Jan 23, 2020); the column in Table 7 that relates to this percentage has been bolded for ease of reference to the appropriate criteria. An explanation of the results is presented in the following sections.

Table 7 Summary of Woodland Significance Evaluation

Woodlands Significance Criteria	Percent Cover of Woodland in Planning Area					Meets Criteria (Yes/No)
	<5%	5-15%	16-30%	31-60%	>60%	
Woodland Size Criterion						
Woodland Size	2 ha	4 ha	20 ha	50 ha	N/A	No
Ecological Functions Criteria						
Woodland Interior	any	Any	2 ha	8 ha	20 ha	No
Proximity to Other Woodlands and Other Habitats	0.5 ha	1 ha	4 ha	10 ha	20 ha	No
Linkages	0.5 ha	1 ha	4 ha	10 ha	20 ha	No
Water Protection	0.5 ha	0.5 ha	2 ha	4 ha	10 ha	Yes
Woodland Diversity (composition)	0.5 ha	1 ha	4 ha	10 ha	20 ha	No
Uncommon Characteristics Criteria						
Unique Species Composition	0.5 ha	1 ha	2 ha	4 ha	10 ha	No
Rare Vegetation Community	0.5 ha	1 ha	2 ha	4 ha	10 ha	No
Rare or Uncommon Plant Species	0.5 ha	1 ha	2 ha	4 ha	10 ha	No
Older Woodland Characteristics	0.5 ha	1 ha	2 ha	4 ha	10 ha	No
Economic and Social Functions Criteria						
High Economic or Social Value	N/A	N/A	N/A	N/A	N/A	N/A

Note: *woodlands must meet characteristics listed in the criterion **and** the corresponding area threshold
 Bold values indicate the area threshold relevant to this Site



The woodlands on the Site meet the 'Water Protection' criteria for significance. Thus, the woodlands on the Site (Communities 4, 5, 6, 7, and 9) are considered candidate significant for the purpose of this Study, in accordance with the guidelines outlined in the NHRM and detailed below. The woodlands on the Site are not contiguous with woodlands on adjacent lands.

4.5.1.1 Woodland Size Criteria

The woodland size criterion is based on the scarcity of woodlands within the planning region, with different thresholds for significance depending on the percent cover of woodlands. The woodland on-site is approximately 5.75 ha, which does not meet the threshold for significance (50 ha). Based on this criterion, the woodlands are not considered significant.

4.5.1.2 Ecological Functions Criteria

There are five sub-criteria included under the ecological functions, each with a set of recommendations. A minimum size threshold is also applied to some of these criteria, which can range from 0.5-20 ha.

a) Woodland interior

Woodland interior habitat is defined as habitat that is more than 100 m from an edge and meets the relevant area threshold for the planning area. No interior habitat is present. Based on this criterion, the woodlands are not considered significant.

b) Proximity to other woodlands or other habitats

This criterion refers to the proximity of the woodland to other significant natural heritage features or to fish habitat. If the woodland is located within 30 m of a feature that is likely receiving ecological benefit from the woodland, it should be considered significant if it meets the minimum area threshold of 1-20 ha (depending on circumstances). The woodland on-site is not within 30 m of significant natural feature or fish habitat and does not meet the minimum size threshold of 10 ha. Based on this criterion, the woodlands are not considered significant.



c) Linkages

This criterion recognizes the importance of connecting features within a natural heritage system. If the woodland is located within a defined natural heritage system or provides a connecting link within 120 m of two other significant features, it should be considered significant if it meets the minimum area threshold of 1-20 ha (depending on circumstances). The woodland on-site does not provide a connection between two otherwise unconnected natural features. It also does not meet the minimum size threshold for this criterion. Based on this criterion, the woodlands are not considered significant.

d) Water protection

This criterion seeks to protect woodlands that provide water quality benefits by being located on or within 50 m of a sensitive or threatened watershed, groundwater discharge/recharge, headwater areas, watercourses, and fish habitat. The woodland is located along a watercourse and it meets the minimum area threshold for this criterion (4 ha). Based on this criterion, the woodlands are considered candidate significant.

e) Woodland diversity

This criterion seeks to identify woodlands with rare or uncommon species or community composition or woodlands with high native diversity. The woodland on-site does not meet the minimum size threshold for this criterion. Based on this criterion, the woodlands are not considered significant.

4.5.1.3 Uncommon Characteristics Criteria

The woodland on-site does not meet the Peterborough County size threshold of 10 ha. The recommendations of the uncommon characteristics' criterion were reviewed; no uncommon characteristics were found within the woodlands on the Site. Based on this criterion, the woodlands are not considered significant.



4.5.1.4 Economic and Social Functional Values Criteria

The recommendations of the economic and social functional values criterion were reviewed; no economic or social values are known to exist for the woodlands on or adjacent to the Site. Based on this criterion, the woodlands are not considered significant.

4.6 Wildlife Survey Results

The pond at the west edge of the woodland / wetland (Community 5) provides potential amphibian breeding habitat. The ponds were screened for turtle habitat potential. The westerly pond was observed to be densely vegetated with Cattails, with no open areas for basking and only minimal surface water at the time of the field investigations. Accordingly, the westerly pond does not provide good quality turtle habitat. The pond located in the southeast field (Community 1) was relatively open, with sandy substrates and open areas suitable for basking. As such, this pond may provide active-season habitat for turtles as well as year-round habitat for amphibians. Another small pond is located on the adjacent property to the northeast, east of Community 3. Due to this feature being located on private property, it was viewed only from the roadside; turtle habitat is considered present in this feature for the purpose of this Study. Based on the observed feature sizes and depths as well as orthoimagery interpretation, turtle overwintering habitat is not present on the Site and adjacent lands. As such, turtles are not discussed further herein.

A grassland breeding bird habitat assessment was conducted to determine whether the Site provides suitable habitat for Bobolink, Eastern Meadowlark, and/or Grasshopper Sparrow. The field investigation confirmed that the majority of fields on-site consist of row crops and are not suitable grassland bird habitat. The cultural meadow (Community 8) is dominated by forbs rather than grasses and is in patches that are insufficient in size to provide suitable grassland breeding bird habitat. Overall, no suitable habitat for Bobolink, Eastern Meadowlark, or Grasshopper Sparrow was observed on-site; as such these species are not discussed further in this report.

Fields on the Site that are currently characterized by annual row crop vegetation (OAGM1) provide very limited habitat for wildlife. The woodlands and wetlands on the Site are expected



to provide habitat for a variety of bird, mammal, and reptile and amphibian species that are tolerant of the bordering rural and agricultural land uses.

4.7 Significant Wildlife Habitat

The NHRM states the assessment requirements for Significant Wildlife Habitat (SWH) on residential severances. The Province recommends that the evaluation of SWH be investigated, on lands beyond the boundary of a settlement area, when the creation of *more than* three lots through either consent or plan of subdivision (Ministry of Natural Resources, 2010). As such, a fulsome assessment is not required for this Site. Details on species of conservation concern (including special concern species) and their protected habitats are provided in Section 4.9.

4.8 Fish and Fish Habitat

An unnamed, unmapped, intermittent watercourse was confirmed to be present on-site, as detailed in Section 4.2. The channel generally appears to be natural, with a meandering flow path, gently sloped banks, and variable widths ranging from approximately 0.5 to 2 m in the northeast portion of the Site. In stream vegetation was dense in some areas with wetland plants, including Wood Nettle, Spotted Jewelweed, and Duckweed observed in the channel. The reach of the watercourse located directly west and southwest of the existing agricultural buildings appears to have been historically ditched. The channel was relatively deep (>1m) and straight in this area, with steep banks; a berm observed along portions of this reach is likely attributed to historical excavation activities within the channel. The watercourse was mostly dry with disjunct pockets of standing water present at the time of the field investigations. No background information is available on the thermal regime or fish community of the watercourse; however, the watercourse was observed to be intermittent, limiting its function as direct fish habitat. Given the presence of two perched culverts on the Site (see Section 4.2), flow is impeded except during high flow times (e.g., during snow melt and storm events). The perched culverts on the Site also create seasonal barriers to fish passage. Based on the watercourse's modified channel, seasonal flow conditions, and seasonal barriers to passage, it does not provide suitable fish habitat. Fish habitat is not discussed further in this report.



4.9 Species of Conservation Concern

A list of species of conservation concern, including SAR, with potential to occur in the general vicinity of the Site has been compiled based on known species' ranges, habitat requirements, and review of background information sources (as listed in Section 3.1). In addition, the list has been augmented with direct field observations from the Study, as detailed in the previous sections. Cambium has employed a habitat-based screening, supplemented with targeted field surveys, when necessary, in order to identify suitable habitat for species located on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix E and a discussion of the results is provided below.

No Critical Habitat for aquatic SAR listed under SARA was identified on or adjacent to the Site.

4.9.1 Endangered and Threatened Species

The habitat of endangered and threatened species is regulated under the ESA, 2007, and associated regulations. Accordingly, a detailed evaluation of habitat type, size, and availability was completed, supplemented by targeted surveys where required, to determine whether the Site is actively used by any SAR.

Three endangered bat species have potential to occur on the Site: Tri-coloured Bat (*Perimyotis subflavus*), Eastern Small-footed Myotis (*Myotis leibii*), and Little Brown Myotis (*Myotis lucifugus*). Bats use trees with large cavities for maternity roost habitat. Potential maternity roost habitat may be present within the woodland and treed wetland portions of the Site (Communities 3, 4, 5 and 7), though no cavity trees were identified during field investigations, given the seasonal timing of the field investigations. Open areas of the Site and adjacent lands may be used as foraging habitat for these species; foraging habitat is locally abundant and therefore not seen as a limiting factor / constraint in relation to the proposed development. Mitigation measures to prevent contravention of the ESA with respect to SAR bats are provided in Section 5.5.

Butternut is listed as federally and provincially endangered. Butternut trees naturally grow in a variety of treed and open habitats in Ontario. They occur in a wide variety of native and cultural



vegetation types including treed, edge, and open habitats, as well as in fencerows and manicured gardens and parks. Butternut is typically found on rich, moist, well-drained loams and on well-drained rocky soils, especially of limestone origin. One Butternut tree was observed on-site in a mixed forest near the eastern laneway (Community 4; see Figure 2). Butternut is further discussed in Section 5.5.

Black Ash was added to the Species at Risk in Ontario List (O. Reg. 230/08) as an Endangered species on January 26, 2022. A Minister's Order (O.Reg. 23/22) which came into force on January 26, 2022, temporarily paused the species and habitat protection provisions for Black Ash under the ESA, for a period of two years (i.e., until January 26, 2024). This species was confirmed within the confirmed wetland boundary on the Site (Community 3). Black Ash is further discussed in Section 5.5.

4.9.2 Special Concern Species

Barn Swallow was recently downlisted from threatened to special concern in Ontario. Barn Swallows require open habitats including grassy fields, pastures, and agricultural crops, that are in close association with human populations, as this swallow typically nests inside man-made structures such as abandoned barns and concrete box culverts. Three structures including a barn and two smaller outbuildings that may provide potential nesting habitat for this species were identified in the southeastern portion of the property. In addition, cultural meadows, and row crop fields (Community 8 and the OAGM1 areas) may provide suitable foraging habitat for this species. No Barn Swallow were observed during the field visit. As no changes to the existing potential nesting structures are proposed, Barn Swallow is not discussed further herein.

The Eastern Wood-pewee lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests with little understorey vegetation, as available in Communities 4 and 7. No Eastern Wood-pewee was observed during the field visit.

The Eastern Ribbonsnake uses habitats close to water or wetlands with abundant available prey species. Swamp Communities 3 and 5, as well as the forested Communities 4 and 7, adjacent to the watercourse may provide suitable habitat for general life activities for this



species. No rock crevices or suitable areas for hibernation were observed on-site. No Eastern Ribbonsnakes were observed during the field visit.

