Environmental Impact Study - Verona Street, Township of South Frontenac, Frontenac County, Ontario

December 9, 2025

Prepared for:
Township of South Frontenac

Cambium Reference: 16426-002

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1.0 Introduction

Cambium Inc. (Cambium) was retained by Township of South Frontenac to conduct an Environmental Impact Study at two nearby properties known as Verona Street East and Verona Street West, within the Hamlet of Verona, Township of South Frontenac, County of Frontenac, Ontario (Figure 1). The proposed project is an affordable senior living housing development. Based on the proposed development, the entire property will be considered the Site for this report.

The following Environmental Impact Study (EIS; the Study) serves to address potential impacts to natural heritage features identified during the preliminary development review process, as required by the Provincial Planning Statement (PPS) (2024), Conservation Authorities Act (1990), County of Frontenac Official Plan (2023), County of Frontenac Environmental Impact Study Guidelines (2024), Township of South Frontenac Official Plan (current – 2003) (adopted – 2025), and Township of South Frontenac Zoning By-law 2003-75, as amended. The Site contains or is adjacent to (within 120 m of) the following mapped natural heritage and hydrologic features:

- Unevaluated wetlands (on Site and adjacent lands)
- Verona Lake (adjacent lands)
- Vanluven Lake (adjacent lands)
- Woodlands (on Site and adjacent lands)
- Fish Habitat (on Site and adjacent lands)
- Potential Significant Wildlife Habitat (on Site and adjacent lands)
- Potential habitat for Species at Risk (SAR) (on Site and adjacent lands)

The Site is on the border of Ecoregions 5E and 6E (Crins W. J., Gray, Uhlig, & Wester, 2009). The Site is within the Hamlet of Verona settlement area boundary.

The Site is within the jurisdiction of the Quinte Conservation Authority (QCA), and their regulated area encompassing the northern half of the Site. The regulated area is associated

with Vanluven Lake and the associated floodplain. As such, the Study considers regulations on development as imposed by Ontario Regulation 41/24 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 SAR.

This Study has been prepared to meet application submission standards as outlined in the County of Frontenac Environmental Impact Study Guidelines (2024), 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 on the Site. Information has been compiled to characterize the existing form and function of natural heritage features on and adjacent to the Site and provide an evaluation of the significance and sensitivity of those features. Furthermore, an assessment of potential for impacts to these features in relation to the proposed development is provided. 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 Summary of Proposed Development

The Site is located within the Hamlet of Verona (hamlet boundary). The Site is bisected north to south by Verona Street, with the two properties found on the east and west of Verona Street. These properties will hereby be referred to as Verona Street East and Verona Street West. The Site is approximately 10.4 hectares; Verona Street East (1.2 ha), and Verona Street West (9.2 ha). The Site is entirely vacant, consisting of natural wooded areas and wetlands. A series of maintained and unassumed trails are found throughout the Site. Adjacent land uses

consist of residential neighbourhoods, a public elementary school, the Kingston-Pembroke Trail (KP trail), and roadways.

The proposed development is for affordable senior living housing, consisting of two (2) three-story apartment buildings, four (4) blocks of townhouses, as well as a public open space area and parking facilities. In addition, a well, water treatment facility, and sewage system are proposed, with their exact locations yet to be determined.

A Conceptual Site Plan and draft Water and Wastewater Master Plan are provided in Appendix B.

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 Planning Statement (PPS), 2024
- County of Frontenac Official Plan (amended), 2023
- Township of South Frontenac Official Plan (current) 2003, (adopted) 2025
- Township of South Frontenac Zoning By-law 2003-75, as amended, 2025
- *Conservation Authorities Act,* 1990
- *Endangered Species Act* (ESA), 2007
- *Species at Risk Act* (SARA), 2002
- *Fisheries Act,* 2019
- *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 7.0.

2.1 Provincial Planning Statement, 2024

The PPS provides direction on matters of provincial interest related to land use planning and development. Section 4.1 of the PPS (Ministry of Municipal Affairs and Housing, 2024) protects the form and function of nine types of significant natural heritage features, which include:

- significant wetlands in Ecoregions 5E, 6E, and 7E
- significant coastal wetlands
- significant woodlands in Ecoregions 6E and 7E
- significant valleylands in Ecoregions 6E and 7E
- significant wildlife habitat (SWH)

- significant areas of natural and scientific interest (ANSI)
- fish habitat
- habitat of endangered and threatened species
- coastal wetlands in Ecoregions 5E, 6E, and 7E

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 4.2 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 Municipal Official Plans and Zoning By-Law

The land use designations and zoning of the Site are summarized in Table 1.

Table 1 Summary of Municipal Official Plan Designations and Zoning

Source	Designation / Zoning
Official Plan – County of Frontenac	Settlement Area
Official Plan (current and adopted) – Township of South Frontenac	Settlement Area Future Secondary Planning Area (Draft 2024)
Zoning By-law 2003-75 (2025) – Township of South Frontenac	Verona Street East: Urban Residential – First Density Zone (UR1) Verona Street West: Rural Zone (RU)

2.3 Conservation Authorities Act

Ontario's 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). Quinte Conservation Authority regulates these features under Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits under the Conservation Authorities Act.

2.4 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. Habitat for special concern species is afforded protection as significant wildlife habitat (SWH) in the PPS. SAR are discussed throughout this report, as applicable.

It is acknowledged that Bill 5: Protect Ontario by Unleashing Our Economy Act, 2025 received Royal Assent on June 5 ,2025, which allows for amendment to the ESA, 2007, while

developing the Species Conservation Act (SCA). These changes are intended to streamline permit applications and approvals and help projects proceed faster while continuing to provide important protections for species at risk and their habitats.

The subject Study has been prepared within the existing policy framework of the Endangered Species Act, 2007, therefore modifications may be required should the Act be amended and/or repealed before completion of the proposed development.

2.5 Species at Risk Act

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.

Known aquatic SAR populations and associated critical habitats are mapped by Fisheries and Oceans (DFO). Critical habitat for aquatic SAR may include areas used for spawning, rearing young, feeding, overwintering, and migration.

2.6 Fisheries Act

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". Furthermore, any work, undertaking, or activity other than fishing that results in the death of fish is considered an offence.

As a result of amendments to the *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 the death of fish and/or 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 Migratory Birds Convention Act, 1994

The federal *Migratory Birds Convention Act, 1994* (MBCA) prohibits killing, capturing, injuring, taking or disturbing of the listed migratory birds. Including damaging, destroying, removing, or disturbing of nests of all migratory bird species that contain a live birds or viable eggs. In 2022, new Migratory Birds Regulations (MBR) were adopted that afford year-round protection to the nests of 18 migratory species, until the nest is deemed to be abandoned. Nest abandonment must be reported through the Abandoned Nest Registry, administered by Environment and Climate Change Canada (ECCC), if there is a need to damage, disturb, destroy, or remove a nest of a species listed in Schedule 1 of the MBR. The time period to confirm nest abandonment varies by species, and ranges from 12 to 36 months.

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, 2023)
- Natural Heritage Information Center (NHIC) database: species at risk (SAR) occurrence records
- Online Atlas Data:
    - Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2025)
    - Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005)
- Aquatic Species at Risk distribution maps (Fisheries and Oceans Canada, 2025)
- Aquatic Resource Area Summary Data (Government of Ontario, 2025)
- Fish ON-Line (Ministry of Natural Resources and Forestry, 2024)
- County of Frontenac Online Interactive Mapping (County of Frontenac, 2025)
- Quinte Conservation Authority Regulated Areas Map – Online Interactive Mapping Tool, (2025)
- Quinte Conservation Napanee River Upper Lakes Flood Hazard Mapping Report, (2024)
- Natural Heritage Desktop Review Memo: Verona Housing Development (Cambium, 2023)

Mapped natural heritage features present in the general area of the Site are shown on Figure 1. A summary of background review results is provided in Table 2.

Table 2 Background Review Summary

Source	Location Reference	Relevant Records
LIO Geographic Database	Site and 120 m adjacent lands	• Unevaluated wetlands (adjacent lands) • Verona Lake (adjacent lands) • Vanluven Lake (adjacent lands)
NHIC Database	18UQ6527 18UQ6526	• Black Ash (*Fraxinus nigra*) – END • Blanding's Turtle (*Emydoidea blandingii*) – THR • Bobolink (*Dolichonyx oryzivorus*) – THR • Chimney Swift (*Chaetura pelagica*) – THR • Eastern Meadowlark (*Sturnella magna*) – THR • Eastern Milksnake (*Lampropeltis Triangulum*) – SC Federally • Eastern Musk Turtle (*Sternotherus odoratus*) – SC • Eastern Wood-pewee (*Contopus virens*) – SC • Finlayson's Oakworm Moth (*Anisota finlaysoni*) – SC Federally • Golden-winged Warbler (*Vermivora chrysoptera*) – SC • Gray Ratsnake (Frontenac Axis population) (*Pantherophis spiloides pop. 1*) – THR

		• Midland Painted Turtle (*Chrysemys picta marginata*) – SC Federally • Snapping Turtle (*Chelydra serpentina*) – SC • Wood Thrush (*Hylocichla mustelina*) – SC
Ontario Breeding Bird Atlas (OBBA)	18TUQ62	Incorporated into list of species within Appendix C
Ontario Reptile and Amphibian Atlas (ORAA) (ORAA, 2023)	18UQ62	Incorporated into list of species within Appendix C
Aquatic SAR distribution maps	Site and 120 m adjacent lands	None

Note: THR = Threatened species on SARO list; END = Endangered species on SARO list; SC = Special concern species on SARO list. The Species of Conservation Concern Screening provided in Appendix C includes a list of all species within the overlapping OBBA and ORAA squares with potential policy implications.

3.2 Consultation and Agency Correspondence

Regulatory agency consultation may involve input from Fisheries and Oceans Canada (DFO), the Ministry of Natural Resources (MNR), the Ministry of Environment, Conservation, and Parks (MECP), and/or the local Conservation Authority, 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 regulatory authorities was undertaken for this project due to the availability of site-specific data via publicly accessible resources.

3.3 Field Investigations

Ecological investigations were completed on the Site by a team of qualified ecologists 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.

A summary of the field investigations completed on the Site is presented in Table 3. Representative Site photos are included within the Photo Log in Appendix D. Survey stations/areas are shown on Figure 2.