The Yellow-banded Bumble Bee is a habitat generalist able to use a variety of nectaring plants and environmental conditions. Nectaring plants were primarily observed on the Site within the cultural meadow (Community 8). No Yellow-banded Bumble Bees were observed during the site visit.

The Monarch butterfly uses a variety of habitats with wildflowers and requires milkweed plants as a food source for their caterpillars. Common Milkweed and an adult Monarch were observed in Community 8 during the field investigations.

Habitat protections for special concern species may be provided, where warranted, through designation of SWH. As detailed in Section 4.7, the proposed development does not require an assessment of SWH. Based on our evaluation, general habitats for the noted special concern species will remain on the Site and immediate area following the proposed development; therefore, designation as SWH is not considered to be warranted or required. Avoidance measures and best management practices to prevent harm to individuals are presented in Section 5.6.



5.0 Impact Assessment and Mitigation Measures

The proposed development involves a single residential lot severance creating one severed lot of approximately 1 ha containing the existing dwelling and one retained lot of approximately 18 ha. The Client is also seeking to establish a new building envelope on the retained lands for the construction of a new dwelling, to be located near the existing laneway and barn in the southeast portion of the Site.

The following protected features were identified on and adjacent to the Site:

- Wetlands
- Intermittent Watercourse
- Seepage Areas and Springs
- Candidate Significant Woodlands
- Habitat of endangered and threatened species

No other natural heritage features protected by provincial policy were confirmed on or adjacent to the Site.

The creation of new lot lines is administrative in nature and no Site alteration or construction activities are proposed on the new lot containing the existing dwelling. Therefore, no impacts to the form or function of any of the above-mentioned ecological features are anticipated to result from the creation of the 1 ha severed lot.

The following sections address potential impacts to protected features identified on and adjacent to the Site that may result from the proposed development and Site alteration associated with construction of a new residential dwelling in the eastern portion of the 18 ha retained lot. Mitigation measures and best management practices have been recommended to ensure that the integrity of the existing natural features is protected and/or enhanced and that the associated functions are not negatively impacted during or following construction.



5.1 Wetlands

As detailed in Section 4.3, wetlands were confirmed to be present on the Site. No development is proposed within the wetlands; no alterations to the existing laneway are proposed and no tree removals are proposed. As such, no direct impacts to wetlands are associated with the proposed development. In accordance with the GPGGH, a 30 m setback in the form of a vegetation protection zone (VPZ) is required for all KHF; therefore, a 30 m VPZ is appropriate for the wetland on the Site, as shown on Figure 3. The 30 m VPZ is considered sufficient to protect the existing form and function of hydrologic features provided that the area be maintained as the existing vegetation cover and be allowed to naturally self-sustain (i.e., no vegetation removals or grading). The proposed building envelope is shown to be outside of the 30 m wetland VPZ on the Consent Sketch (Appendix B).

Best management practices (BMPs) that may be implemented to further protect the wetland feature are detailed in Section 5.6 (see Erosion and Sedimentation and Spread of Invasive Species). Provided the recommendations included herein are implemented, no indirect impacts to wetlands are anticipated to result from the proposed development.

5.2 Intermittent Watercourse

As detailed in Section 4.2, an intermittent watercourse was confirmed to be present on the Site. The watercourse on the Site is located fully within the verified wetland boundary. No development is proposed within the watercourse; no alterations to the existing laneway crossings are proposed. Provided the 30 m wetland VPZ detailed in Section 5.1 and BMPs detailed in Section 5.6 are adhered to, no direct or indirect impacts to the watercourse are anticipated in relation to the proposed development.

5.3 Seepage Areas and Springs

As detailed in Section 4.2, two seepage areas are present on the Site, and two are present on adjacent lands. The seepage areas on the Site are both located fully within the verified wetland boundary. No development is proposed within these features. The features on adjacent lands are greater than 30 m away from the Site. Provided the 30 m wetland VPZ detailed in Section



5.1 and BMPs detailed in Section 5.6 are adhered to, no direct or indirect impacts to the seepage areas are anticipated in relation to the proposed development.

5.4 Candidate Significant Woodlands

Candidate significant woodlands were identified on the Site and adjacent lands (Communities 4, 5, 6, 7, and 9) based on provincial criteria as detailed in Section 4.5. It is the responsibility of the Planning Authority to designate significant woodlands within their jurisdiction. Presently, significant woodlands have not been designated in the County or the Township; however, based on evaluation against provincial criteria, the feature on and adjacent to the Site will be presumed significant for the purpose of this Study.

No development is proposed within the significant woodland; no tree removals are proposed. As such, no direct impacts to the candidate significant woodland are associated with the proposed development. The proposed dwelling construction and Site alteration will be located within the developable area identified in the southeast field (OAGM1), as illustrated on Figure 3. The proposed building envelope for a single residential dwelling on the retained lot is located in the appropriate area, and outside a conservative 30 m woodland buffer on the Consent Sketch (Appendix B).

BMPs that may be implemented to further protect the woodland feature are detailed in Section 5.6 (see: Spread of Invasive Species, and Anthropogenic Impacts: Lighting). In addition, the Client is encouraged to undertake sustainable forestry practices within the retained forested lands to encourage natural forest succession and the removal of non-native species. The province of Ontario provides a tax incentive to landowners who have a Managed Forest Plan for their property: www.ontario.ca/page/managed-forest-tax-incentive-progam. This program requires the property to be at least 4 ha in size with forested cover. The Managed Forest Plan can also address invasive species removal/control if required. Additional information on this program and eligibility can be provided by Cambium.

Provided the recommendations included herein are implemented, no negative impact to the existing form and function of the candidate significant woodland is anticipated to result from the proposed development.



5.5 Habitat of Endangered and Threatened Species

Bats (Endangered)

As detailed in Section 4.9, woodlands on the Site provide potential habitat for endangered bat species, including: Tri-coloured Bat, Eastern Small-footed Myotis, and Little Brown Myotis. The Site may offer marginal bat roosting habitat potential in some of the trees in the wetland and woodland communities identified on Site. Given that no tree clearing is proposed as part of the proposed development, no impacts to bat roosting habitat are anticipated.

Butternut (Endangered)

As detailed in Section 4.9, woodlands on the Site provide suitable habitat for Butternut and a single Butternut was confirmed to be present in the woodland (Community 4). No development is currently proposed in the vicinity of the Butternut. A 25 m setback from the Butternut location is shown on Figure 3 for reference. Should any development be proposed within 25 m of this tree in the future, a Butternut Health Evaluation (BHE) should be carried out and submitted to the Ministry at least 30 days prior to the activity. Depending on the results of the BHE, the activity may need to be registered and compensation may be required. Cambium is available to help with a BHE, should it be needed in the future.

Black Ash (Endangered)

As detailed in Section 4.9, Black Ash was confirmed to be present in the Maple swamp (Community 3) in the central treed area on the Site. No development is currently proposed in the vicinity of Black Ash; a 30 m VPZ is respected from the wetland, as discussed in Section 5.1. Should any development be proposed within 25 m of Community 3 in the future, the locations and health details of individual Black Ash trees should be documented and submitted to the Ministry at least 30 days prior to the activity. Depending on the health of each tree within proximity to the proposed development, the activity may need to be registered and compensation may be required. Cambium is available to help with tree assessments, should it be needed in the future.



It is ultimately the proponent's responsibility to ensure that no harm to SAR or their habitats occurs on their property.

5.6 Mitigation Measures and Best Management Practices

To minimize potential impact to the natural environment on and surrounding the Site, Cambium recommends that the best management practices outlined in Table 8 be implemented at the Site.

Table 8 Mitigation Measures and Best Management Practice Recommendations

Potential Impact	Recommended Best Practice
Erosion and Sedimentation	<p>Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. This key control measure will help prevent sediment from entering surface water features (i.e., wetlands, watercourse, and seepage areas) in the surrounding landscape. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas.</p> <p>Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes.</p>
Wildlife: Bats (Disturbance and Harm)	<p>No tree removal is anticipated in relation to the proposed development. Should any unforeseen tree removal be required on the Site, it should occur outside of the active bat season, which extends from April 1 to September 31 of any given year.</p>
Wildlife: Birds (Disturbance and Harm)	<p>Nesting birds and their nests, eggs, and young are protected under the <i>Migratory Birds Convention Act, 1994</i>. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 15 to August 15 in the local area (as per Environment and Climate Change Canada Guidelines).</p> <p>No tree removal is anticipated in relation to the proposed development. If required, no trees should be removed between April 15 and August 15. If other vegetation clearing or construction is to occur between April 15 and August 15, the vegetation should be investigated by a qualified biologist to confirm if any active nests are</p>



Potential Impact	Recommended Best Practice
	<p>present, prior to site alteration. Vegetation clearing can proceed provided there are no active nests. If active nests are confirmed, the nests should be left undisturbed until young have fledged or the nest is determined to be inactive. Note that some birds nest on the ground and in low-lying vegetation and shrubs; therefore, all habitat types should be inspected prior to ground disturbance if removals are to occur during the breeding season.</p>
Wildlife: Reptiles (Disturbance and Harm)	<p>Snakes are particularly vulnerable to construction-related impacts on sites adjacent to wetlands, watercourses, and waterbodies.</p> <p>Sediment fencing can function as wildlife exclusion fencing. To exclude wildlife from the Site, sediment fencing should be installed around the entire perimeter of the construction area prior to the earlier of May 1 or commencement of Site preparation to keep wildlife from entering the construction area. This fencing should be made of heavy-duty sediment fence, staked at regular intervals, trenched-in at least 10-20 cm below ground, with an above ground height of at least 60 cm. The sediment fence should be inspected regularly to ensure that it remains in good condition: and any downed areas, rips, or holes should be repaired or replaced immediately. A designated point of ingress/egress should be identified, and a moveable barrier be constructed, to allow for the Site to fully remain enclosed while allowing vehicular access to the Site as needed.</p> <p>The construction area should be actively inspected for snakes each day prior to the start of work throughout the duration of construction. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way.</p>
Species at Risk (SAR; Threatened and Endangered)	<p>SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.</p>
Spread of Invasive Species	<p>Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. Best management practices to reduce the spread of invasive species include:</p> <ol style="list-style-type: none"> 1. Revegetate with species native to the local area. 2. Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media. 3. Get to know the most common invasive species in the area.



Potential Impact	Recommended Best Practice
	<ol style="list-style-type: none"> 4. Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property. Equipment and vehicles coming into the work area should be free of soil and seeds that could introduce non-native and invasive species following the Clean Equipment Protocol for Industry: Inspecting and Cleaning Equipment for the Purposes of Invasive Species Prevention (Halloran, 2013) 5. Immediately eradicate invasive species if they are observed on the property. 6. Do not compost invasive species; put them in plastic bags and dispose of them in the garbage. 7. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions. <p>An excellent resource for identifying and controlling invasive species can be found through the Ontario Invasive Plant Council: Home - Ontario Invasive Plant Council (ontarioinvasiveplants.ca) (OIPC, 2022)</p>
Anthropogenic Impacts – Noise	<p>Noise is not expected to increase significantly because of the proposed development as it is consistent with the land use on the surrounding properties. Maintaining the wooded areas surrounding the natural features on the Site will serve to buffer wildlife within the natural areas from noise-related impacts.</p> <p>Temporary acute noise may occur during construction activities and should follow appropriate local noise by-laws. All equipment should be equipped with appropriate mufflers to mitigate noise levels during construction.</p>
Anthropogenic Impacts – Lighting	<p>Artificial lighting can have an impact on nocturnal movement of wildlife within natural areas. To minimize impacts to wildlife, it is recommended that outdoor lights be operated on timers, rather than by motion detection. Outdoor lighting associated with the development should be directed at the ground, rather than into the adjacent natural areas. Bulb wattage should be as low as practical while meeting the safety intent of the lighting.</p>



6.0 Policy Conformity

6.1 Provincial Policies

Based on the key natural heritage and/or hydrologic features identified on or adjacent to the Site and the findings of the field investigations detailed herein, the proposed development of the Site is in conformity with the PPS and GPGGH. Conformity with applicable natural heritage policy is summarized in Table 9 and Table 10. Note that natural heritage and hydrologic feature types not relevant to the development application have been intentionally omitted from the tables below.