Table 3 Summary of Field Investigations

Date	Time On Site	Atmospheric Conditions	Observer	Activities
2025-04-23	1430-2145	Air Temp:17.9 -21.0ºC Wind: 1 Noise: 1 Sky: 0	A. Alaimo	Site Reconnaissance Rapid Aquatic Habitat Assessment Drainage Feature Mapping Turtle Visual Encounter Survey 1 Snake Visual Encounter Survey 1 Amphibian Breeding Survey 1
2025-04-24	1115-1500	Air Temp: 17.0ºC Wind: 2,3 Noise: 1 Sky: 1,2	A. Alaimo	Preliminary Ecological Land Classification Bat Maternity Roost Survey 1 Raptor Stick Nest Search Butternut Search
2025-05-09	1030-1530	Air Temp: 10.0-14.0ºC Wind: 0,2 Noise: 0,1 Sky: 0	K. Vizza & V. Montes	Bat Maternity Roost Survey 2 Turtle Visual Encounter Survey 2 Snake Visual Encounter Survey 2
2025-05-26	2130-2315	Air Temp: 12.0-12.7ºC Wind: 0 Noise: 0,2 Sky: 0	A. Alaimo	Amphibian Breeding Survey 2
2025-05-28	0815-1900	Air Temp: 18.0-24.0ºC Wind: 1	A. Alaimo	Breeding Bird Survey 1 Ecological Land Classification

Date	Time On Site	Atmospheric Conditions	Observer	Activities
		Noise: 1 Sky: 0		Acoustic Monitor Deploy Snake Visual Encounter Survey 3 Turtle Visual Encounter Survey 3
2025-06-05	1045-1245	Air Temp: 22.0-25.0ºC Wind: 0,1 Noise: 0 Sky: 1,2	K. Vizza	Snake Visual Encounter Survey 4 Turtle Visual Encounter Survey 4
2025-06-11	0550-1730	Air Temp: 15.0-23.0 ºC Wind: 0,2 Noise: 1 Sky: 1	A. Alaimo	Breeding Bird Survey 2 Snake Visual Encounter Survey 5 Turtle Visual Encounter Survey 5 Wetland Boundary Delineation
2025-06-12	1700-1830	Air Temp: 21.0-22.0ºC Wind: 3 Noise: 1 Sky: 1	A. Alaimo	Snake Visual Encounter Survey 6 Acoustic Retrieval
2025-06-24	1700-2300	Air Temp: 26.8-35.8ºC Wind: 1,2 Noise: 1 Sky: 0-1	A. Alaimo	Snake Visual Encounter Survey 7 Ecological Land Classification Wetland Boundary Delineation Amphibian Breeding Survey 3
2025-06-27	0915-1300	Air Temp: 20.0-23.0ºC Wind: 1,3 Noise: 1 Sky: 1	A. Alaimo	Snake Visual Encounter Survey 8 Ecological Land Classification
2025-07-02	1600-1830	Air Temp: 24-26ºC Wind:0 Noise:0 Sky:1	C. Johnson	Snake Visual Encounter Survey 9
2025-07-03	0830-1230	Air Temp: 22.0-25.0ºC Wind: 1,2 Noise: 1 Sky: 0,2,5,8	A. Alaimo	Snake Visual Encounter Survey 10
2025-08-20	1100-1400	Air Temp: 20 ºC Wind: 1 Noise: 0 Sky: 0	I. Burnett	Butternut Health Assessment

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.

3.3.1 Plant Communities and Flora

3.3.1.1 Ecological Land Classification and Vegetation Surveys

Although the Site is located within Ecoregion 5E (Northern Ontario), the vegetation codes for 6E (Southern Ontario) were used based on the Site's proximity to the 5E/6E split, approximately 260 – 460 m. Overall characteristics and vegetation forms are not expected to differ significantly enough within this gap to impact the assessment. Additionally, the general features and geography of the Site lend itself more the characteristics of 6E compared to 5E, which are described in detail below in Section 4.1.

The Ecological Land Classification (ELC) System for Southern Ontario (Lee H. , 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 H. , 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 surveys and soil assessments with a hand auger, where vegetation types could not be classified based on vegetation alone. Where vegetation communities extended off the Site, classification was completed through observation from property boundaries and publicly accessible lands.

Vegetation data reported herein 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 9-10). A description of CC values is provided in Table 4.

Table 4 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.

3.3.1.2 Butternut and Black Ash Surveys and Health Assessment

Butternut (*Juglans cinerea*) is an endangered species protected under the provincial *Endangered Species Act, 2007* (ESA) from being killed, harmed, or removed. The level of protection granted to Butternut trees is determined based on the degree to which an individual tree has been affected by the fungal pathogen known as butternut canker (*Sirococcus clavigignenti-juglandacearum*). Prior to undertaking any activity that may affect the Butternut or the lands within 25 m of a tree, an assessment of tree health must be performed by a Butternut Health Expert (BHE) (i.e., a qualified professional who has the expertise, education, training, and experience necessary to assess the health of butternut trees and to carry out the responsibilities imposed on the expert by Ontario Regulation 830/21). The health assessment divides trees into three health categories based on procedures outlined in the Butternut Assessment Guidelines (Ministry of Environment Conservation and Parks, 2021). For each tree, the BHE must determine: the health category of the tree, whether the tree is a putative hybrid, and whether the tree is believed to be naturally occurring or cultivated. Butternut health categories are defined as follows:

- Category 1: affected by butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of butternut trees in the area in which the tree is located.

- Category 2: not affected by butternut canker or affected by butternut canker but the degree to which it is affected is not as advanced as Category 1 and retaining the tree could support the protection or recovery of butternut trees in the area in which the tree is located.
- Category 3: could be useful in determining how to prevent or resist butternut canker.

Hybrids of Butternut and non-native Walnut trees are different species from Butternut, are not fully native to Ontario, and are not protected under the ESA. To determine if a tree is a putative hybrid, the BHE must use the Key for Field Identification of Butternut Hybrids as detailed in the ministry guidelines. Should the field assessment results be inconclusive, genetic testing may be pursued.

Butternut health evaluations should be carried out during the Butternut growing season (May 15 to August 31); out of season evaluations may be conducted but require the exclusion of certain assessment criteria, as detailed in the Ministry guidelines.

Black Ash was added to the Species at Risk in Ontario List (O. Reg. 230/08) as an endangered species on January 26, 2022; protections were temporarily paused by a Minister's Order, which expired on January 26, 2024. Black Ash is now protected by regulations under the ESA. Black Ash is a tree species that prefers moist climates and soils; it is typically associated with wetlands. While wetland habitats are generally protected from development in Ontario, this species is in decline due to the physically damaging effects of the invasive Emerald Ash Borer (*Agrilus planipennis Farmaire*). Protection of Black Ash applies to specific municipal jurisdictions in Southern and Central Ontario as outlined in Schedule 1 of Ontario Regulation 6/24 but does not apply to the northern extent of Black Ash, which is currently beyond the range of Emerald Ash Borer. O.Reg. 6/24 further exempts protection of younger individual Black Ash trees that are shorter than 1.37 m, smaller than 8 cm diameter at breast height (DBH), or determined to be unhealthy by a qualified professional. Black Ash health evaluations should be carried out during the leaf-on season (June 1 to October 1); out-of-season evaluations may be conducted but require confidence in the condition of the canopy and extent of dieback, as detailed in Ministry guidelines. The health assessment is used to divide trees into one of two categories (healthy and unhealthy) based on procedures outlined

in the Blach Ash Assessment Guidelines (Ministry of the Environment, Conservation and Parks, 2024).

3.3.1.3 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, 2022). Evaluated wetlands that score high enough are deemed Provincially Significant Wetlands (PSW). Evaluated wetlands that do not score high enough to be a PSW are classified as Locally Significant Wetlands (LSW) or non-significant. 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.

Wetlands on the Site were delineated following provincially approved methods outlined in the Ontario Wetland Evaluation System: Southern Manual, 4th Ed. (Ministry of Natural Resources, 2022). 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 (i.e., late May through October). Wetland boundaries were determined using the 50% wetland vegetation rule. In some cases, vegetation-based delineations were corroborated through soils assessment. Soils were sampled using a hand auger and moisture regime was determined based on industry standard guidance (Heck, et al., 2017).

Wetland boundaries on the Site were marked with a hand-held GPS unit in the field. Where wetland communities extend off the Site, classification was done through observation from property boundaries and publicly accessible lands.

To supplement the procedure outlined above, the Site was visited during the early spring to document the extent of surface flooding at that time of year. This information is used to assist with the determination of wetland boundaries during the growing season.

3.3.2 Aquatic Habitat and Fish

3.3.2.1 Surface Water and Drainage Feature Mapping

Surface water features on and adjacent to the Site were reviewed to determine the presence/permanence and direction of flow and assess conveyance. Where feasible, substrate type and cover features of surface water features were also noted. Indicators of surficial drainage, including erosion of soils, gullies, and sediment deposition areas were noted and traced to identify sources of erosion. All watercourse and drainage feature crossings were documented and georeferenced in the field, including bridges, culverts, and bed-level crossings.

3.3.2.2 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. Orthoimagery and topographical mapping 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 consideration for 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.

3.3.3 Wildlife and Wildlife Habitat

3.3.3.1 Breeding Bird Surveys

Two breeding bird surveys were carried out during the peak breeding season between May 24 and July 10, a minimum of seven days apart. Point counts were completed using the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Ontario Breeding Bird Atlas, 2001). Point count stations were established in various habitat types and were combined with incidental observations to determine the presence, variety, abundance, and breeding evidence of species. As outlined in the OBBA protocol, point counts are to be done between dawn and five hours after dawn, when wind speed is low (<19 km/h) and in the absence of rain or thick fog. Surveys conducted outside of this five-hour window remain valid, provided that the protocol adjustment is documented and justifiable. All species observations (visual and auditory) were recorded at predetermined point count stations during a five-minute period. Observations were also documented between point count stations and were tabulated with the nearest station. Each species observed was classified and assigned a code based on the highest level of breeding evidence, as defined by the protocol: Confirmed, Probable, Possible or Observed.

The Natural Heritage Information Center (NHIC) database and Species at Risk in Ontario (SARO) list were reviewed to determine the current provincial status for each bird species.

3.3.3.2 Least Bittern and Marsh Bird Surveys

Specific surveys for Least Bittern (*Ixobrychus exilis*), a Threatened species, were conducted concurrently with general breeding bird surveys to determine the presence/absence of this species. Surveys followed the Marsh Monitoring Program (MMP) for marsh birds survey protocol (Bird Studies Canada, 2008). Surveys are to be conducted in the evening or morning at least 10 days apart. Survey times must remain the same for both visits (i.e., evening or morning). Morning surveys can begin 30 minutes before sunrise and end no later than 1000 hrs. Evening surveys can begin no earlier than four hours before sunset and must be completed by dark. Each survey station is surveyed for 15 minutes under favourable weather conditions (good visibility, warm temperatures (at least 16ºC) with no precipitation and little to no wind. The 15-minute MMP marsh bird survey is sub-divided into three five-minute

components: a passive (silent) observation period, a call playback period, and a second passive observation period.