Table 9 PPS Policy Conformity Summary

Natural Heritage Features	On Site	On Adjacent Lands	Meets Associated Policy
Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)	Yes	No	Yes: 2.1.5, 2.1.8
	Explanation: No development is proposed within the candidate significant woodlands. A 30 m woodland buffer has been conservatively implemented on the Consent Sketch (Appendix B). No impact to the form or function of the feature is anticipated in relation to the proposed development.		
Habitat of Threatened and Endangered Species	Potential	n/a	Yes: 2.1.7
	Explanation: No development is proposed within the woodlands and wetlands that provide potential habitat for endangered bats or confirmed habitat for endangered Butternut. As such, the proposed development is in compliance with the policies and regulations of the ESA.		

Table 10 GPGGH Policy Conformity Summary

Hydrologic Features	On Site	On Adjacent Lands	Meets Associated Policy
Wetlands	Yes	Yes	Yes: 4.2.3.1, 4.2.4.1(a,b,c), 4.2.4.2, 4.2.4.3
	Explanation: No development is proposed within the wetlands. The 30 m setback in the form of a vegetation protection zone (VPZ; see Figure 3) is sufficient to protect the existing form and		



Hydrologic Features	On Site	On Adjacent Lands	Meets Associated Policy
	function, provided that the area be maintained (i.e., no vegetation removals or grading). In addition, BMPs to further protect the wetland before/during/and after construction are detailed in Section 5.6 (see Erosion and Sedimentation and Spread of Invasive Species).		
Streams (permanent/intermittent)	Yes	Yes	Yes: 4.2.3.1, 4.2.4.1(a,b,c), 4.2.4.2, 4.2.4.3
	Explanation: The watercourse is located fully within the wetland; the 30 m wetland VPZ is sufficient to protect the existing form and function of the watercourse.		
Seepage Areas/Springs	Yes	Yes	Yes: 4.2.3.1, 4.2.4.1 (a, b, c), 4.2.4.2, 4.2.4.3
	Explanation: No development is proposed within the seepage areas. The 30 m setback in the form of a vegetation protection zone (VPZ; see Figure 3) is sufficient to protect the existing form and function, provided that the area be maintained (i.e., no vegetation removals or grading). In addition, BMPs to further protect these areas before/during/and after construction are detailed in Section 5.6 (see Erosion and Sedimentation and Spread of Invasive Species).		



7.0 Summary of Mitigation, Compensation, and Best Practices

The following recommendations are provided for the proposed development:

1. All required approvals and permits should be obtained prior to the commencement of any Site alteration / construction activities. Development setbacks identified herein should be included on all future Site Plans.
2. The 30 m wetland VPZ is to be maintained as the existing vegetation cover and be allowed to naturally self-sustain (i.e., no vegetation removals or grading).
3. Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. This fencing should be made of heavy-duty sediment fence, staked at regular intervals, trenched-in at least 10-20 cm below ground, with an above ground height of at least 60 cm. The sediment fence should be inspected regularly to ensure that it remains in good condition until the area has been stabilized and/or successfully revegetated: and any downed areas, rips, or holes should be repaired or replaced immediately. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas.
4. To exclude wildlife from the Site, sediment fencing should be installed around the entire perimeter of the construction area prior to the earlier of May 1 or commencement of Site preparation to keep wildlife from entering the construction area. A designated point of ingress/egress should be identified, and a moveable barrier be constructed, to allow for the Site to fully remain enclosed while allowing vehicular access to the Site as needed.
5. The construction area should be actively inspected for snakes each day prior to the start of work throughout the duration of construction. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way.
6. Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes.



7. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 15 to August 15 in the local area (as per Environment and Climate Change Canada Guidelines). Should any unforeseen tree removal be required on the Site, it should occur outside of the active bat season, which extends from April 1 to September 31 of any given year.
8. If any vegetation clearing is to occur between April 15 and August 15, the vegetation should be investigated by a qualified biologist to confirm if any active bird nests are present, prior to site alteration. Vegetation clearing can proceed provided there are no active nests. If active nests are confirmed, the nests should be left undisturbed until young have fledged or the nest is determined to be inactive. Note that some birds nest on the ground and in low-lying vegetation and shrubs; therefore, all habitat types should be inspected prior to ground disturbance if removals are to occur during the breeding season.
9. SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.
10. Should any development be proposed within 25 m of the identified Butternut tree in the future, a Butternut Health Evaluation (BHE) should be carried out and submitted to the Ministry at least 30 days prior to the activity. Cambium is available to help with a BHE, should it be needed in the future.
11. the Client is encouraged to undertake sustainable forestry practices within the retained forested lands to encourage natural forest succession and the removal of non-native species. The province of Ontario provides a tax incentive to landowners who have a Managed Forest Plan for their property: www.ontario.ca/page/managed-forest-tax-incentive-progam. Additional information on this program and eligibility can be provided by Cambium.




8.0 Closing


In closing, potential negative impacts associated with the proposed development and site alteration can be appropriately minimized, provided that the recommendations outlined in Section 7.0 are followed. The information presented herein demonstrates that the proposed development can be carried out in a way that will not adversely impact natural heritage and hydrologic features and function identified on or adjacent to the subject Site. Furthermore, the proposed development complies with applicable provincial policy.

Respectfully submitted,

Cambium Inc.

DocuSigned by:

29EC8ECEB08446D

Kristina Domsic, B.E.S.
Ecologist / Project Coordinator

DocuSigned by:

2C38292BECC5413

Robin LeCraw, Ph.D.
Senior Ecologist / Project Manager



9.0 References

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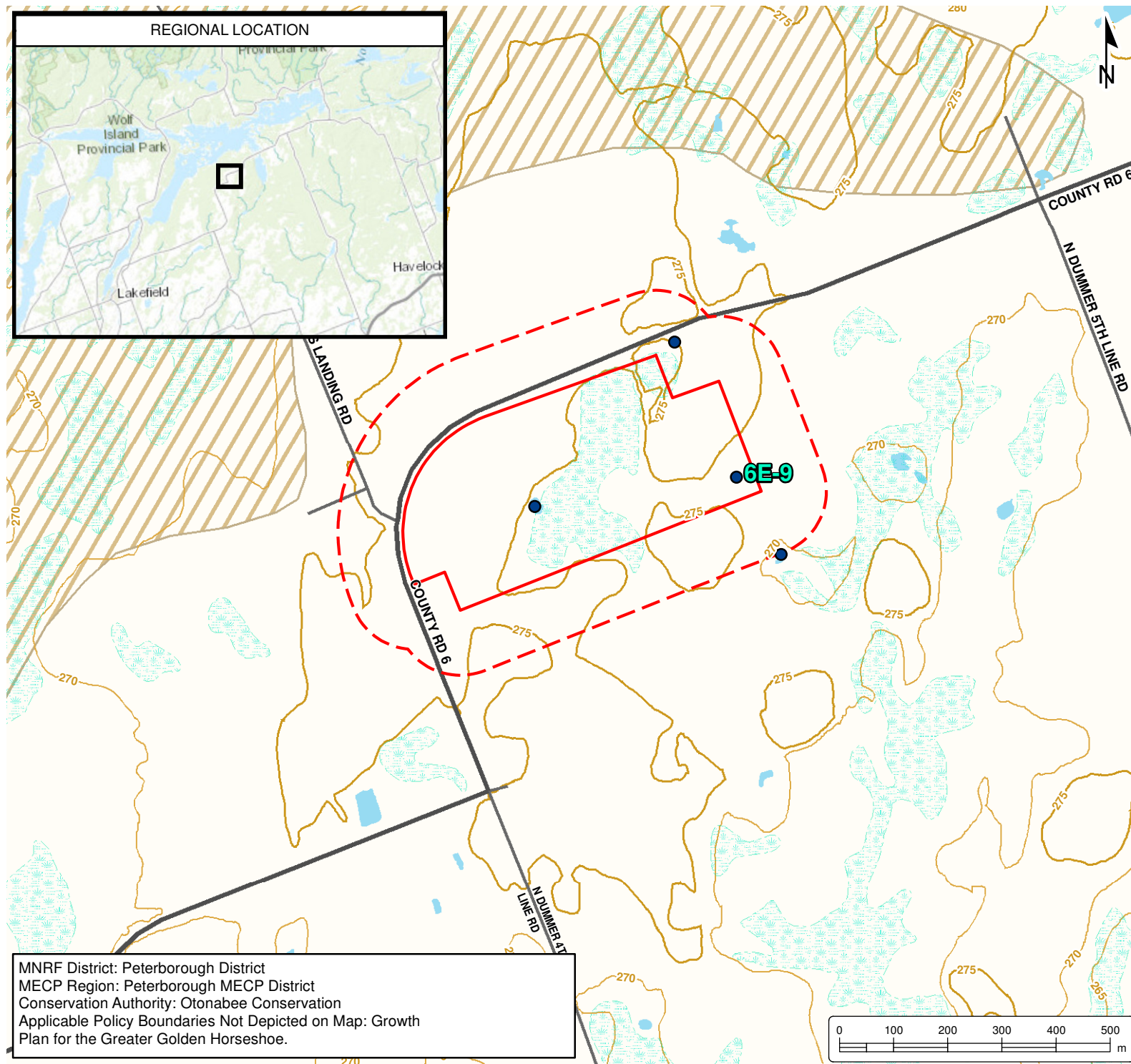
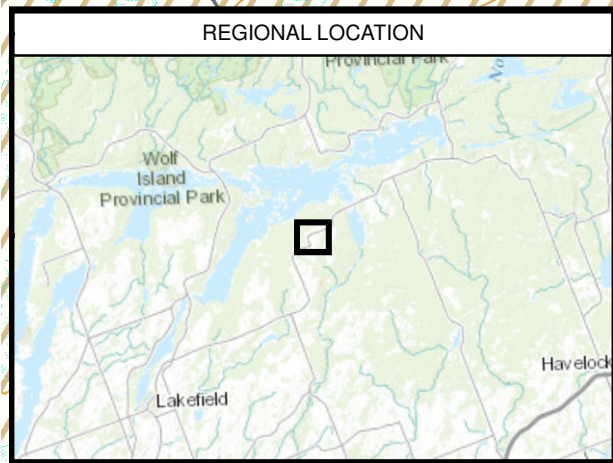
Natural Heritage Evaluation – 2095 County Road 6, Hall's Glen, Douro-Dummer, County of Peterborough, Ontario

Paul Kidd

Cambium Reference: 15726-001

April 16, 2024

Appended Figures



**NATURAL HERITAGE
EVALUATION**

PAUL KIDD
2095 County Road 6, Hall Glen,
Douro-Dummer, Ontario

LEGEND

- Seepage Areas
- Major Road
- Minor Road
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Unevaluated Wetlands
- Water Area
- Deer Wintering Area (Stratum 1)
- Ecodistrict
- Adjacent Lands (120m)
- Site (18.27ha) (approximate)

Notes:
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry or the Ontario Government).
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
 - Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

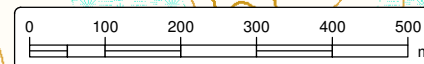


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**LANDSCAPE SETTING
AND POLICY AREAS**

Project No.:	15726-001	Date:	February 2023
Scale:	1:10,000	Rev.:	
Created by:	DBB	Checked by:	KD
Figure:	1		

MNRF District: Peterborough District
 MECP Region: Peterborough MECP District
 Conservation Authority: Otonabee Conservation
 Applicable Policy Boundaries Not Depicted on Map: Growth
 Plan for the Greater Golden Horseshoe.