3.3.3.3 Amphibian Breeding Surveys

The presence of frog and toad breeding habitat was determined using auditory surveys following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008). According to the protocol, three amphibian surveys should be conducted between April and July, at least 15 days apart, in order to span the breeding seasons of all species that may be present in an area. Air temperature is the primary factor in determining survey dates, as different species call when air and water temperatures reach certain levels; therefore, nighttime air temperature should be greater than 5°C for the first survey, greater than 10°C for the second survey and greater than 17°C for the third survey. Other weather conditions are also taken into consideration. Conditions are considered appropriate when wind speed is low (<19 km/h; Beaufort Wind Scale of 3 or lower) and there is light or no precipitation occurring (high humidity is ideal but heavier rain can impact ability to hear and differentiate calls). Sample points are established during the first survey and re-visited during following surveys. At each sample point, calls from all species are aurally surveyed for three minutes and noted to the greatest extent possible, on a 100 m semi-circular area in front of the sampling station using call intensity codes established by the protocol:

- Code 0: No calls heard
- Code 1: Calls can be counted individually (calls do not overlap)
- Code 2: Calls overlap, but numbers of individuals can be estimated
- Code 3: Calls overlap and are continuous (full chorus); therefore, a count estimate is unreliable

3.3.3.4 Turtle Surveys

Blanding's Turtle is a SAR listed as threatened on the SARO list. Blanding's turtles spend the majority of their lifecycle in the aquatic environment, using terrestrial sites for travel between habitat patches and to lay clutches of eggs. These turtles prefer shallow nutrient rich water

with organic sediment and dense vegetation. Blanding's turtles nest in a variety of open habitats with low vegetation cover and high sun exposure such as in forest clearings, meadows, shorelines, beaches, rock outcrops, cornfields, gravel roads, road shoulders, ploughed fields, gardens, powerline rights-of-ways, yards and abandoned railroad beds (Ministry of Natural Resources and Forestry, 2017). The presence of turtle nesting on or adjacent to the Site was assessed using the visual encounter, nesting, and road survey protocols contained in the MNRF protocol for Blanding's Turtle (Ministry of Natural Resources and Forestry, 2015). According to the protocol, visual encounter surveys (VES) should be conducted between 8 am and 5 pm during sunny periods when air temperature is above 5°C and is warmer than water temperature. Nesting surveys should be conducted by first observing suitable nesting habitat (i.e., sandy or gravelly soils) from a distance and then searching the nesting habitat for evidence of digging/trial nests and depredated nests. Road surveys are an effective way to determine if turtles are using a roadway as a migration route between resident and nesting habitat. If conducted during nesting season, road surveys should be done in the evening or morning. Any individuals observed or any signs of nesting such as disturbed soils, tracks, predated nests, etc. are recorded.

3.3.3.5 SAR Snake Surveys

There are a number of SAR snakes listed as endangered or threatened on the SARO list. Visual Encounter Surveys (VES) for snakes were conducted following the MNRF protocol for SAR snakes (Ministry of Natural Resources and Forestry, 2016). The protocol states that VES should be carried out on sunny days when the air temperature is 10-25°C or on overcast days when the air temperature is 15-30°C. In spring, VES should be carried out between 9 am and 5 pm. During July and August when daytime temperatures exceed 25°C, VES should be carried out between 8 am and 12 pm or 5 pm and 8 pm. Ten surveys are required to determine probable absence, with at least five surveys occurring prior to July 1. According to the protocol, surveys should be carried out on days when wind speeds are less than 24 km/h (Beaufort Wind Scale of 4 or lower). Air temperature and basking temperature is recorded during each survey, with basking temperature measured using a laser thermometer targeted to the basking or cover object surface. During each survey, suitable habitat is walked in transects to

document the presence of snakes that may be located throughout the target habitat. During transect searches, features that extend below the frostline (i.e., rock piles, crevices, rock fissures, old foundations, etc.) that may function as hibernacula or refuges are documented and geolocated, if present.

3.3.3.6 Bat Surveys

A snag or cavity tree is defined as a standing live or dead tree, with cracks, crevices, hollows, cavities and/or loose or naturally exfoliating bark appropriate for bat roosting. According to MNRF guidance, high quality or Maternity Roost Colony SWH is defined as woodlands with greater than 10 roost trees per hectare.

Given the size and composition of the forested communities on the Site, transects were walked in each forested ELC Community to document snags. Individual trees that met the criteria were documented in terms of their habitat features, and georeferenced with a hand-held GPS unit.

Bat acoustic monitoring surveys were completed to determine, with reasonable certainty, the bat species present in the immediate area of the Site. Bat species were identified using analysis of sonographic characteristics from recordings of ultrasonic calls emitted by bats for echolocation. Survey methods were developed based on the MNRF survey guidelines outlined in Bat and Bat Habitats: Guidelines for Wind Power Projects (2011) and current guidance provided by MNR for surveying SAR bats in Ontario. Surveys were conducted using broadband bat detectors (Wildlife Acoustics Song Meters) appropriately placed in target habitats. Passive acoustic recorders were programmed to begin recording 30 minutes before sunset continuing for five hours. Surveys were carried out in the month of June for 11 consectutive nights. Data was processed using equipment-specific software to identify bats to species, to the extent possible. Where the software did not have a high degree of certainty, and where the presence or absence of a species needed to be determined based on a very low number of events, manual vetting was performed by a trained ecologist. All calls, including unidentifiable calls, are reported in the survey data. The NHIC database and SARO list were reviewed to determine the current provincial status for all bat species identified.

3.3.3.7 Habitat-Based and Encounter 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 habitat and nesting observations were documented and photographed.

Encounter surveys included track and sign surveys, area searches, and incidental observations, concurrent with other field surveys. Any wildlife (including mammals, reptiles, amphibians, birds, butterflies, native bumble bees and dragonflies) seen and identified were recorded. When encountered, tracks and other signs (e.g., stick or cavity nests, tracks, scats, hair, tree scrapes, etc.) were identified to a species, if possible, and recorded.

3.3.4 Approach to Assessment of Significance and Impact Assessment

An assessment was conducted to determine the significance of natural features as well as significant species observed or determined to have the potential to exist on the Site or on adjacent lands. The assessment was completed by analysing natural environment data collected through the background material described in Section 3.1 and field surveys, using the methods and criteria outlined in the following reference materials:

- Natural Heritage Reference Manual [NHRM; (MNRF, 2010)]
- Significant Wildlife Habitat Technical Guide [SWHTG; (MNRF, 2000)]
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E [SWHCS; (MNRF, 2015)]
- Habitat mapping for provincially endangered and threatened species through application of ESA regulated habitat or General Habitat Descriptions to the Site, where available.

An assessment was then conducted to determine how the proposed project may negatively impact significant natural features or SAR. Preventative, mitigative, and remedial measures

were considered in assessing the net effects of the proposed project on the surrounding ecosystem. Where impacts to significant wildlife habitat were determined to be possible, mitigation was determined using the guidance provided in the Significant Wildlife Habitat Mitigation Support Tool [SWHMiST; (MNRF, 2014)].

4.0 Existing Conditions

Data acquired through the background information review and field investigations is summarized in the following sections.

4.1 Landscape Position and Topography

The Site is situated between 260 and 460 m from the 5E / 6E divide and the general features of the Site lends itself more to the characteristics of 6E compared to 5E; mix geology including exposed bedrock, combination of shallow and deep soils, and a dominance of deciduous forests.

The Ontario Shield Ecozone: Georgian Bay Ecoregion 5E, is located in south-central Ontario, extending southeast from Lake Superior to the central portion of the Ottawa River valley in the east, including Parry Sound, Perth, North Bay, Sudbury, and Sault Ste. Marie. This Ecoregion is characterized by frequently exposed bedrock, shallow soils, and mixed forests representative of the Great Lakes – St. Lawrence Forest Region (Lee H. T., et al., 1998).

The Mixedwood Plains Ecozone: Lake Simcoe Rideau Ecoregion 6E, 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 H. T., et al., 1998).

Additionally, when Sites are in close proximity to the Ecoregion divide, it is not uncommon for a Site to exhibit a combination of characteristics of both Ecoregions or more in favour of one that it is not mapped in. It is also accepted that the ecoregion boundary lines require some refinement. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions (Crins W. J., Gray, Uhlig, & Wester, 2009) notes that revisions to the ecozone and ecoregion boundaries will likely be necessary as new sources of data become available and the ability to interpret the data is

improved. Overall characteristics and vegetation forms are not expected to differ significantly enough within this gap to impact the assessment.

Overall, the Site is fairly complex with a fluctuating topography resulting from large, exposed rock formations and low-lying wetland areas. Topographic relief ranges from 138 metres above sea level (mASL) to 154 mASL. In general, the Site slopes down to the north-northwest area toward Vanluven Lake. Sections in the south and northeast of the Site were characterized by rolling upland features including exposed bedrock and boulders, thin soil layers, and undulating terrain. Comparatively the northwest and central area of the Site exhibited lowland features with deep organic soil layers; situated adjacent to Vanluven Lake where the terrain is nearly level with subtle changes in elevation.

4.2 Surface Water, Hydrology, and Hydrogeology

No permanent watercourses were identified on Site during field investigations.

Two drainage features were identified on each of the two Site parcels; one within Verona Street East and one in Verona Street West. The drainage feature in the east parcel is a dug ditch receiving inputs from multiple roadside culverts and surficial overland flow. This feature travels westward passing under Verona Street through a perched corrugated steel pipe (CSP), discharging into the marsh wetland (Community 4). Water continues to flow westward without a defined channel until it reaches Community 3 in the Verona Street West parcel. A defined channel (possibly anthropogenic) forms in Community 3, continuing to channel water westward into Community 2.

The drainage feature in the Verona Street East parcel is unlikely to provide fish habitat given barriers to fish passage, intermittent presence of water, pockets of isolated stagnant water, and overall poor quality of habitat available. The western drainage feature may provide fish habitat given its connectivity to Vanluven Lake through Community 2, albeit limited to small-bodied warm-water species tolerant of sediment laden waters.

Four seeps and springs were confirmed on Site, all within the Verona Street West property. Three of them are located at the base of exposed rock formations towards the north side of

Community 7, adjacent to Community 5. One is located along the boundary between Communities 3 and 6. These springs were noted to have flowing water during all Site visits.

Vanluven Lake is located approximately 109 m to the north of the Site at the closest point on adjacent lands. Vanluven Lake is a shallow waterbody with a maximum depth reaching approximately 3.7 m, and average depth of 1.7 m.

Verona Lake is located approximately 288 m east of the Site on adjacent lands and is separated by municipal roads and infrastructure with no evidence of surface water connection from the Site. Verona Lake is not discussed further in this report herein.

Field verified drainage features, culverts, and surface water features are shown on Figure 2.

4.3 Current and Historic Land Use

Based on a review of historical imagery from the last two decades, no changes in landform and no development have occurred on the Site (Quinte Conservation Authority, 2025).

4.4 Plant Communities and Species

4.4.1 Ecological Land Classification

The plant 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 E.

Table 5 Plant Communities

No.	ELC Code	Community Description	S -Rank
1	FOD5-8	Fresh Sugar Maple - White Ash Deciduous Forest Type	S5
2	MAS3-1	Cattail Organic Shallow Marsh Type	S5
3	SWT3-1	Alder Organic Thicket Swamp Type	S5
4	MAS3-1	Cattail Organic Shallow Marsh Type	S5
5	SWT3-1	Alder Organic Thicket Swamp Type	S5

6	SWT3-1	Alder Organic Thicket Swamp Type	S5
7	FOD5-4	Dry - Fresh Sugar Maple - Ironwood Deciduous Forest Type	S5
8	FOD4-2	Dry - Fresh White Ash Deciduous Forest Type	S5
9	FOD5-4	Dry - Fresh Sugar Maple - Ironwood Deciduous Forest Type	S5
10	CUP3-1	Red Pine Coniferous Plantation Type	SNA
11	CUP1-3	Black Walnut Deciduous Plantation Type	SNA

No provincially rare plant communities were observed on the Site.

The northeast area of the Site was dominated by Community 1 (FOD5-8) consisting of a Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), and Poplar species (sp). dominated forest. A trail system was documented within this community to be spanning northward toward adjacent lands. A dense understory and ground cover layer was present in Community 1 dominated by herbaceous vegetation, European Buckthorn (*Rhamnus cathartica*) and natural regrowth of tree sp. such as White Ash, and Sugar Maple.

The northwest – central area of the Site was composed of several wetland communities (Communities 2-6). The dominant wetland form was comprised of a Cattail Organic Shallow Marsh Type (Community 2 and 4). These units were described as moderately open in areas to the north and becoming dense with understory vegetation in the southern areas. Dominant species included Broad-leaved Cattail (*Typha latifolia*), Reed Canary Grass (*Phalaris arundinacea*), and variety of Sedge sp. Permanent standing water was noted, ranging from 20-50 cm at the maximum depth, associated with an abundance of floating, and emergent vegetation. Communities 3, 5 and 6 were composed of an Alder Organic Thicket Swamp Type. The understory cover was characterized by a very dense layer of Speckled Alder (*Alnus incana ssp. rugosa*), while the remaining layers were sparsely treed otherwise. Some standing water was also present in these communities in the spring with a depth of approximately 5-10 cm.

Several upland community forms were present in the southernmost area of the Site including Communities 7-9. Community 7 and 9 (FOD5-4) canopy cover was solely dominated by Sugar Maple, with associated sub-canopy growth of Eastern Hop-hornbeam (*Ostrya virginiana*), and White Ash. Communities 7 and 9 displayed undulating characteristics, along with exposed rock formations, and was set on high topography compared to the remainder of the Site.

Community 8 (FOD4-2) was a White Ash dominated forest with White Elm (*Ulmus americana*), and Poplar sp. associates, displaying a much flatter topography. This community also displayed a very dense shrub and ground cover layer dominated by invasive species or species commonly associated with disturbed areas such as European Buckthorn, Prickly Ash (*Zanthoxylum americanum*), Tatarian Honeysuckle (*Lonicera tatarica*), Poison Ivy (*Toxicodendron radicans*), Thicket Creeper (*Parthenocissus vitacea*), Garlic Mustard (*Alliaria petiolata*) and European Swallow Wort (*Vincetoxicum rossicum*). Another trail system was documented in Community 8 spanning a north-east direction.

The vegetation communities on the east side of Verona Street were described as cultural plantation types (Communities 10 and 11). Community 10 was a Red Pine (*Pinus resinosa*) and White Spruce (*Picea glauca*) plantation, and Community 11 was a Black Walnut (*Juglans nigra*) and White Ash plantation. Community 10 was observed to be re-naturalizing with Sugar Maple, White Ash, and White Elm, with groundcover limited to these associates and Poison Ivy. Community 11 was generally open canopy with many trees observed to be in poor condition, the groundcover was highly exposed to the sun, which influenced a dense layer of herbaceous growth.

A comprehensive vegetation list for each community is provided in Appendix E.

4.4.1.1 Floral Inventory

Two endangered species were identified on the Site: Butternut, and Black Ash. A search for Butternut was completed as part of the vegetation survey. Five Butternut trees were identified on the Site; three were in Community 1, and two in Community 9. Locations of Butternut are provided in Figure 2. Details on Butternut health assessment results and mitigation measures are provided further in Section 6.0.

Black Ash were found in the wetland communities 2, 3, 5, and 6, but all were documented as greater than 100 m away from the proposed development, therefore health assessments were not undertaken.

Wetland communities on Site generally displayed a wide variety of vegetation species including an abundance of sedges, herbaceous and aquatic species. Similarly, forested communities 7 and 9 also displayed an abundance of herbaceous and shrub species commonly associated with open Sugar Maple Forests. In contrast, Community 8 shrub and ground cover layers were dominated by exotic species. Communities 10 and 11 were also noted as consisting of exotic species, and with many trees in generally poor health.

4.4.1.2 Soil Characterization

A summary of the soils conditions on the Site is provided in Table 6. Soils assessment stations are illustrated on Figure 2.

Table 6 Summary of Soil Conditions

Station	Community No. and ELC Code	Soil Description	Effective Texture	Moisture Regime
1	5	Sampled to a depth of 100 cm. Silty clay to 16 cm over clay. Mottling observed at 2 cm, and gley observed at 30 cm. Water table encountered at 7 cm.	Silty Clay	6 Very Moist
2	7	Sampled to a depth of 90 cm. Sandy clay loam to 27 cm over silty clay to 77 cm over sandy clay. Mottling observed at 35 cm with no gley observed. Water table encountered at 45 cm.	Silty Clay	5 Moist
3	5	Sampled to a depth of 70 cm. Silty clay loam to 20 cm over heavy clay to 44 cm over clay loam. Mottling observed at 10 cm, and gley observed at 42 cm. Water table encountered at 25 cm.	Silty Clay Loam	6 Very Moist
4	7	Sampled to a depth of 100 cm. Sandy clay loam to 23 cm over silty clay loam to 47 cm over silty clay. Mottling observed at 30 cm, gley was not observed. Water table was not encountered.	Silty Clay Loam	5 Moist
5	7	Sampled to a depth of 20 cm. Sandy loam was the sole layer encountered.	Sandy Loam	0 Dry

		Auger refusal occurred at bedrock encounter.		
6	8	Sampled to a depth of 100 cm. Loamy sand to 18 cm over sandy loam. Mottling observed at 53 cm. No gley observed, the water table was not encountered.	Sandy Loam	4 Moist
7	9	Sampled to a depth of 100 cm. Loamy sand to 23 cm over sandy loam. Mottling observed at 65 cm, no gley was observed. The water table was not encountered.	Sandy Loam	4 Moist
8	10	Sampled to a depth of 100 cm. Sandy loam to 17 cm over silty clay loam to 80 cm over loamy sand. Mottling observed at 40 cm, no gley observed. Water table was not encountered.	Silty Clay Loam	4 Moist
9	4	Sampled to a depth of 100 cm. Organics to 44 cm over clay. Mottling and gley observed at 45 cm. Water table encountered at the surface.	Clay	5 Moist
10	1	Sampled to a depth of 100 cm. Sandy clay loam to 18 cm over clay loam to 50 cm over silty clay loam. Mottling observed at 35 cm, and gley observed at 75 cm. Water table was not encountered.	Clay Loam	5 Moist

4.4.2 Wetlands

Provincial mapping doe does not depict PSWs on or adjacent to the Site and therefore not further discussed within this report.

During field investigations, one contiguous wetland comprised of five individual wetland communities was observed in the north-to-central area of the Site (see Figure 2). A section of the wetland extends from the Site boundary to the northwest to the south shoreline of Vanluven Lake.

As mentioned previously in Section 4.4, wetland communities delineated on Site are composed of Communities 2 through 6, and are shown on Figure 2.

4.5 Wildlife and Wildlife Habitat

The Site is generally naturalized and composed of treed and wetland communities. Wetlands on Site provide potential habitat for breeding amphibians, as well as for turtle basking and overwintering. The forested landscape also offers habitat to local breeding bird populations and potential bat maternity roost colonies. Additionally, the presence of wetlands and exposed bedrock on Site could potentially provide snake hibernacula.

4.5.1 Avifauna

4.5.1.1 Birds

Breeding bird surveys were completed as a part of the current study in accordance with OBBA standards. Bird species and breeding activity observations for habitats on the Site are summarized in Appendix F. Species-specific federal and provincial statuses and s-ranks are also provided. A total of 35 bird species demonstrated possible, probable, or confirmed breeding activity.

Species with possible, probable, or confirmed breeding evidence on the Site included:

- One SAR: Eastern Wood-pewee (*Contopus virens*)
- Four area-sensitive forest bird species: Black-throated Blue Warbler (*Setophaga caerulescens*), Blue-headed Vireo (*Vireo solitarius*), Scarlet Tanager (*Piranga olivacea*), and Yellow-bellied Sapsucker (*Sphyrapicus varius*)
- One marsh breeding bird: Sora (*Porzana carolina*)
- 29 bird species common in Ontario: American Crow (*Corvus brachyrhynchos*), American Goldfinch (*Spinus tristis*), American Redstart (*Setophaga ruticilla*), American Robin (*Turdus migratorius*), Baltimore Oriole (*Icterus galbula*), Black-and-white Warbler (*Mniotilta varia*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), Cedar Waxwing (*Bombycilla cedrorum*), Chestnut-sided Warbler (*Setophaga pensylvanica*), Chipping Sparrow (*Spizella passerina*), Common Grackle (Quiscalus quiscula), Common Yellowthroat (*Geothlypis trichas*), Downy Woodpecker (*Picoides pubescens*), Eastern

Phoebe(*Sayornis phoebe*), Gray Catbird (*Dumetella carolinensis*), Great Crested Flycatcher(*Myiarchus crinitus*), Northern Cardinal (*Cardinalis cardinalis*), Northern Flicker (*Colaptes auratus*), Red-eyed Vireo (*Vireo olivaceus*), Red-winged Blackbird (*Agelaius phoeniceus*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*) Song Sparrow (*Melospiza melodia*), Swamp Sparrow (*Melospiza georgiana*), Warbling Vireo (*Vireo gilvus*), White-breasted Nuthatch (*Sitta carolinensis*), White-throated Sparrow (*Zonotrichia albicollis*), Yellow Warbler (*Setophaga petechia*), and Yellow-throated Vireo (*Vireo flavifrons*).

Species with possible, probable, or confirmed nesting in tree cavities on the Site included:

- Downy Woodpecker
- Yellow-bellied Sapsucker

One of the cavity trees identified on the Site was observed incidentally to have an active Yellow-bellied Sapsucker nest with young.

Eastern Whip-poor-will, a species listed as Special Concern, was incidentally heard during one evening survey. A single call was heard from within the Site and two calls from adjacent lands west of the Site. Eastern Whip-poor-will were not observed during any other visits.

4.5.1.1.1 Marsh Birds

A total of one marsh bird species, a Sora, was identified on the Site in Community 2 with possible breeding evidence (calling). The Sora called in response to a playback of a Sora call during the MMP survey performed concurrently with the first Breeding Bird Survey on May 28, 2025, and was observed calling incidentally during field investigations on May 9, 2025, as well. No Least Bitterns were observed on the Site or adjacent lands during field investigations.

Mitigation measures and best practises for the protection of birds are addressed in Section 6.2.

4.5.2 Herpetofauna

4.5.2.1 Frogs and Toads

Amphibian breeding surveys were completed at six survey stations (see Figure 2). A total of five species were identified on and adjacent to the Site, as detailed in Table 7. Of these, three species exhibited Level 3 calling: Spring Peeper (*Pseudacris crucifer*), Gray Treefrog (*Dryophytes versicolor*), and Green Frog (*Lithobates clamitans*). The call codes listed in Table 7 are the maximum call levels documented for each species during the three survey events.