NATURAL HERITAGE EVALUATION

PAUL KIDD
2095 County Road 6, Hall Glen,
Douro-Dummer, Ontario

LEGEND

- Seepage Areas
- Butternut
- Soil Point
- Verified Wetland Boundaries
- Laneway
- Watercourse
- Vegetation Communities
- Unevaluated Wetlands
- Water Area
- Pond
- Adjacent Lands (120m)
- Site (18.27ha) (approximate)

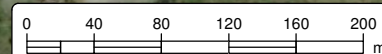
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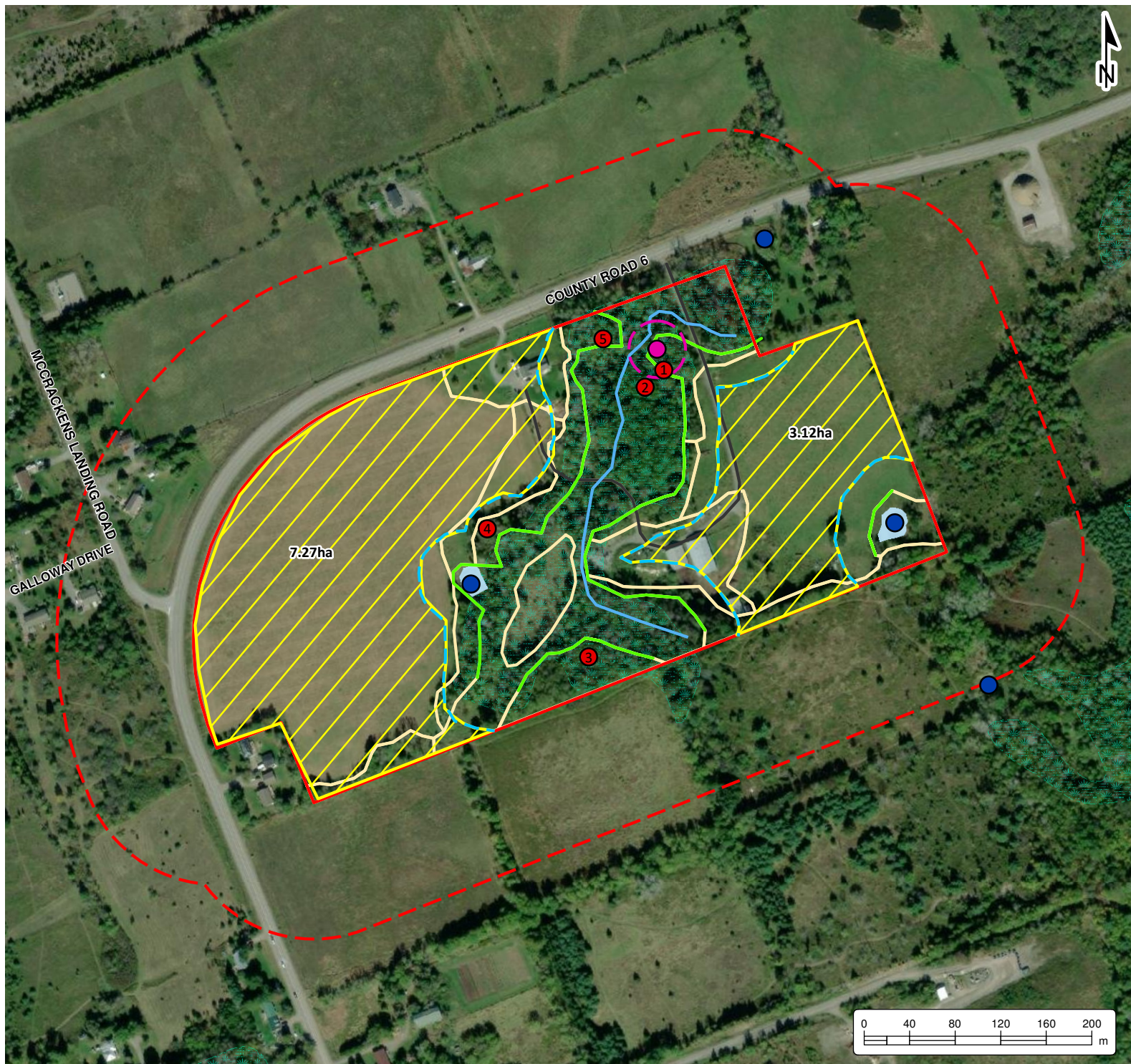
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NATURAL HERITAGE FEATURES AND ECOLOGICAL SURVEY STATIONS

Label	Code	Community
1	MAM/SAS	Meadow Marsh/ Shallow Aquatic Mosaic (pond)
2	FODM11	Naturalized Deciduous Hedgerow
3	SWD6-2	Silver Maple Organic Deciduous Swamp
4	FOM7-2	Moist- Fresh White Cedar - Birch - Aspen Mixed Forest
5	SWD4	Mineral Deciduous Swamp
6	MAM2-2	Reed Canary Grass Mineral Meadow Marsh
7	FOD6-5	Fresh - Moist Sugar Map - Hardwood Deciduous Forest
8	CUM	Cultural Meadow
9	FOD3-1	Dry - Fresh Aspen - Poplar Deciduous Forest
-	CRV	Residential
-	OAGM1	Annual Row Crops
-	IAG	Agricultural Infrastructure



Project No.:	15726-001	Date:	February 2023
Scale:	1:4,500	Rev.:	
Created by:	DBB	Checked by:	KD
Figure:	2		



NATURAL HERITAGE EVALUATION

PAUL KIDD
2095 County Road 6, Hall Glen,
Douro-Dummer, Ontario

LEGEND

- Butternut
- Seepage Areas
- Soil Point
- Vegetation Protection Zone (30m)
- Verified Wetland Boundaries
- Laneway
- Watercourse
- Vegetation Communities
- Butternut Setback (25m)
- Developable Area (approximate)
- Unevaluated Wetlands
- Pond
- Adjacent Lands (120m)
- Site (18.27ha) (approximate)

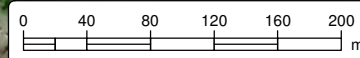
Notes:
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NATURAL HERITAGE CONSTRAINTS

Project No.:	15726-001	Date:	February 2023
Scale:	1:4,763	Rev.:	
Created by:	DBB	Projection:	NAD 1983 UTM Zone 17N
Checked by:	KD	Figure:	3





Natural Heritage Evaluation – 2095 County Road 6, Hall's Glen, Douro-Dummer, County of Peterborough, Ontario

Paul Kidd

Cambium Reference: 15726-001

April 16, 2024

Appendix A

Correspondence

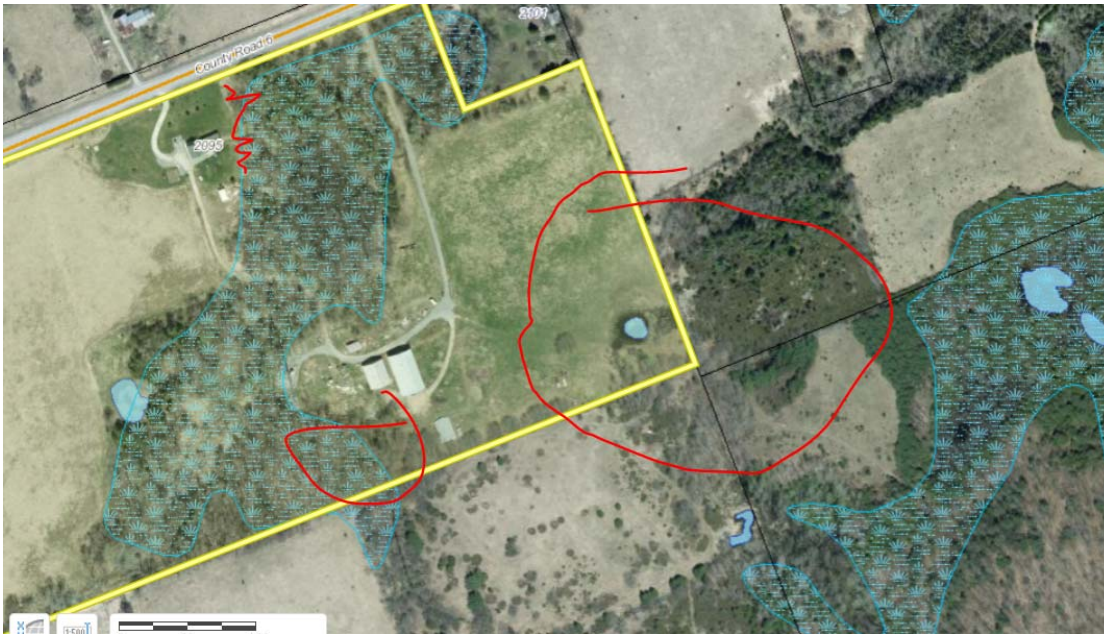
Kristina Domsic

From: Matt Wilkinson <mwilkinson@otonabeeconservation.com>
Sent: August 22, 2022 12:33 PM
To: Kristina Domsic; Jasmine Gibson
Cc: Cambium Admin
Subject: RE: Terms of Reference for EIS at 2095 County Road 6, Douro-Dummer (Cambium Ref: 15726-001)

Hi Kristina,

I'm assuming that no development would be proposed along with severing the existing house? If so, I would suggest focusing your efforts on providing mitigations (e.g., zoning) for the VPZ so future development might be limited.

I would also ask for more of your focus be about the future building envelope, and ensuring a 30m buffer is present from that area.



Best,
Matt

Matt Wilkinson
Planner
705-745-5791 x213
mwilkinson@otonabeeconservation.com

From: Kristina Domsic <Kristina.Domsic@cambium-inc.com>
Sent: August 10, 2022 12:00 PM
To: Matt Wilkinson <mwilkinson@otonabeeconservation.com>; Jasmine Gibson <jgibson@otonabeeconservation.com>
Cc: Cambium Admin <file@cambium-inc.com>
Subject: Terms of Reference for EIS at 2095 County Road 6, Douro-Dummer (Cambium Ref: 15726-001)

This message's attachments contains at least one web link. This is often used for phishing attempts. Please only interact with this attachment if you know its source and that the content is safe. If in doubt, confirm the legitimacy with the sender by phone.

Hello Matt and Jasmine,

Cambium was retained by Paul Kidd to conduct an Environmental Impact Study (EIS) at 2095 County Road 6, Douro-Dummer (the Site; see attached PSR and maps). The proposed development is to sever 1.5 acres, to include the existing residence fronting on County Road 6, and establish a new building envelope on the retained lands (approx. 46 acres). Note that the proposed severance size has been reduced based on feedback provided in the PSR. The new proposed dwelling on the retained lands would ideally be located in the southeast field, to be accessed using the existing farm laneway. The Site is within 120 m of mapped natural heritage features including: unevaluated wetlands and seepage areas (as indicated on page 8 of the PSR). Based on a preliminary review of orthoimagery and LiDAR, a channelized watercourse may also be present on the Site, associated with the mapped wetland area. Based on a preliminary desktop assessment, three species at risk (SAR) require further screening via field-based habitat assessment: Bobolink (threatened), Eastern Meadowlark (threatened), and Grasshopper Sparrow (special concern).

We propose the following Terms of Reference for the EIS:

One Site visit to be conducted this summer (Aug-Sept) to document natural features on the property:

- Delineate the boundaries of any wetlands based on the Ontario Wetland Evaluation System (OWES) for Southern Ontario (Ministry of Natural Resources, 2013). Soils will be sampled where vegetation is not clearly indicative of wetland vs terrestrial conditions.
- Classify existing vegetation communities on the Site, according to the Ecological Land Classification System for Southern Ontario (Lee, et al., 1998), and evaluate them for sensitivity, rarity, and botanical quality.
- Document any surface water drainage connectivity and characteristics including riparian vegetation, erosion prone areas, and special habitat features.
- Record observations of wildlife occurrences and assess wildlife habitat function on the Site, including SAR habitat. Any evidence of breeding, forage, shelter or nesting sites, and/or travel corridors will be noted. A habitat-based screening for SAR will be completed for the Site. In particular, the proposed building area (southeast field) will be assessed for grassland bird habitat.