Table 7 Summary of Amphibian Survey Results

Sample Point	Survey Direction	Survey Date	Species	Maximum Call Intensity	# of Individuals	Inside or Outside 100 m Sample Plot
1	N	April 23	Spring Peeper Northern Leopard Frog	3 1	>20 10	Outside Outside
		May 26	Spring Peeper Gray Treefrog	1 3	5 >20	Outside Both
		June 24	None	-	-	-
2	SW	April 23	Spring Peeper Wood Frog Northern Leopard Frog	3 1 1	>20 2 15	Both Inside Both
		May 26	Spring Peeper Gray Treefrog Green Frog	1 3 1	2 >20 2	Inside Both Inside
		June 24	Gray Tree frog Green Frog	1 3	1 >20	Inside Both
3	NW	April 23	Spring Peeper Northern Leopard Frog	3 2	>20 20	Both Both
		May 26	Spring Peeper Gray Treefrog Green Frog	1 3 1	5 >20 2	Inside Both Inside
		June 24	Green Frog	3	>20	Both

Sample Point	Survey Direction	Survey Date	Species	Maximum Call Intensity	# of Individuals	Inside or Outside 100 m Sample Plot
			Gray Treefrog	1	1	Inside
4	NE	April 23	Spring Peeper	3	>20	Both
		May 26	Spring Peeper Gray Treefrog	1 3	5 >20	Inside Outside
		June 24	None	-	-	-
5	E	April 23	None	-	-	-
		May 26	None	-	-	-
		June 24	None	-	-	-
6	W	April 23	None	-	-	-
		May 26	None	-	-	-
		June 24	None	-	-	-

Notes: "-" indicates no calls heard

4.5.2.2 Turtles

Turtle visual encounter surveys (VES) were completed on Site over five events. Field transects were walked throughout the entirety of the Site, including the roadways and trails with the Site boundaries. A total of two species were identified on or adjacent to the Site; Midland Painted Turtle and Snapping Turtle. Midland Painted Turtle are federally listed as Special Concern, while Snapping Turtle are provincially listed as Special Concern. Highest counts during a single survey of both species were five Midland Painted Turtle and two Snapping Turtle. These two species were observed basking in the south section of Community 2 (Cattail Marsh) and noted as adults on all occurrences. No other SAR turtles were observed on Site or adjacent lands.

4.5.2.3 Snakes

A total of three species were identified on the Site; Common Garter Snake (*Thamnophis sirtalis sirtalis*), Northern Water Snake (*Nerodia sipedon sipedon*), and Eastern Milksnake. Eastern Milksnake are federally listed as Special Concern. The other two species are not listed and are commonly found across most of the province.

The majority of the snake observations were Eastern Garter Snake, with at least eight individuals being observed at a single location. Two Northern Water Snakes were also observed. Eastern Milksnake was observed on a single occasion.

Northern Water Snakes were found near the shores of Community 2 (Cattail Marsh). The majority of the Eastern Garter Snakes and a single occurrence of Eastern Milksnake were found basking in a specific area of an exposed berm/edge habitat with high sun exposure near amphibian breeding station 1, as shown on Figure 2. Snake observations occurred mostly during mid-summer, outside of the spring emergence.

4.5.3 Mammals

4.5.3.1 Bats

4.5.3.1.1 Bat Roost Habitat

Given the composition of the forested communities on the Site, transects were walked in each forested ELC Community to document snags for the bat maternity roost survey. Individual trees that met the criteria were documented in terms of their habitat features, and georeferenced with a hand-held GPS unit. The number of potential bat maternity roost trees identified in each community and then divided by the total of the community. Candidate roost trees observed on Site are summarized in Table 8.

Table 8 Treed Bat Roost Habitat Survey Results

Station ID	Tree ID	Species	DBH[1] (cm)	Tree Height (m)	Decay Code[2]
Transects	1	Bitternut Hickory	32	>20	2/5
	2	Black Cherry	37	>20	3
	3	Black Cherry	29	5	5
	4	Black Cherry	24	13	3
	5	Paper Birch	40	15	3
	6	Paper Birch	34	10	5
	7	Paper Birch	34	10	5

Station ID	Tree ID	Species	DBH[1] (cm)	Tree Height (m)	Decay Code[2]
	8	Red Oak	45	>20	3
	9	Paper Birch	60	>20	2
	10	Basswood	N/A[3]	13	3
	11	American Beech	61	15	4
	12	American Beech	45	10	4
	13	Basswood	N/A[3]	14	4
	15	White Oak	82	11	3
	16	White Oak	83	8	3

Notes: 1. DBH: diameter at breast height

2. Decay Code: 1 – healthy, live tree; 2 – declining live tree, part of canopy lost; 3 – very recently dead, no canopy, bark intact; 4 – recently dead, bark peeling, only large branches intact; 5 – older dead tree, 90% of bark lost, few branch stubs, broken top; 6 – very old dead tree, advanced decay, no branches, parts of the stem have rotted away.

3. Trees with DBH listed as N/A were not safely accessible due to steep slopes.

A total of 16 snag trees were observed on Site. Nine were identified towards the north of the Site in Community 1 (FOD5-8). The remaining 7 were located in Communities 7 and 9 (FOD5-4). Based on field investigations, none of the forested communities transected reached the desired threshold of 10 snags per hectare required for candidate bat maternity roost habitat. Community 1 had a density of 4.1 snags per hectare, while Communities 7 and 9 combined for a density of 3.04 snags per hectare.

4.5.3.1.2 Bat Foraging and Movement Activity

Passive acoustic monitoring was conducted between May 28, 2025, and June 11, 2025, to ensure that the monitors were out for at least 11 consecutive nights. Guidelines provided by the MECP recommend establishing four stations per hectare of suitable habitat, although there is an acknowledgement that this approach may be modified based on Site conditions and size. Cambium placed five acoustic monitors throughout the forested and wetland areas on the Site. See Figure 2 for Acoustic Monitor Locations.

Based on the results, a total of eight bat species were identified on the Site over the course of the monitoring period. One out of the eight species identified is relatively common in Ontario:

Big Brown Bat (*Eptesicus fuscus*). The remaining seven species are all classified as endangered under the ESA: Little Brown Myotis (*Myotis lucifugus*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Eastern Small-footed Myotis *(Myotis leibii*), Northern Myotis (*Myotis septentrionalis*), Silver-haired Bat (*Lasionycteris noctivagans*) and Tri-colored Bat (*Perimyotis subflavus*). The most dominant species in the area was Big Brown Bat followed by Silver-haired Bat, and Hoary Bat.

A summary of the 3849 species-linked events documented through the Study is provided in Table 9. Of these events, 1978 (51%) were identified as Big Brown Bat, 1123 (29%) as Silver-haired Bat, 578 (15%) as Hoary Bat, 69 (2%) as Tri-colored Bat, and 56 (1.6%) as Eastern Red Bat. The remaining three species, Little Brown Bat (36 events), Northern Myotis (8 events) and Eastern Small-footed Myotis (1 event) represented only approximately 1% of all species-linked event combined.

Table 9 Bat Acoustic Monitoring Results

Station	Big Brown Bat	Eastern Red Bat	Eastern Small-footed Myotis	Hoary Bat	Little Brown Myotis	Northern Myotis	Silver-haired Bat	Tri-colored Bat	Passes not identified to species
AM1	605	18	0	234	4	2	476	16	486
AM2	908	10	0	140	4	1	305	27	479
AM3	23	0	1	62	0	0	66	1	49
AM4	398	28	0	81	28	5	154	25	209
AM5	44	0	0	61	0	0	122	0	100
Total	**1978**	**56**	**1**	**578**	**36**	**8**	**1123**	**69**	**3849**
Total	**1978**	**56**	**1**	**578**	**28**	**7**	**1123**	**69**	
Total	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	
Total	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	

p<0.05; High probability of species being present
0.05<p<0.1; Medium probability of species being present
p>0.1; Low probability of species being present (likely a false positive)

It is important to recognize that the number of events recorded for each species does not indicate the number of individual bats. A single individual could pass by a given acoustic monitoring device multiple times in one evening, resulting in numerous events.

4.5.3.1.3 Detection of Species at Risk Bats

Results suggest that there is a high probability that Big Brown Bat was present at monitoring stations AM1 - 5 during the survey period. These stations had a p-value of <0.05, indicating a high probability of identification and therefore high likelihood of presence. There were 908 events at station AM2 indicating that this species is more active around this station, but as noted above, the number of events does not necessarily correspond to an increase in individuals.

A total of 1123 events were recorded across all five monitoring stations associated with Silver-haired Bat. All acoustic monitoring stations had a p-value of <0.05, indicating a high probability of identification and therefore high likelihood of presence at all stations.

A total of 578 events were recorded across all five monitoring stations associated Hoary Bat; All stations had a p-value of <0.05 indicating a high probability of species detection and accuracy.

A total of 69 events were recorded across stations AM1 - 4 for Tri-colored Bat. These stations had a p-value of <0.05, indicating a high probability of identification and therefore high likelihood of presence at the station. No events were recorded for this species at station AM5.

A total of 56 events recorded were associated with Eastern Red Bat. These events were recorded at stations AM1-2 and AM4. All three stations had p-values <0.05 indicating a high probability of species detection and accuracy.

Little Brown Myotis was detected at stations AM1-2 and AM4. Station AM4 had 28 recorded events with a p-value of <0.05 indicate a high probability of species presence. However, a p-value between 0.05 and 0.1 for the 4 events recorded at station AM2 indicate a moderate probability of this species being detected. Station AM1 had four events recorded as well, but with a p-value of >0.1 suggesting Little Brown Myotis was not likely detected at this station. Manual vetting determined that this species was present at station AM2, but that species-level results could not reliably be assigned for Little Brown Bat at station AM1.

Eight events were recorded for Northern Myotis at AM1-2 and AM4. AM1 and AM4 had a p-value of <0.05, indicating a high probability of species presence. However, station AM2 had a

p-value >0.1, suggesting that Northern Myotis was likely not detected at this station. Manual vetting of the data determined that species-level results could not reliably be assigned for Northern Myotis at Station AM2.

Lastly, a single event was recorded for Eastern Small-footed Myotis at station AM3. Although only one event was attributed to this species, station AM3 had a p-value of <0.05 indicating a high probability of species detection and accuracy, and manual vetting confirmed that the bat recorded is highly likely an Eastern Small-footed Myotis.

Further analysis of habitat and potential impacts to endangered species is discussed in Section 5.3.

5.0 Assessment of Significance and Impact Assessment

This section assesses the significance of natural features and functions (as outlined in Section 3.3.4) observed on the Site or on adjacent lands, as well as the potential impacts to those features that may result from the proposed project, in consideration of the recommended mitigation measures.

5.1 Wetlands

A single contiguous wetland was identified on Site during the field investigations, consisting of marsh and thicket swamp types, and are represented by Communities 2-6. These communities are located towards the north-to-centre area of the Site and are exclusively located on the Verona Street West property. No wetlands were identified on the Verona Street East property. All wetlands are illustrated on Figure 2.

Wetland boundaries were determined using the 50% wetland vegetation rule, with delineations being corroborated through soils assessment. A detailed list of vegetation species is provided in Appendix E, and results of the soil sampling is provided in Section 4.4.1.2.

Separation distances between the Site and the wetlands ranges from approximately 17 m from the East property development, and approximately 50 m from the West property development.

Though proximal to the wetlands, the East property development is not anticipated to result in direct negative impacts to the wetlands. Any potential encroachment will be buffered by Verona Street and roadside swale, providing a level of separation from between the wetland and East property. The final development is anticipated to increase the hydrologic input into the wetlands as a result of increased hardened surfaces resulting in increase overland flow.

Additional review should be undertaken following completion of the stormwater management plan, with consideration of grading limits, sewage and water treatment schematics.

Based on the 50 m distance between the wetlands and the Verona Street West property development, as well as the naturally vegetated areas buffering them, no direct impacts to wetland features are anticipated from the development on the Verona Street West property.

Potential indirect impacts are limited to only during construction activities and may include minor increases in sediment loading. Impacts are naturally negated when considering the complex topography preventing surface water from readily entering the wetlands without first moving through dense vegetated and undulating areas.

No negative impacts to the form or function of the wetlands are anticipated in relation to the proposed development provided that the mitigation measures outlined in Section 6.0 are adhered to.

5.2 Significant Woodlands

5.2.1 Evaluation of NHRM Criteria

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 10. To be considered significant, a woodland must meet the minimum standard for any one of the criteria listed in Table 10 *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 more than 60% of the Township of South Frontenac is comprised of woodland cover based on the Frontenac County Online Mapping (County of Frontenac, 2025); the column in Table 10 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 10 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**	N/A
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**	No
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**	No

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

Woodlands on Site cover an area of approximately 7.9 ha. Based on size alone, the woodlands on Site do not meet the minimum size requirements of 10 – 20 ha contingent upon the percent cover of woodlands within the jurisdiction. As such, the woodlands on Site do not meet the criteria for woodland size, ecological functions, uncommon characteristics, or economic and social functions, and are thus not considered significant, in accordance with the guidelines outlined in the NHRM.

Overall impacts to the ecological aspects of the woodlands are generally anticipated to be minimal when considering the current state of the woodlands and the areas of the proposed development. Woodlands on the Eastern property are represented by Cultural Plantation Communities 10 and 11. As previously described, these two communities were noted as consisting of exotic species, and with many trees in generally poor health. Development on the Western property is proposed within Community 8, adjacent to Verona Street, which is similar to Communities 10 and 11 in that it too also consists of exotic species. Additionally, most of Community 8 within the proposed development area was noted as being historically disturbed, with a dense shrub layer of European Buckthorn in many places. Compared to other mature woodland communities on Site, Communities 8, 10, and 11 are unlikely to provide the same level of ecological integrity or habitat features.

Furthermore, woodlands on Site are located within the settlement boundary of Verona, and are not categorized as ‘significant’ or part of a local natural heritage system by the Township or the County.

As such, impacts to the overall form and function of woodlands on Site are anticipated to be negligible. Mitigation measures to minimize impacts to woodlands as they relate to the presence of wildlife are still provided below in Section 6.0.

5.3 Significant Wildlife Habitat

The NHRM includes high level guidance for identifying SWH, which is further refined in the Significant Wildlife Habitat Technical Guide (SWHTG) and the Significant Wildlife Habitat Criteria Schedules (SWHCS) (MNRF, 2000; MNRF, 2015a). These documents are the basis for identifying areas and features that are considered SWH by the province, and were used in this study to determine SWH at the Site and on adjacent lands.

There are four general categories of significant wildlife habitat: seasonal concentration areas, rare vegetation communities or specialized habitats for wildlife, species of conservation concern, and animal movement corridors. Each category includes several different types of SWH.

The table provided in Appendix G outlines all the types of SWH that are to be considered in ecoregion 6E according to the SWHCS, and includes an assessment of whether or not the criteria for ‘candidate’ SWH is present at the Site for each type (i.e., presence/absence of listed ELC ecosite codes and/or habitat criteria). Where ‘candidate’ SWH is present at the Site, the table goes on to compare the habitats and results of field surveys at the Site to the defining criteria as listed in the SWHCS to determine presence/absence of ‘confirmed’ SWH. Where ‘confirmed’ SWH is identified through the analysis presented in Appendix G, those types of SWH are discussed below in the context of the proposed development. Where presence of ‘confirmed’ SWH can not be ruled out, a conservative approach has been implemented by identifying ‘candidate’ SWH.

5.3.1 Seasonal Concentration Areas

Seasonal concentration areas are areas where wildlife occur in aggregations at certain times of year. Examples include concentrations of wildlife during migration, hibernation, wintering areas or specialized breeding areas for colonial species.

The SWHCS for ecoregion 6E identifies the following types of seasonal concentrations of animals that may be considered significant wildlife habitat:

- Waterfowl stopover and staging areas (aquatic and/or terrestrial)
- Shorebird migratory stopover areas
- Raptor wintering areas
- Bat hibernacula
- Bat maternity roost colonies
- Turtle wintering areas
- Reptile hibernaculum
- Colonially nesting bird breeding habitat (bank / cliff)
- Colonially nesting bird breeding habitat (tree / shrub)

- Colonially nesting bird breeding habitat (ground)
- Migratory butterfly stopover areas
- Landbird migratory stopover areas
- Deer yarding and winter congregation areas

The following text provides a discussion of the ‘candidate’ or ‘confirmed’ types of seasonal concentration area SWH from the above list that have been identified at the Site or on adjacent lands based on the analysis presented in Appendix G.

5.3.1.1 Bat Maternity Colonies

Bat maternity colonies can be found in tree cavities and vegetation located within all deciduous or mixed forests and swamps. Results from the acoustic monitoring confirmed the presence of both Big Brown Bat and Silver-haired Bat as the two dominant bat species, the two indicator species for this SWH type While the acoustic monitors cannot confirm the number of individual bats, they did record 1978 events for Big Brown Bat and 1123 events for Silver-haired Bat. These values suggest that there are greater than 10 Big Brown Bats and greater than 5 Silver-haired Bats on Site, thus meeting the defining criteria for *Confirmed* Bat Maternity Colony SWH on Site. Based on the criteria schedules, the area of habitat includes the entire woodland or ELC ecosite containing the maternity colonies. These bat species use a variety of habitats including cavity trees and loose bark. Open areas of the Site may be used as foraging habitat.

Vegetation clearing required for the development has the potential to result in a direct loss of roosting trees, maternity trees and foraging areas. Indirect impacts to SAR bats are primarily associated with minor loss of foraging habitat, encroachment, and increased disturbances from human presence and interactions.

Overall impacts to collective SAR bat habitat are anticipated to be minimal given the abundance of suitable habitat in the immediate vicinity, and that minor loss of habitat is non-limiting for bat species. Additionally, the required vegetation removal to accommodate the project is relatively minimal and is not anticipated to have serious implications on the function of SAR Bat habitat in the area.

Mitigation measures for the protection of *confirmed* Bat Maternity Colony SWH are provided below in Section 6.0.

5.3.1.2 Turtle Wintering Area

Turtle wintering area was confirmed for Midland Painted Turtle and Snapping Turtle. Observations during targeted surveys identified five Midland Painted Turtles and two Snapping Turtles, limited to the cattail marsh (Community 2). As such, the entirety of Community 2 is considered turtle overwintering SWH.

The closest proximity between the proposed development area and Community 2 is approximately 130 m. Based on the distances between the wetland and the development area, as well as the naturally vegetated areas buffering them, it is anticipated that direct impacts to wetlands will be limited. Additional review should be undertaken following completion of the stormwater management plan, with consideration of grading limits, sewage and water treatment schematics.

Potential indirect impacts are limited to only during construction activities and may include minor increases in sediment loading. Impacts are naturally negated when considering the complex topography, preventing surface water from readily entering the wetlands without first moving through dense vegetated and undulating areas.

Mitigation measures for the protection of *confirmed* Turtle Wintering Area SWH are provided below in Section 6.0.

5.3.1.3 Reptile Hibernaculum

Reptile hibernacula sites were not confirmed on Site through targeted surveys. However, the cryptic nature of egress areas and the seasonal variation of snake emergence makes determining snake hibernacula rather difficult. In lieu of identifying confirmed hibernacula sites, three snake species were identified during targeted surveys: Common Garter Snake, Northern Water Snake, and Eastern Milksnake.

Defining criteria includes:

- a hibernaculum used by a minimum of five individuals of a single snake species or individuals of two or more snake species, or;
- congregations of a minimum five individuals of a single snake species or individuals of two or more snake species near a potential hibernaculum, or;
- the presence of a Special Concern species.

Snake observations occurred mostly during mid-summer, outside of the spring emergence. All observations were made in the northern half of the Site in relative proximity to each other, from approximately the southernmost wetland boundary and northwards. The presence of three criteria species proximal to each other at the very least suggests that a hibernacula site is nearby.

Three Eastern Garter Snakes were identified congregating together in the middle of Community 1, near the wetland boundary of Community 2 during the key spring emergence period. While this does not meet defining criteria, it suggests that a hibernacula may be in the general area.

Most observations of Eastern Garter Snake occurred along an exposed berm/embankment adjacent to Verona Street near Amphibian Survey Station 1. Observations occurred mostly during mid-summer, with up to eight individuals being observed basking at a single time. Additionally, the single observation of Eastern Milksnake occurred at the same location during the same time period. This does not suggest that the location is serving as a hibernacula, but lends itself to suggest that there is a sufficient number of Eastern Garter Snakes and Special Concern species to qualify the Site as having *candidate* hibernacula.

No snake observations occurred south of the wetland boundaries or within the proposed development areas.

For snakes, hibernation takes place in sites located below the frost lines in burrows, rock crevices, rock plies, slopes, and old stone fences. Areas of broken and fissured rock are particularly important since they provide access to subterranean sites below the frost line (Ministry of Natural Resources and Forestry, 2015). Potential suitable rock formations were

identified on Site in Communities 7 and 9. The habitat criteria schedules consider the feature plus a 30 m radius area as the SWH.

The proposed development is not expected to directly encroach into any of the identified areas of snake observations; no development is to occur north of the wetlands in Community 1 and the development on the Eastern property comes within 17 m of the congregation area buffered by Verona Street. A minor encroachment of approximately 5 m into the 30 m radius is anticipated based on the current design plans, as the closest rock formation to the proposed development is approximately 25 m (Community 7).

As the proposed development does not directly overlap with *candidate* hibernacula features or areas of snake observations, impacts are anticipated to be indirect in nature and mostly associated with immediate surrounding habitats used for spring emergence, breeding, and dispersion into their summer habitats, as well as for the late-summer staging process prior to hibernation.

Potential indirect impacts may include increased mortalities during construction, general habitat disturbances resulting in changes to thermal regimes, habitat fragmentation, disruption to forest habitat, increase human presence, increased human and wildlife interaction and disturbances, and increased noise levels.

Mitigation measures for the protection of *candidate* Reptile Hibernacula SWH are provided below in Section 6.0.