An EIS report that meets the requirements of the Provincial Policy Statement (PPS), Growth Plan for the Greater Golden Horseshoe (GPGGH), and local policies will be provided based on information collected through the background review and field studies. The report will include detailed mapping of natural features present on the Site. Recommendations included in the report will illustrate how the proposed development and site alteration can be carried out in a manner that ensures the protection of these features and their hydrologic functions. Should any endangered or threatened SAR or their habitat be identified, environmental constraint areas will be developed to protect the habitat of these species, as required under the Endangered Species Act, 2007.

Please let me know if you have any questions or input with regards to this project.

Kind regards,
Kristina



Kristina Domsic, B.E.S
Project Coordinator/Ecologist

Cambium - Peterborough

📱 705.559.2136

☎ 866.217.7900

🌐 cambium-inc.com



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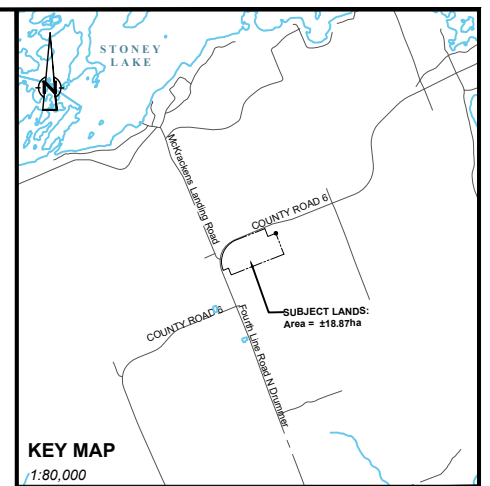
Natural Heritage Evaluation – 2095 County Road 6, Hall's Glen, Douro-Dummer, County of Peterborough, Ontario

Paul Kidd

Cambium Reference: 15726-001

April 16, 2024

Appendix B
Consent Sketch



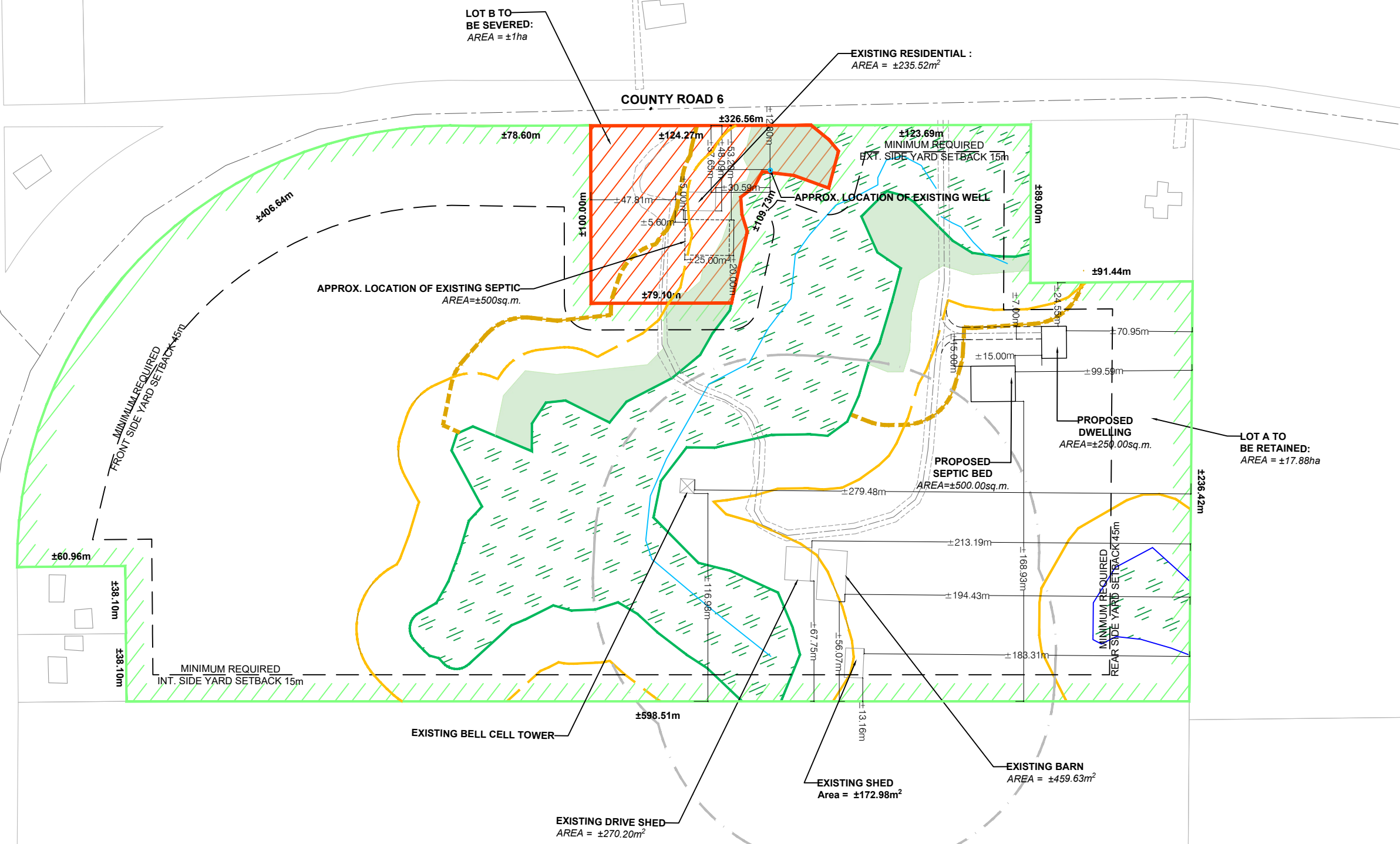
KEY MAP
1:80,000

LEGEND

- EXISTING PARCEL
- EXISTING STRUCTURES
- EXISTING DRIVEWAY
- 30m WETLAND BUFFER
- 30m WOODLAND BUFFER
- EXISTING WETLAND
(PROVIDED BY CAMBIUM, 2023)
- LANDS TO BE SEVERED
- LANDS TO BE RETAINED
- 108m MDS ARC FOR BARN
- POTENTIALLY SIGNIFICANT WOODLAND
- EXISTING SEEPAGE AREA
(PROVIDED BY CAMBIUM, 2023)
- EXISTING SEPTIC SYSTEM
- EXISTING WELL

NOTES:

1. Property Boundaries are approximate



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 311 George St. N., Suite 200
 Peterborough ON K9J 3H3
 Tel: 705-876-8340 Fax: 705-742-8343
 www.ecovueconsulting.com

DRAWN BY: PP	PROJECT No.: 22-2493
APPROVED BY:	HORIZ. SCALE: 1:2,500
REVISION DATE: JANUARY 10, 2024	PLOT DATE: JANUARY 10, 2024

CR 6 SEVERANCE
 PAUL KIDD
 2095 County Road 6
 PART OF LOT 26, CONCESSION 4
 TOWNSHIP OF DOURO-DUMMER
 COUNTY OF PETERBOROUGH



Natural Heritage Evaluation – 2095 County Road 6, Hall's Glen, Douro-Dummer, County of Peterborough, Ontario

Paul Kidd

Cambium Reference: 15726-001

April 16, 2024

Appendix C

Photographic Log



Photo 1 Looking upstream at the watercourse on the north side of the Site, August 2022.



Photo 2 Looking downstream at the watercourse on the north side of the Site, August 2022.



Photo 3 *Looking upstream at the watercourse at an area of standing water, August 2022.*



Photo 4 *Looking upstream at the watercourse on the south side of the Site, August 2022.*



Photo 5 Plastic culvert inlet crossing the eastern laneway, August 2022.



Photo 6 Plastic culvert outlet crossing the eastern laneway, August 2022.



Photo 7 Perched steel culvert inlet crossing the western laneway, August 2022.



Photo 8 Buried steel culvert outlet crossing the western laneway, August 2022.



Photo 9 Plastic culvert inlet on the south side of Site, August 2022.



Photo 10 Plastic culvert outlet on the south side of Site, August 2022.



Natural Heritage Evaluation – 2095 County Road 6, Hall's Glen, Douro-Dummer, County of Peterborough, Ontario

Paul Kidd

Cambium Reference: 15726-001

April 16, 2024

Appendix D
Vegetation Species List



VEGETATION

COMMUNITY

CLASSIFICATION: MAM/SASCOMMUNITY #: 1LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.521495,
-78.1279029PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	<i>Populus balsamifera</i>	Salicaceae	-3	4			S5
Bebb's Willow	<i>Salix bebbiana</i>	Salicaceae	-3	4			S5
Bittersweet Nightshade	<i>Solanum dulcamara</i>	Solanaceae	0				SNA
Broad-leaved Cattail	<i>Typha latifolia</i>	Typhaceae	-5	1			S5
Bull Thistle	<i>Cirsium vulgare</i>	Asteraceae	3				SNA
Common Boneset	<i>Eupatorium perfoliatum</i>	Asteraceae	-3	2			S5
Glandular Willowherb	<i>Epilobium ciliatum ssp. glandulosum</i>	Onagraceae	-3	3			SU
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	Asteraceae	0	2			S5
Nodding Beggarticks	<i>Bidens cernua</i>	Asteraceae	-5	2			S5
Northern Water-horehound	<i>Lycopus uniflorus</i>	Lamiaceae	-5	5			S5
Reed Canarygrass	<i>Phalaris arundinacea var. arundinacea</i>	Poaceae	-3	0			S5
Slender Stinging Nettle	<i>Urtica dioica ssp. gracilis</i>	Urticaceae	0	2			S5
Soft-stemmed Bulrush	<i>Schoenoplectus tabernaemontani</i>	Cyperaceae	-5	5			S5
Spotted Joe Pye Weed	<i>Eutrochium maculatum var. maculatum</i>	Asteraceae	-5	3			S5
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5

NOTES: Meadow Marsh with a pond.



VEGETATION
COMMUNITY

CLASSIFICATION: MAM/SAS

COMMUNITY #: 1

LOCATION: 2095 County Road 6,
Hall Glen

COORDINATES: 44.521495,
-78.1279029

PROJECT NUMBER: 15726-001

DATE: August 24, 2022

PROJECT
MANAGER: Kristina Domsic

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: FODM11COMMUNITY #: 2LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.5201675,
-78.0939636PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	Cornaceae	3	6			S5
Basswood	<i>Tilia americana</i>	Tiliaceae	3	4			S5
Black Cherry	<i>Prunus serotina</i> var. <i>serotina</i>	Rosaceae	3	3			S5
Broad-leaved Enchanter's Nightshade	<i>Circaea canadensis</i>	Onagraceae	3	2			S5
Calico Aster	<i>Symphotrichum lateriflorum</i> var. <i>lateriflorum</i>	Asteraceae	0	3			S5
Chokecherry	<i>Prunus virginiana</i> var. <i>virginiana</i>	Rosaceae	3	2			S5
Climbing Bittersweet	<i>Celastrus scandens</i>	Celastraceae	3	3			S5
Common Apple	<i>Malus pumila</i>	Rosaceae	5				SNA
Common Motherwort	<i>Leonurus cardiaca</i> ssp. <i>cardiaca</i>	Lamiaceae	5				SNA
Common Timothy	<i>Phleum pratense</i> ssp. <i>pratense</i>	Poaceae	3				SNA
Creeping Wood-sorrel	<i>Oxalis corniculata</i>	Oxalidaceae	3				SNA
Eastern Red Cedar	<i>Juniperus virginiana</i>	Cupressaceae	3	4			S5
European Buckthorn	<i>Rhamnus cathartica</i>	Rhamnaceae	0				SNA
Orchard Grass	<i>Dactylis glomerata</i>	Poaceae	3				SNA
Paper Birch	<i>Betula papyrifera</i>	Betulaceae	3	2			S5
Red Clover	<i>Trifolium pratense</i>	Fabaceae	3				SNA
Riverbank Grape	<i>Vitis riparia</i>	Vitaceae	0	0			S5
Slender Stinging Nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>	Urticaceae	0	2			S5
Smooth Brome	<i>Bromus inermis</i>	Poaceae	5				SNA
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	3	4			S5
Tall Goldenrod	<i>Solidago altissima</i>	Asteraceae	3	1			S5
Tufted Vetch	<i>Vicia cracca</i>	Fabaceae	5				SNA
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vitaceae	3	6			S4?
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5
Wild Carrot	<i>Daucus carota</i>	Apiaceae	5				SNA

NOTES: Deciduous hedgerow.