5.3.2 Rare Vegetation Communities

Rare vegetation communities are those that are considered rare in the province (communities assigned an SRANK of S1 to S3 (extremely rare to rare-uncommon) by the NHIC) as well as vegetation communities that may be rare in a planning area. Such habitats are considered more likely to support rare species of plants or wildlife. Rare vegetation communities to be considered in ecoregion 6E are:

- Cliffs and talus slopes
- Sand barren
- Alvar
- Savannah
- Tallgrass prairie
- Other communities considered provincially rare
- Old growth forests

No types of rare vegetation community SWH from the above list have been identified at the Site based on the analysis presented in Appendix G.

5.3.3 Specialized Habitats for Wildlife

Specialized habitats are those habitats that support wildlife during a critical part of the life processes, primarily during breeding, but also includes specific features or micro-habitats, such as seeps. Specialized habitats that are to be considered in ecoregion 6E are:

- Waterfowl nesting areas
- Bald eagle (*Haliaeetus leucocephalus*) and Osprey (*Pandion haliaetus*) nesting, foraging and perching habitat
- Woodland raptor nesting habitat
- Turtle nesting areas
- Seeps and springs
- Amphibian breeding habitat (woodland / wetland)
- Woodland area sensitive bird breeding habitat

The following text provides a discussion of the ‘candidate’ or ‘confirmed’ types of specialized habitat for wildlife SWH from the above list that have been identified at the Site or on adjacent lands based on the analysis presented in Appendix G.

5.3.3.1 Woodland Raptor Nesting Habitat

Evidence of potential woodland raptor nesting SWH includes the observations of Barred Owls, a single sticknest and a single observation of an unidentified raptor species. Barred Owls were heard calling throughout the entire Site during most site visits, and directly observed on occasion. No Barred Owl nest or breeding activity was directly identified. An unidentified raptor species was observed on a single occasion early in the season near the general area of a sticknest within Community 8. No other raptor species were observed during any other site visit. The singular sticknest was characteristic of a Broad-winged Hawk or possibly American Crow. No activity was observed in or around the sticknest during any of the Site visits. The nest was deemed to be inactive during 2025 field season.

Although the Site does not meet minimum size requirements of >10ha of interior woodland habitat to be considered *candidate* SWH, the collective of all observations suggests that the Site may provide suitable habitat to support Woodland Raptor Nesting Habitat.

Potential impacts to *candidate* woodland raptor nesting SWH may include direct loss of a sticknest to permit clearing, nest abandonment, increased noise and human disturbances, loss of foraging habitat, and habitat encroachment.

Mitigation measures for the protection of *candidate* Woodland Raptor Nesting SWH are provided below in Section 6.0.

5.3.3.2 Turtle Nesting Areas

A total of five Midland Painted Turtles and two Snapping Turtles were observed basking within Community 2. All turtle observations were aged to be adults. While nesting activity was not directly observed, the presence of the minimum amount of two turtle species suggests that turtles are actively nesting and reproducing within the general area.

Exposed mineral soils were identified in small patches within Community 2, in the same general area as the direct turtle observations. Exposed mineral soils were not found within other communities on Site.

The closest proximity between the proposed development area and Community 2 is approximately 130 m. Based on the distances between the wetland and the development area, as well as the naturally vegetated areas buffering them, and that no alterations to the wetlands are expected as part of the proposed development, no direct impacts to wetland features is anticipated.

Potential indirect impacts are limited to only during construction activities and may include minor increases in sediment loading. Impacts are naturally negated when considering the complex topography preventing surface water from readily entering the wetlands without first moving through dense vegetated and undulating areas.

Mitigation measures for the protection of *candidate* Turtle Nesting SWH are provided below in Section 6.0.

5.3.3.3 Seeps and Springs

Four seeps were identified on Site; three of them towards the north side of Community 7, adjacent to Community 5, and one along the boundary of Communities 3 and 6. All seeps were noted as being at the base of slopes or at the base of exposed bedrock formations, and were continually flowing during all Site visits.

The closest proximity between the proposed development area and the seeps is approximately 60 m. Based on the distances between the seeps and the development area, as well as the naturally vegetated areas buffering them, and that no alterations to the seeps or associated rock formations are expected as part of the proposed development, no direct impacts to seep features are anticipated.

Mitigation measures for the protection of *confirmed* Seeps and Springs SWH are provided below in Section 6.0.

5.3.3.4 Amphibian Breeding Habitat (Woodland)

Amphibian Breeding Habitat (Woodland) was confirmed based on a Call Code 3 for both Spring Peeper and Gray Tree Frog. The aquatic habitat is considered to be wetland

Communities 2, 3, and 5, with the upland forested components being Communities 1, 7, and 8. SWH is considered to be the wetland area plus a 230m radius of woodland area.

As the nearest point of the proposed development is approximately 50 m from the nearest wetland boundary, direct impacts to wetlands associated with woodland amphibian breeding SWH are not anticipated. Based on the distances between the wetland and the development area, as well as the naturally vegetated areas buffering them, no direct impacts to wetland features are anticipated.

The proposed development will require some vegetation clearing of the forested communities to permit construction activities. Given the size constraints and shape of the site, encroachment into the 230m upland radius is inevitable. However, this vegetation loss will only directly impact portions of Community 7 and 8. No encroachment into Community 1 will be required. Any loss is anticipated to minor considering the abundance of other suitable habitat in the immediate area.

Any minor loss is not anticipated to negatively impact the overall form and function of the upland component of the amphibian breeding habitat. Additionally, it is expected that the travel corridors connecting wetlands to the woodlands will not be impacted or directly encroached upon.

Mitigation measures for the protection of confirmed Amphibian Breeding Habitat (Woodland) SWH are provided below in Section 6.0.

5.3.3.5 Amphibian Breeding Habitat (Wetland)

Amphibian Breeding Habitat (Wetland) was confirmed based on Call Code 3 for Gray Tree Frog, Green Frog and Northern Leopard Frog during targeted surveys. Breeding Bullfrogs (*Lithobates catesbeianus*) were incidentally observed outside of targeted amphibian surveys. The aquatic habitat is considered to be wetland Communities 2, 3, and 4. The ELC ecosite wetland area and the shoreline are the SWH.

The proposed development comes within 20 m of the wetlands from the Eastern property, and 70 m from the Western property. Encroachment from the Eastern property development is not anticipated to negatively impact the form or function of the wetlands, as the two are buffered by

Verona Road and associated roadside swales. Development on the Eastern property may lead to increased hydrologic input from surficial runoff due to hardened surfaces, but overall is considered negligible. Based on the distances between the wetland and the development area on the Western property, as well as the naturally vegetated areas buffering them, no direct impacts to wetland features are anticipated.

Mitigation measures for the protection of *confirmed* Amphibian Breeding Habitat (Wetland) SWH are provided below in Section 6.0.

5.3.4 Habitat for Species of Conservation Concern

Habitat for species of conservation concern (SCC) includes certain habitats for groups of species that are declining provincially, as well as individual species that are considered rare. The types of habitats for SCC to be considered in ecoregion 6E are:

- Marsh bird breeding habitat
- Open country bird breeding habitat
- Shrub / early successional bird breeding habitat
- Terrestrial crayfish
- Special concern or rare wildlife species, including:
    - Species that are ranked S1-S3 by the NHIC and/or are provincially tracked
    - Species with populations that are significantly declining or have a high percentage of their global population in Ontario
    - Species listed as special concern under the ESA
    - Species listed as threatened or endangered under SARA only
    - Regionally or locally rare species, where lists are available

The following text provides a discussion of the ‘candidate’ or ‘confirmed’ types of habitat for species of conservation concern SWH from the above list that have been identified at the Site or on adjacent lands based on the analysis presented in Appendix G.

Five Special Concern or Rare Wildlife Species were *confirmed* on Site: Eastern Wood-pewee, Eastern Whip-poor-will, Eastern Milksnake, Midland Painted Turtle, and Snapping Turtle. Eastern Wood-pewee was regularly heard during most field visits and heard calling throughout the entire Site as well as adjacent lands. Eastern Whip-poor-will was heard during one evening survey, with a single call from within the Site and two calls from adjacent lands. Eastern Milksnake was observed on a single occasion in the area of snake congregation adjacent to Verona Road. Midland Painted Turtle and Snapping Turtle were observed on multiple occasions, limited to wetland Community 2.

Impacts to Special Concern or Rare Wildlife Species are mostly limited to woodland species and are associated with the eventual loss of woodland habitat. However, given the mobile nature of these species, abundance of available habitat nearby, and overall minimal loss of woodland habitat, overall impacts are anticipated to be negligible. Impacts to SAR turtle species are not anticipated given the distances separating the wetlands from development areas and that no development is to occur within the wetlands.

Portions of the Site will continue to provide suitable habitat for all of these species, and extensive similar or better habitats are present within the local landscape.

Mitigation measures for the protection of *confirmed* Special Concern and Rare Wildlife Species are provided below in Section 6.0.

5.3.5 Animal Movement Corridors

Animal movement corridors are naturally vegetated parts of the landscape used by animals to move from one habitat to another, typically in response to different seasonal habitat requirements. The SWHCS indicates that movement corridors are to be identified only where certain types of SWH have been identified according to the SWHCS, including:

- Amphibian movement corridors: to be identified when significant amphibian breeding habitat (wetland) is present.
- Deer movement corridors: to be identified when deer wintering habitat is present.

Wetland amphibian breeding habitat was confirmed within wetland Communities 2, 3, 4, 5, and 6. As such, SWH corridors are identified in association with the wetland communities. Corridors are considered to be a least 15 m of vegetation on both sides of the feature. Wetlands and adjacent forested communities on Site provide an undisturbed corridor habitat to north of the Site. The breeding habitat and contiguous forested habitat will not be disturbed as part of the proposed development.

No deer wintering habitat is mapped by MNR at the Site or in 120 m adjacent lands, and therefore no SWH deer movement corridors are to be identified.

Mitigation measures for the protection of *confirmed* amphibian movement corridors are provided below in Section 6.0.

5.4 Significant Areas of Natural and Scientific Interest

Areas of Natural and Scientific Interest (ANSI) are natural heritage features identified by the MNRF. There are two types of ANSIs: Life Science and Earth Science. ANSIs represent important natural features that are not found in protected areas. The Natural Heritage Reference Manual provides the following definitions for ANSIs (Ministry of Natural Resources, 2010):

> Life science ANSIs are significant representative segments of Ontario's biodiversity and natural landscapes, including specific types of forests, valleys, prairies, savannahs, alvars and wetlands, their native plants and animals, and their supporting environments. They contain relatively undisturbed vegetation and landforms, and their associated species and communities. Provincially significant life science ANSIs include the most significant and best examples of the natural heritage features in the province, and many will correspond to other significant features and areas such as wetlands, valleylands and woodlands. Earth science ANSIs are geological in nature, consist of some of the most significant representative examples of the bedrock, fossils and landforms in Ontario, and include examples of ongoing geological processes.

No ANSI were identified on Site or within the adjacent lands. As such, ANSI are no longer discussed within this EIS.