VEGETATION
COMMUNITY

CLASSIFICATION: FODM11

PROJECT NUMBER: 15726-001

COMMUNITY #: 2

DATE: August 24, 2022

LOCATION: 2095 County Road 6,
Hall Glen

PROJECT
MANAGER: Kristina Domsic

COORDINATES: 44.5201675,
-78.0939636

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: SWD6-2COMMUNITY #: 3LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.522772,
-78.1285844PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	<i>Populus balsamifera</i>	Salicaceae	-3	4			S5
Bittersweet Nightshade	<i>Solanum dulcamara</i>	Solanaceae	0				SNA
Black Ash	<i>Fraxinus nigra</i>	Oleaceae	-3	7			S3
Calico Aster	<i>Symphotrichum lateriflorum var. lateriflorum</i>	Asteraceae	0	3			S5
Canada Wood Nettle	<i>Laportea canadensis</i>	Urticaceae	-3	6			S5
Dwarf Raspberry	<i>Rubus pubescens</i>	Rosaceae	-3	4			S5
Hop Sedge	<i>Carex lupulina</i>	Cyperaceae	-5	6			S5
Northern Water-hemlock	<i>Cicuta virosa</i>	Apiaceae	-5				S4?
Paper Birch	<i>Betula papyrifera</i>	Betulaceae	3	2			S5
Poison Ivy	<i>Toxicodendron radicans</i>	Anacardiaceae	0	2			S5
Red Maple	<i>Acer rubrum</i>	Aceraceae	0	4			S5
Red-osier Dogwood	<i>Cornus sericea</i>	Cornaceae	-3	2			S5
Reed Canarygrass	<i>Phalaris arundinacea var. arundinacea</i>	Poaceae	-3	0			S5
Riverbank Grape	<i>Vitis riparia</i>	Vitaceae	0	0			S5
Sensitive Fern	<i>Onoclea sensibilis</i>	Dryopteridaceae	-3	4			S5
Silver Maple	<i>Acer saccharinum</i>	Aceraceae	-3	5			S5
Spotted Jewelweed	<i>Impatiens capensis</i>	Balsaminaceae	-3	4			S5
Trembling Aspen	<i>Populus tremuloides</i>	Salicaceae	0	2			S5
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5

NOTES: Silver Maple swamp.



VEGETATION
COMMUNITY

CLASSIFICATION: SWD6-2

COMMUNITY #: 3

LOCATION: 2095 County Road 6,
Hall Glen

COORDINATES: 44.522772,
-78.1285844

PROJECT NUMBER: 15726-001

DATE: August 24, 2022

PROJECT
MANAGER: Kristina Domsic

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: FOM7-2COMMUNITY #: 4LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.5225228,
-78.1292662PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	<i>Populus balsamifera</i>	Salicaceae	-3	4			S5
Broad-leaved Enchanter's Nightshade	<i>Circaea canadensis</i>	Onagraceae	3	2			S5
Broad-leaved Helleborine	<i>Epipactis helleborine</i>	Orchidaceae	3				SNA
Eastern White Cedar	<i>Thuja occidentalis</i>	Cupressaceae	-3	4			S5
Indian-pipe	<i>Monotropa uniflora</i>	Monotropaceae	3	6			S5
Jack-in-the-pulpit	<i>Arisaema triphyllum ssp. triphyllum</i>	Araceae	-3	5			S5
Paper Birch	<i>Betula papyrifera</i>	Betulaceae	3	2			S5
Sensitive Fern	<i>Onoclea sensibilis</i>	Dryopteridaceae	-3	4			S5
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5

NOTES: Mixed transitional forest. Cedar > poplar, birch. Sensitive fern scarce in community.

VEGETATION COMMUNITY PHOTOS:



VEGETATION
COMMUNITYCLASSIFICATION: SWD4COMMUNITY #: 5LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.5261606,
-78.1370355PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	<i>Populus balsamifera</i>	Salicaceae	-3	4			S5
Calico Aster	<i>Symphotrichum lateriflorum</i> var. <i>lateriflorum</i>	Asteraceae	0	3			S5
Common Self-heal	<i>Prunella vulgaris</i> ssp. <i>vulgaris</i>	Lamiaceae	0				SNA
Giant Goldenrod	<i>Solidago gigantea</i> var. <i>gigantea</i>	Asteraceae	-3	4			S5
Glandular Willowherb	<i>Epilobium ciliatum</i> ssp. <i>glandulosum</i>	Onagraceae	-3	3			SU
Hop Sedge	<i>Carex lupulina</i>	Cyperaceae	-5	6			S5
Manitoba Maple	<i>Acer negundo</i>	Aceraceae	0	0			S5
Nodding Beggarticks	<i>Bidens cernua</i>	Asteraceae	-5	2			S5
Poison Ivy	<i>Toxicodendron radicans</i>	Anacardiaceae	0	2			S5
Red Maple	<i>Acer rubrum</i>	Aceraceae	0	4			S5
Reed Canarygrass	<i>Phalaris arundinacea</i> var. <i>arundinacea</i>	Poaceae	-3	0			S5
Sensitive Fern	<i>Onoclea sensibilis</i>	Dryopteridaceae	-3	4			S5
Silver Maple	<i>Acer saccharinum</i>	Aceraceae	-3	5			S5
Spotted Jewelweed	<i>Impatiens capensis</i>	Balsaminaceae	-3	4			S5
Spotted Jewelweed	<i>Impatiens capensis</i>	Balsaminaceae	-3	4			S5
Spotted Joe Pye Weed	<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Asteraceae	-5	3			S5
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5
Wild Cucumber	<i>Echinocystis lobata</i>	Cucurbitaceae	-3	3			S5

NOTES: Balsam Poplar Swamp



VEGETATION
COMMUNITY

CLASSIFICATION: SWD4

COMMUNITY #: 5

PROJECT NUMBER: 15726-001

DATE: August 24, 2022

LOCATION: 2095 County Road 6,
Hall Glen

COORDINATES: 44.5261606,
-78.1370355

PROJECT
MANAGER: Kristina Domsic

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: MAM2-2 COMMUNITY #: 6PROJECT NUMBER: 15726-001 DATE: August 24, 2022LOCATION: 2095 County Road 6,
Hall GlenPROJECT
MANAGER: Kristina DomsicCOORDINATES: 44.5261606,
-78.1370355FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Bittersweet Nightshade	<i>Solanum dulcamara</i>	Solanaceae	0				SNA
Canada Wood Nettle	<i>Laportea canadensis</i>	Urticaceae	-3	6			S5
Purple-stemmed Aster	<i>Symphotrichum puniceum</i> var. <i>puniceum</i>	Asteraceae	-5	6			S5
Reed Canarygrass	<i>Phalaris arundinacea</i> var. <i>arundinacea</i>	Poaceae	-3	0			S5
Spottedewelweed	<i>Impatiens capensis</i>	Balsaminaceae	-3	4			S5
Spotted Joe Pye Weed	<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Asteraceae	-5	3			S5
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5

NOTES: Meadow Marsh dominated by Reed Canarygrass

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: FOD6-5COMMUNITY #: 7LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.5201454,
-78.1301094PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	Cornaceae	3	6			S5
Basswood	<i>Tilia americana</i>	Tiliaceae	3	4			S5
Black Cherry	<i>Prunus serotina var. serotina</i>	Rosaceae	3	3			S5
Broad-leaved Enchanter's Nightshade	<i>Circaea canadensis</i>	Onagraceae	3	2			S5
Broad-leaved Helleborine	<i>Epipactis helleborine</i>	Orchidaceae	3				SNA
Eastern White Cedar	<i>Thuja occidentalis</i>	Cupressaceae	-3	4			S5
Herb-Robert	<i>Geranium robertianum</i>	Geraniaceae	3	2			S5
Jack-in-the-pulpit	<i>Arisaema triphyllum ssp. triphyllum</i>	Araceae	-3	5			S5
Paper Birch	<i>Betula papyrifera</i>	Betulaceae	3	2			S5
Red Raspberry	<i>Rubus idaeus</i>	Rosaceae	3	2			S5
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	3	4			S5
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vitaceae	3	6			S4?
White Spruce	<i>Picea glauca</i>	Pinaceae	3	6			S5

NOTES: Deciduous Forest dominated by Sugar Maple.



VEGETATION
COMMUNITY

CLASSIFICATION: FOD6-5

COMMUNITY #: 7

LOCATION: 2095 County Road 6,
Hall Glen

COORDINATES: 44.5201454,
-78.1301094

PROJECT NUMBER: 15726-001

DATE: August 24, 2022

PROJECT
MANAGER: Kristina Domsic

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: CUMCOMMUNITY #: 8LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.5214682,
-78.1307872PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Annual Fleabane	<i>Erigeron annuus</i>	Asteraceae	3	0			S5
Bull Thistle	<i>Cirsium vulgare</i>	Asteraceae	3				SNA
Butter-and-eggs	<i>Linaria vulgaris</i>	Scrophulariaceae	5				SNA
Canada Horseweed	<i>Erigeron canadensis</i>	Asteraceae	3	0			S5
Common Evening-primrose	<i>Oenothera biennis</i>	Onagraceae	3	0			S5
Common Milkweed	<i>Asclepias syriaca</i>	Apocynaceae	5	0			S5
Common Mullein	<i>Verbascum thapsus ssp. thapsus</i>	Scrophulariaceae	5				SNA
Common Self-heal	<i>Prunella vulgaris ssp. vulgaris</i>	Lamiaceae	0				SNA
Common Timothy	<i>Phleum pratense ssp. pratense</i>	Poaceae	3				SNA
Common Viper's Bugloss	<i>Echium vulgare</i>	Boraginaceae	5				SNA
English Plantain	<i>Plantago lanceolata</i>	Plantaginaceae	3				SNA
Garden Bird's-foot Trefoil	<i>Lotus corniculatus</i>	Fabaceae	3				SNA
Orchard Grass	<i>Dactylis glomerata</i>	Poaceae	3				SNA
Red Clover	<i>Trifolium pratense</i>	Fabaceae	3				SNA
Redtop	<i>Agrostis gigantea</i>	Poaceae	-3				SNA
Smooth Brome	<i>Bromus inermis</i>	Poaceae	5				SNA
Tufted Vetch	<i>Vicia cracca</i>	Fabaceae	5				SNA
White Sweet-clover	<i>Melilotus albus</i>	Fabaceae	3				SNA
Wild Carrot	<i>Daucus carota</i>	Apiaceae	5				SNA

NOTES: Cultural Meadow. Monarchs



VEGETATION
COMMUNITY

CLASSIFICATION: CUM

PROJECT NUMBER: 15726-001

COMMUNITY #: 8

DATE: August 24, 2022

LOCATION: 2095 County Road 6,
Hall Glen

PROJECT
MANAGER: Kristina Domsic

COORDINATES: 44.5214682,
-78.1307872

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





VEGETATION

COMMUNITY

CLASSIFICATION: FOD3-1COMMUNITY #: 9LOCATION: 2095 County Road 6,
Hall GlenCOORDINATES: 44.5192212,
-78.1337233PROJECT NUMBER: 15726-001DATE: August 24, 2022PROJECT
MANAGER: Kristina DomsicFIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	Cornaceae	3	6			S5
Basswood	<i>Tilia americana</i>	Tiliaceae	3	4			S5
Bebb's Willow	<i>Salix bebbiana</i>	Salicaceae	-3	4			S5
Bracken Fern	<i>Pteridium aquilinum</i>	Dennstaedtiaceae	3	2			S5
Broad-leaved Enchanter's Nightshade	<i>Circaea canadensis</i>	Onagraceae	3	2			S5
Common Milkweed	<i>Asclepias syriaca</i>	Apocynaceae	5	0			S5
Common Self-heal	<i>Prunella vulgaris ssp. vulgaris</i>	Lamiaceae	0				SNA
Common Timothy	<i>Phleum pratense ssp. pratense</i>	Poaceae	3				SNA
Eastern White Cedar	<i>Thuja occidentalis</i>	Cupressaceae	-3	4			S5
European Buckthorn	<i>Rhamnus cathartica</i>	Rhamnaceae	0				SNA
Manitoba Maple	<i>Acer negundo</i>	Aceraceae	0	0			S5
Poison Ivy	<i>Toxicodendron radicans</i>	Anacardiaceae	0	2			S5
Red-osier Dogwood	<i>Cornus sericea</i>	Cornaceae	-3	2			S5
Reed Canarygrass	<i>Phalaris arundinacea var. arundinacea</i>	Poaceae	-3	0			S5
Riverbank Grape	<i>Vitis riparia</i>	Vitaceae	0	0			S5
Spreading Dogbane	<i>Apocynum androsaemifolium</i>	Apocynaceae	5	3			S5
Staghorn Sumac	<i>Rhus typhina</i>	Anacardiaceae	3	1			S5
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	3	4			S5
Tall Goldenrod	<i>Solidago altissima</i>	Asteraceae	3	1			S5
Trembling Aspen	<i>Populus tremuloides</i>	Salicaceae	0	2			S5
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vitaceae	3	6			S4?
White Elm	<i>Ulmus americana</i>	Ulmaceae	-3	3			S5
Wild Carrot	<i>Daucus carota</i>	Apiaceae	5				SNA

NOTES: Transition woodland dominated by Poplar.



VEGETATION
COMMUNITY

CLASSIFICATION: FOD3-1

COMMUNITY #: 9

LOCATION: 2095 County Road 6,
Hall Glen

COORDINATES: 44.5192212,
-78.1337233

PROJECT NUMBER: 15726-001

DATE: August 24, 2022

PROJECT
MANAGER: Kristina Domsic

FIELD STAFF: Tyler Jamieson

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:





Appendix E
Species of Conservation Concern Screening



APPENDIX: Species of Conservation Concern - County of Peterborough

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Birds								
Bald Eagle	<i>Haliaeetus leucocephalus</i>	No Status	SC	S2N,S4B	The Bald Eagle is a bird of prey with a white head, neck and tail, a massive bright yellow beak, powerful legs, and a wingspan of over 2 m. It nests in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting. These nests are usually on islands in freshwater lakes or in large trees such as the pine and poplar. During the winter, they may also be found near open bodies of water that do not freeze (1).	No	Known to occur in the general area	No further consideration required
Bank Swallow	<i>Riparia riparia</i>	THR	THR	S4B	The Bank Swallow is a small songbird of around 12 cm long with a distinctive dark breast band, that flies with quick and erratic wingbeats (1). It nests in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. This can include banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. However, they prefer sand-silt substrates for excavating their nest burrows. They often use large wetlands as communal nocturnal roosts post-breeding or during wintering periods (2).	No	Known to occur in the general area	No further consideration required
Barn Swallow	<i>Hirundo rustica</i>	THR	SC	S4B	The Barn Swallow is a mid-sized songbird with steel-blue backs and wings, glossy in males, and a line of white spots across its upper tail. It lives in a variety of open habitats for foraging, such as grassy fields, pastures, certain agricultural crops, shorelines, cottage areas, wetlands, or subarctic tundra (2). They prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud, typically attached to horizontal beams or vertical walls underneath an overhang (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential significant wildlife habitat on-site
Black Tern	<i>Chlidonias niger</i>	No Status	SC	S3B	The Black Tern is a small waterbird with a forked tail, straight pointed bill, slender shape, and black head during breeding season. It builds floating nests in loose colonies in shallow marshes, with a preference for cattails. They breed primarily in the marshes along the edges of the Great Lakes, but may also use wetlands further north if suitable (1).	No	Known to occur in the general area	No further consideration required
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B	The Bobolink is a mid-sized songbird of tan colour with black stripes, except for males during summer breeding season who are black with a white back and yellow collar. It prefers tall, grassy meadows, hayfields and some croplands, and feeds (largely on insects) on the ground in dense grasses (1). It tends to nest in forage crops: hayfields and pastures dominated by species including clover, bluegrass, and broadleaf plants (2).	No	Known to occur in the general area	No further consideration required
Canada Warbler	<i>Cardellina canadensis</i>	THR	SC	S4B	The Canada Warbler is a small songbird with bright yellow underparts and bluish-grey back and tail (1). It can be found in a variety of forest types, but is most abundant in moist, mixed forests with a well-developed, dense shrub layer. Nests are usually located on or near the ground on mossy logs, and along stream banks (3).	No	Known to occur in the general area	No further consideration required
Cerulean Warbler	<i>Setophaga cerulea</i>	END	THR	S3B	The Cerulean Warbler, a small songbird, is blue-green with white eyebrows and two prominent white wing bars (1). It requires relatively large tracts of mature deciduous forest (>100 ha), and nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understorey (4).	No	Known to occur in the general area	No further consideration required
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	S4B,S4N	The Chimney Swift is a small bird, between 12 and 14 cm, with a brown, cigar-shaped body, slender wings, and an erratic flight pattern. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. Now, it is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. They also tend to stay in habitat close to the water (1).	No	Known to occur in the general area	No further consideration required



APPENDIX: Species of Conservation Concern - County of Peterborough

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Common Nighthawk	<i>Chordeiles minor</i>	THR	SC	S4B	The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and large eyes. Its plumage of dark brown with black and white specks blends with its roost site. It is typically found in open areas such as gravel beaches, rock outcrops and burned woodlands, that have little to no ground vegetation. This species can also be found in highly disturbed locations such as clear cuts, mine tailing areas, cultivated fields, urban parks, gravel roads, and orchards (1).	No	Known to occur in the general area	No further consideration required
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B	The Eastern Meadowlark is a medium-sized migratory songbird with a bright yellow throat and belly, a black V shape on its chest, and a pointed bill. It prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields, human-use areas such as airports and roadsides, or other open areas. The Eastern Meadowlark can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses (1).	No	Known to occur in the general area	No further consideration required
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	THR	S4B	The Eastern Whip-poor-will is a medium-sized bird with mottled brown and grey feathers to blend in with its surroundings, a large flattened head, and small bill. They are usually found in areas with a mix of open and forested areas such as patchy forests with clearings, forests that are regenerating after major disturbances, savannahs, open woodlands or openings in more mature forests. Breeding habitat is dependent on forest structure rather than composition, although common tree associations are pine and oak, and it nests directly on the forest floor (2). The species prefers to nest in semi-open or patchy forests with clearings as it forages in open areas and uses forested areas for roosting (1).	No	Known to occur in the general area	No further consideration required
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	S4B	The Eastern Wood-pewee is a species of 'flycatcher', a bird that eats flying insects. It grows to approximately 15 cm, has greyish-olive upper parts and pale bars on its wings. This species lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation (1). It typically creates nests on tree branches 2-12 m in height (2).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential significant wildlife habitat on-site
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	SC	SC	S4B	The Evening Grosbeak is a large songbird with a thick greenish bill. It is a social bird that is often found in flocks, particularly during the winter months. Their preferred habitat is thick coniferous forest. During their breeding season, they are generally found in open, mature mixed forests dominated by Firs, White Spruce, or Trembling Aspen (1).	No	Known to occur in the general area	No further consideration required
Golden Winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC	S4B	The Golden-winged Warbler is a small songbird with distinctive yellow wing patches and patches behind their eyes. It inhabits early successional habitat of old fields and favour areas where trees are spread out or forest edges to use for perching, singing, and searching for food. They seem to prefer regeneration zones with young shrub growth, surrounded by mature forest, locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas for their breeding sites; often frequenting clusters of herbaceous plants and low bushes (1).	No	Known to occur in the general area	No further consideration required
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	SC	S4B	The Grasshopper Sparrow is a small songbird with a streaked back, a white stripe down the center of its crown, a flattish head, and a conical beak. It inhabits open grasslands and prairies with well-drained soil, preferring areas that are sparsely vegetated. It will also nest in hayfields and pastures, as well as alvars and occasionally grain crops such as barley (1).	No	Known to occur in the general area	No further consideration required



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COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Least Bittern	<i>Ixobrychus exilis</i>	THR	THR	S4B	The Least Bittern is a small member of the heron family, reaching around 30 cm in length. It has brown and beige plumage with chestnut patches on its wings (1). The species nests in marshes (> 5 - 10 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (4).	No	Known to occur in the general area	No further consideration required
Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	END	S2B	The Loggerhead Shrike is a small bird with a black, hooked bill, grey crown, and white throat and chest. This species has specific habitat requirements that are dependent on active livestock grazing, or grassland areas that have naturally short grass cover (i.e. alvar communities). They also require spiny, multi-branched shrubs, or barbed fencing, to catch prey. They prefer grassland habitats that have sporadic occurrences of low trees and shrubs; particularly hawthorn species, which are used as part of their feeding behaviour (1).	No	Known to occur in the general area	No further consideration required
Olive-sided Flycatcher	<i>Contopus cooperi</i>	THR	SC	S4B	The Olive-sided Flycatcher is a medium-sized songbird with olive colouring, often seen perching on top of tall trees waiting to catch their prey. It prefers open areas along natural mature forest edges, forest edges near natural openings such as rivers or swamps, human-made openings, or burned forest openings with numbers of dead trees. Breeding habitat usually consists of coniferous or mixed forests adjacent to rivers or wetlands, in Ontario often nesting in White and Black Spruce, Jack Pine, and Balsam Fir (1).	No	Known to occur in the general area	No further consideration required
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	END	S4B	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well as a strong bill. The species can be found in open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. These areas must contain a large number of dead trees for perching and nesting (1).	No	Known to occur in the general area	No further consideration required
Short-eared owl	<i>Asio flammeus</i>	SC	SC	S2N,S4B	The Short-eared Owl has a large round head with small tufts of feathers, long wings, a short tail, and cryptic colouring of brown streaks. This species is found in scattered pockets across the province where suitable open habitat, including grasslands, tundra, peat bogs and marsh, can be found in sufficient quantities. Adults build nests on the ground in grassy areas and occasionally agricultural fields (1). The main factor influencing their choice in habitat is believed to be an abundance of their food source, primarily rodents and other small mammals (2).	No	Known to occur in the general area	No further consideration required
Wood Thrush	<i>Hylocichla mustelina</i>	THR	SC	S4B	The Wood Thrush is a medium-sized songbird of around 20 cm with rusty brown coloured upper parts and white underparts with large dark spots. It breeds in deciduous and mixed forests with moderate understories, shade and abundant leaf litter where it forages for food, including larval and adult insects as well as plant material. They prefer moist stands of trees with well-developed undergrowth and tall trees for perches (1).	No	Known to occur in the general area	No further consideration required
Fish								
American Eel	<i>Anguilla rostrata</i>	No Status	END	S1?	The American Eel is a long, slender bodied fish, with one long fin extending down the back and around the tail, and two small pectoral fins. It has thick lips, and a protruding lower jaw that extends out above the upper jaw. At the juvenile stage, they swim up the St. Lawrence River to reach Lake Ontario and connected tributaries where they will remain for 8 to 23 years before migrating back to their spawning grounds. In Ontario, the American eel prefers mud, sand or gravel substrates during the juvenile stage when they reside primarily in the benthic zone of waterbodies. More mature eels are able to thrive in most environments provided there is available cover during daylight hours, and the habitat is accessible (2).	No	Known to occur in the general area	No further consideration required



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Lake Sturgeon	<i>Acipenser fulvescens</i>	No status	END	S2	The Lake Sturgeon, a large freshwater fish, has an extended snout with four whisker-like organs hanging near the mouth and is dark to light brown or grey on its back and sides with a lighter belly. In Ontario, this fish is found in the rivers of the Hudson Bay Basin, the Great Lakes basin, and their connecting waterways. Lake Sturgeon's live almost exclusively in freshwater lakes and rivers with soft bottoms of mud, sand or gravel and are usually found at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water or if available deeper water habitat as well (1).	No	Known to occur in the general area	No further consideration required
Northern Sunfish (Great Lakes - Upper St. Lawrence population)	<i>Lepomis peltastes</i>	SC	SC	S3	The Northern Sunfish is a small (about 130 mm long), typical looking member of the sunfish family (Centrarchidae). It has a deep, laterally compressed and olive coloured body with bright blue and red markings. In Ontario, the Northern Sunfish lives in shallow vegetated areas of quiet, slow flowing rivers and streams, as well as warm lakes and ponds, with sandy banks or rocky bottoms. Northern Sunfish prefer to be near aquatic vegetation where they can avoid strong currents. The Great Lakes - Upper St. Lawrence Populations are found throughout southern Ontario including waters flowing into Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie and Lake Ontario, as well as rivers and small lakes in eastern Ontario (1).	No	Known to occur in the general area	No further consideration required
Herptiles								
Blanding's Turtle	<i>Emydoidea blandingii</i>	END	THR	S3	Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1).	No	Known to occur in the general area	No further consideration required
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	SC	SC	S3	The Eastern Musk Turtle is small with a narrow carapace, a dark brown body and two light stripes on each side of their head (5). It is a small freshwater turtle found primarily in slow moving water bodies with abundant emergent vegetation and mucky bottoms along the southern edge of the Canadian Shield within which they burrow into overwinter. Nesting sites vary, but must be close to the water and exposed to direct sunlight (1).	No	Known to occur in the general area	No further consideration required
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	SC	-	S4	The Midland Painted Turtle has a olive to black carapace with red or dark orange markings on the marginal scutes, as well as red and yellow stripes on the head and neck. The species uses a variety of waterbodies including, ponds, marshes, lakes and slow-moving creeks with a soft bottom and an abundance of basking sites and aquatic vegetation. This species usually hibernates on the bottom of waterbodies (5).	No	Known to occur in the general area	No further consideration required
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	S3	The Northern Map Turtle is a medium sized turtle identified by its carapace's map contour-like patterning. It lives in larger lakes and rivers, requiring high water quality to support their primary prey species: molluscs. This species can often be seen in large groups basking together on rocks and logs. In the winter, the Northern Map Turtle can be found hibernating on the bottom of slow-moving rivers (1).	No	Known to occur in the general area	No further consideration required
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	S3	The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (5). It spends the majority of its life in water, preferring shallow water with soft mud and leaf litter, and will travel upland to gravel or sandy embankments, roadsides, along railway lines or beaches to lay their eggs (1).	No	Known to occur in the general area	No further consideration required



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Spotted Turtle	<i>Clemmys guttata</i>	END	END	S2	The Spotted Turtle is named after the distinct yellow spots on its carapace. The species is semi-aquatic and prefers ponds, marshes, bogs and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation. This species usually hibernates in wetlands or seasonally wet areas with structures such as overhanging banks, hummocks, tree roots, or aquatic animal burrows (1).	No	Known to occur in the general area	No further consideration required
Wood Turtle	<i>Glyptemys insculpta</i>	THR	END	S2	The Wood Turtle has orange coloured front legs, neck and chin and a sculpted carapace with raised, pyramidal scutes (5). They prefer clear rivers and streams that have moderate current, and sandy or gravelly substrates. This species spends more time on land than other turtle species including in meadows, swamps and fields. Wooded areas are an essential habitat component, and the species uses aquatic habitats for hibernation and mating. Nesting occurs in areas with sandy soil and abundant light (1).	No	Known to occur in the general area	No further consideration required
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	THR	THR	S3	The Eastern Hog-nosed Snake can be a variety of colours and patterns so is most easily identified by its flattened, upturned nose. They prefer sandy well-drained habitats such as beaches and dry forests because they lay their eggs, hibernate and burrow in these areas. The main diet of this snake is toads and frogs, so they usually stay close to water including marshes and swamps, where they have an increased chance of finding their preferred prey (1).	No	Known to occur in the general area	No further consideration required
Eastern Milksnake	<i>Lampropeltis triangulum</i>	SC	NAR	S4	The Eastern Milksnake's colouration is grey or tan with reddish alternating blotches outlines in black along its back and sides (5). It has recently been delisted from being a species at risk in Ontario (1). This species tends to use open habitats such as rocky outcrops, fields and forest edges. The preferred prey of milksnakes are mice, small rodents, and ground nesting birds which are amply found in and surrounding agricultural outbuildings. The milksnake is secretive and is not likely to be encountered during the day or at night while hunting (5).	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	SC	SC	S4	The Eastern Ribbonsnake is slender with three bright yellow stripes running down its back and sides and a white crescent in front of each eye. This snake is usually found close to water as they are strong swimmers, often fleeing predators by diving into shallow water. It prefers wetland habitats where its prey species, frogs and small fish, are abundant. Over winter, they congregate in underground burrows or rock crevices to hibernate (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential significant wildlife habitat on-site
Common Five-lined Skink (Southern Shield Population)	<i>Plestiodon fasciatus</i>	SC	SC	S3	The Common Five-lined Skink is Ontario's only lizard species. Its Southern Shield population can be found underneath rocks on open bedrock in forests and like to bask on sunny rocks and logs. They hibernate in crevices among rocks or buried in the soil (1). They hibernate in groups under rocks and tree stumps or in rotting wood (5).	No	Known to occur in the general area	No further consideration required
Western Chorus Frog	<i>Pseudacris triseriata</i>	THR	-	S3	The Western Chorus Frog is small with a dark stripe running through its eye and a light stripe underneath (5). It is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environments, including leaf litter, wood debris, and vacant animal burrows (2).	Yes: on-site	Known to occur in the general area	No further consideration required
Invertebrates								
Monarch Butterfly	<i>Danaus plexippus</i>	SC	SC	S2N,S4B	The Monarch is an orange and black butterfly with small white spots and a wingspan of around 10 cm. It relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers (1).	Yes: on-site and adjacent lands	Incidental observation on-site and adjacent lands	Potential significant wildlife habitat on-site



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Mottled Duskywing	<i>Erynnis martialis</i>	No Status	END	S2	The Mottled Duskywing is a medium-sized butterfly in the skipper family with a wingspan of 25-42 mm. It is dark grey with yellow-brown spots on its hind wings that give the species its mottled appearance and its name. The wings of freshly emerged adults have a purplish iridescence that fades with age. The mottled duskywing tends to live in dry habitats with sparse vegetation. These include open barrens, sandy patches among woodlands, and alvars. In Ontario, the mottled duskywing will only deposit their eggs on two closely-related plants: New Jersey tea and prairie redroot (1).	No	Known to occur in the general area	No further consideration required
West Virginia White	<i>Pieris virginiensis</i>	No Status	SC	S3	The West Virginia White is a small, dingy white butterfly. This species is found in moist deciduous woods, and requires a supply of toothwort, a small, spring-blooming plant, which provides the only source of food for its larvae. The West Virginia White is found mostly in the central and southern parts of Ontario, but its range extends north to Manitoulin and St. Joseph islands (1).	No	Known to occur in the general area	No further consideration required
Yellow-banded Bumble Bee	<i>Bombus terricola</i>	SC	SC	S3S5	The Yellow-banded Bumble Bee is a medium-sized bumble bee with a distinct yellow and black abdominal band pattern found on its queens, males, and workers. This species is a forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. It can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. The Yellow-banded Bumble Bee ranges from the Mixedwood Plains of southern Ontario to the Hudson Bay Lowlands in the north (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential significant wildlife habitat on-site
Mammals								
Tri-colored Bat	<i>Perimyotis subflavus</i>	END	END	S3?	The Tri-colored Bat is small, with pale brown with orange-red forearms, muzzle, and ears. It is named for the black, yellow, and brown hairs on its back. It is considered rare in this region of Ontario which is at the northernmost limit of the natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, but are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bats prefer an open forest habitat type in proximity to water (6).	Yes: on-site	Known to occur in the general area	Consideration required under the ESA
Eastern Small-footed Myotis	<i>Myotis leibii</i>	No Status	END	S2S3	The Eastern Small-footed Myotis has fur with black roots and shiny brown tips as well as very small feet. In the spring and summer, the Eastern Small-footed Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects. They hibernate in winter, often in caves and abandoned mines choosing colder and drier sites than other similar bats (1).	Yes: on-site	Known to occur in the general area	Consideration required under the ESA
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	S4	The Little Brown Myotis has glossy brown fur and a fleshy projection covering the entrance to its ears. This species roosts in trees and buildings, often selecting attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Bats hibernate from October/November to March/April, most often in caves or abandoned mines that are humid and remain above freezing (1).	Yes: on-site	Known to occur in the general area	Consideration required under the ESA
Northern Myotis	<i>Myotis septentrionalis</i>	END	END	S3	The Northern Myotis has dull yellow-brown fur with pale bellies and long, rounded ears. This species is found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October/November to March/April, most often in caves or abandoned mines (1).	No	Known to occur in the general area	No further consideration required



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Algonquin Wolf	<i>Canis lycaon</i>	SC	THR	S4	Formerly called the Eastern Wolf, this canine was recently renamed the Algonquin Wolf. In the southern portion of the province, this species prefers deciduous and mixed forest landscapes while their northern range include mixed and coniferous forests. It is most prevalent in areas with abundant prey species which include Beaver, White-tailed Deer and Moose. Dens sites are usually found in coniferous forests with easily excavated soil types like sand and close to a permanent water source (1).	No	Known to occur in the general area	No further consideration required
Trees, plants, fungi and lichens								
American Ginseng	<i>Panax quinquefolius</i>	END	END	S2	American Ginseng is a perennial plant which grows up to 60 centimetres in height. The leaves typically have five leaflets arranged in a whorl at the end of the leaf stem. The root looks like a gnarly parsnip. The flowers are an inconspicuous green-white in colour, but the berries are bright red and arranged in a cluster. In Ontario, the American Ginseng typically grows in rich, moist, and mature deciduous woods dominated by Sugar Maple, White Ash, and American Basswood. It typically grows in deep, nutrient rich soil over limestone or marble bedrock (1).	No	Confirmed absent through targeted surveys	No further consideration required
Black Ash	<i>Fraxinus nigra</i>	No status	END	S4	The Black Ash is a smaller-sized tree with a narrow crown, light grey and scaly bark, and green, oval leaflets on a central stalk. It grows everywhere in Ontario except for the far north, preferring moist climates and soils such as swampy woodlands or bogs (1).	Yes: on-site	Confirmed habitat on-site through targeted surveys	No further consideration required
Butternut	<i>Juglans cinerea</i>	END	END	S2?	The Butternut is a medium sized tree reaching 30 m in height. It has large compound leaves with 11 to 17 leaflets. The fruit is oval, fuzzy and sticky. In Ontario, the Butternut prefers moist, well-drained soil, often along streams, or occasionally well-drained gravel sites. It grows alone or in small groups in deciduous forests (1).	Yes: on-site and adjacent lands	Incidental observation on-site	Confirmed habitat for endangered or threatened species on-site
Pale-bellied Frost Lichen	<i>Physconia subpallida</i>	END	END	S3	The Pale-bellied Frost Lichen resembles a light dusting of frost on a dark tree trunk. This species is found throughout eastern North America, growing in wooded areas rich in hardwood species, such as White Ash, Hop Hornbeam (Ironwood), Black Walnut, and American Elm. It is also common to find this species growing on fenceposts or boulders within or near these wooded areas. In Ontario, this species has been found in the following counties: Frontenac, Haliburton, Hastings, Peterborough, Lanark and Renfrew (1).	No	Confirmed absent through targeted surveys	No further consideration required

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