5.5 Fish Habitat

Potential for fish habitat on Site is limited to the drainage feature associated with wetland Communities 2 and 3.

The closest proximity between the proposed development area and potential fish habitat is approximately 95 m. Based on the distances between suitable fish habitats and the development area, as well as the naturally vegetated areas buffering them, and that no direct alterations are expected as part of the proposed development, no direct impacts to fish habitat features are anticipated.

Potential indirect impacts are limited to only during construction activities and may include minor increases in sediment loading. Impacts are naturally negated when considering the complex topography preventing surface water from readily entering the wetlands without first moving through dense vegetated and undulating areas.

Mitigation measures for the protection of fish habitat are provided below in Section 6.0.

5.6 Habitat of Endangered and Threatened Species

A list of 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 C and a discussion of the results is provided below.

The following endangered / threatened species were assessed as having potential habitat and potential to occur on or in the vicinity of the Sites:

- Blanding's Turtle
- Gray Ratsnake
- SAR Bats

- Black Ash
- Butternut

5.6.1 Blanding's Turtle

Blanding's Turtle were not observed during targeted surveys. However, given the ample amount of suitable habitat on Site and adjacent lands, historical records of the species in the general area, and their overall cryptic nature, Blanding's turtle may be present within wetland communities on Site. Additionally, as this species is known to be transient, the Site may also provide suitable upland habitat for movement between wetland habitats and nesting sites.

As no alterations to the wetlands are expected as part of the proposed development, no direct impacts to wetland features and potential Blandings's Turtle aquatic habitat is anticipated.

The potential future construction of the residences within the two properties on Site will not hinder the ability of this species to move through the landscape, breeding activities, foraging activities, or any other aspect of their natural life cycle. Rather, any potential impacts would be the result of direct interaction between humans and transient turtles during the construction activities. Interactions could potentially be fatal if heavy equipment or machinery is involved.

Mitigation measures for the protection of SAR are provided below in Section 6.0.

5.6.2 Gray Ratsnake

The Frontenac Axis Population of Gray Rat snake is found in a variety of habitats including deciduous forests, wetlands, and agricultural fields, such as all communities found throughout the Site. Gray Ratsnake were not observed during targeted surveys. However, given the ample amount of suitable habitat on Site and adjacent lands, historical records of the species in the general area, and their overall cryptic nature, Gray Ratsnake may be present within the forested and wetland communities on Site. Additionally, the Site was also noted as having an abundance of suitable habitat features including candidate hibernacula and cavity trees.

The proposed development will require some vegetation clearing which will result in the loss of potential suitable forested habitat, foraging areas and possibly some cavity trees. However, the

majority of the development is to occur within the Cultural Plantations of Communities 10 and 11, and roadside within Community 8. These communities generally lacked suitable nesting, hibernating, of refuge habitats preferred by Gray Ratsnake.

The potential future construction of the residences within the two properties on Site will not hinder the ability of this species to move through the landscape, breeding activities, foraging activities, or any other aspect of their natural life cycle. Rather, any potential impacts would be the result of direct interaction between humans and transient snakes during the construction activities. Interactions could potentially be fatal if heavy equipment or machinery is involved.

Mitigation measures for the protection of SAR are provided below in Section 6.0.

5.6.3 SAR Bats

Little Brown Myotis, Eastern Red Bat, Hoary Bat, Eastern Small-footed Myotis, Northern Myotis, Silver-haired Bat, and Tri-colored Bat are each listed as provincially endangered. These bat species use a variety of habitats for roosting, including cavity trees, loose bark, dead foliage clusters, and live foliage. Open areas of the Site may be used as foraging habitat for these species. All SAR bats were identified on Site through acoustic monitoring.

Vegetation clearing required for the development has the potential to result in a direct loss of roosting trees and foraging areas. Indirect impacts to SAR bats are primarily associated with minor loss of foraging habitat, encroachment, and increased disturbances from human presence and interactions.

Overall impacts to collective SAR bat habitat are anticipated to be minimal given the low maternity roost density and abundance of suitable habitat in the immediate vicinity. Additionally, the required vegetation removal to accommodate the proposed development is relatively low and is not anticipated to have serious implications on the function of SAR Bat habitat in the area.

Mitigation measures and avoidance timing windows for the protection of SAR are provided below in Section 6.0.

5.6.4 Black Ash

Black Ash is a tree species that prefers moist climates and soils and is typically associated with wetlands. Black Ash were confirmed on Site in wetland communities 2, 3, 5, and 6, but were documented as greater than 100 m away from the proposed development, therefore health assessments were not undertaken.

As the proposed development does not directly overlap with the wetland associated with Black Ash habitat, direct impacts are not anticipated.

Mitigation measures for the protection of SAR are provided below in Section 6.0.

5.6.5 Butternut

Butternut is usually associated with deciduous forests, establishing under canopy openings or along forest edges. A search for Butternut was completed as part of the field investigations. A total of five Butternut trees were identified on the Site; three were in Community 1, and two in Community 9. Cambium's BHE submitted a Butternut Health Assessment to the Ministry of Environment, Conservation and Parks on September 10, 2025. The assessment investigated three of the trees, which were in proximity to the proposed development.

All three Butternut trees were classified as Category 1. A Category 1 tree is affected by Butternut Canker to such an advanced degree that retaining the tree would not support the protection or recovery of Butternut trees in the area in which the tree is located.

Impacts to the Butternut observed on Site may include encroachment and increased disturbance during construction. Overall impacts are expected to be negligible given that all three trees were classified as Category 1.

Mitigation measures for the protection of SAR are provided below in Section 6.0.

6.0 Recommended Mitigation, Best Practices, and Monitoring

The mitigation measures and best management practices outlined below should be implemented on the Site, to minimize the potential for adverse impacts to natural heritage features and functions on and adjacent to the Site.

6.1 Setbacks and Mitigation for Significant Natural Features

A 30 m setback has been applied to the wetlands, as illustrated on Figure 4. This setback is considered sufficient to protect the hydrological function of the wetlands, and will provide sufficient protection for the wetlands and all their associated natural features including: Turtle Wintering Area, Turtle Nesting Areas, Amphibian Breeding Habitat (Woodland and Wetland), Habitat for Species of Conservation Concern (Midland Painted Turtle, Snapping Turtle), Animal Movement Corridors (amphibian), Fish Habitat, Seeps and Springs, and Species at Risk (Blanding's Turtle, Black Ash). The wetlands on Site and all associated natural features are expected to retain their form, function and ecological integrity following the proposed development. The 30 m setback shall be maintained as a naturally vegetated, self-sustaining buffer. No vegetation removal shall occur within the 30 m setback.

A Butternut Health Assessment has been submitted to the MECP on Sept 10, 2025, indicating that all Butternut on Site were deemed to be Category 1. During the 30-day period that follows the submission of the report, no Butternut trees (of any category) may be killed, harmed, or taken. MECP may need to examine the Butternut trees subject to the report during this 30-day period. Removal of Butternut trees may be accomplished after the 30-day period, provided the legally mandated steps are taken to obtain necessary permits.

Additional Best Management Practices and Recommendations are presented below in Section 6.2.

6.2 Best Management Practices

Table 11 Best Management Practice Recommendations

Potential Impact	Recommended Best Practice
Erosion and Sedimentation	Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas, to prevent the entry of deleterious materials into the water. 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 and the watercourse) in the surrounding landscape. All sediment fencing shall 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. 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.
Increase in Runoff - Impervious Surfaces	Runoff from the Site is expected to increase with the introduction of impermeable surfaces (i.e., building roofs, roadways, and walkways) and compacted surfaces with reduced infiltration capacity. Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the development. Eavestrough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration.
Wildlife: Birds (Disturbance and Harm)	Nesting birds and their nests, eggs, and young are protected under the *Migratory Birds Convention Act, 1994*. Vegetation clearing on the Site shall occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines). If vegetation clearing or construction is to occur between April 1 to August 31, the vegetation shall be investigated by a qualified biologist to confirm if any active nests are present, prior to site alteration. Vegetation clearing can proceed provided there are no active nests. If active nests are confirmed, the nests shall 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 shall be inspected prior to ground disturbance if removals are to occur during the breeding season.

Potential Impact	Recommended Best Practice
Wildlife: Bats (Disturbance and Harm)	Tree removal shall be limited to the building envelope to the extent possible. Small scale tree removal will not result in impairing or eliminating the function of habitat to support bat life processes provided the tree removal avoids the active bat season (March 15 to November 30). If vegetation clearing or construction is to occur between March 15 to November 30, the vegetation shall be investigated by a qualified biologist to confirm whether SAR bat habitat may be present. Presence or absence of habitat should be confirmed through acoustic monitoring following industry standard protocols prior to any tree removal during the active season for bats. Vegetation clearing can proceed provided absence is confirmed. To protect candidate SAR bat habitat, it is recommended that the development plan be configured to avoid the removal of larger mature trees where possible, practice selective cutting, and avoid any trees with potential cavities or other suitable nesting features. Additionally, consideration should be given to minimize removal of woodland vegetation to the extent possible.
Wildlife: Reptiles (Disturbance and Harm)	Turtles and snakes are particularly vulnerable to construction-related impacts on sites adjacent to wetlands, watercourses, and waterbodies. Sediment fencing can function as wildlife exclusion fencing. To exclude wildlife from the Site, sediment fencing shall be installed around the entire perimeter of the construction area prior to the earlier of May 1 or commencement of Site preparation to keep turtles and snakes 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 surface of the 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. The construction area should also be actively inspected for turtles and snakes each day prior to the start of work throughout the duration of construction. As the Site is located adjacent to potential habitat for turtles, workers should be aware of the nesting season for turtles, which extends from May 15 to August 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well

Potential Impact	Recommended Best Practice
	secured around the base, to prevent turtles from nesting in loose substrates. Should any nesting turtles be encountered, work shall stop immediately, and the turtle should be left to finish nesting undisturbed. The turtle should be photographed, and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. The fencing will also provide a visual demarcation of the construction envelope for workers during construction, thereby preventing further encroachment into adjacent habitats. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing (Ministry of Environment, Conservation, and Parks , 2021).
Species at Risk (SAR; Threatened and Endangered)	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 shall not be handled by unauthorized individuals.
Spread of Invasive Species	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: 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. 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.

Potential Impact	Recommended Best Practice
	7. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions. 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)
Anthropogenic Impacts – Noise	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. 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.
Anthropogenic Impacts – Lighting	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. Lighting in common areas should be capped to direct light to the intended area of the ground to limit light pollution.
Anthropogenic Impacts – Domestic Animals	Access of domestic animals to natural areas can have a negative impact on local wildlife due to predation, harassment, and spread of illness and disease. Signage should be posted at trailheads and park areas to keep pets on a leash at all times, and to appropriately dispose of pet waste.

7.0 Policy Conformity and Regulatory Compliance

7.1 Provincial Policies and Regulations

Based on the 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 is in conformity with the PPS. Conformity with applicable natural heritage policy is summarized in Table 12. Note that natural heritage and hydrologic feature types not relevant to the development application have been intentionally omitted from the tables below.

Table 12 PPS Policy Conformity Summary

Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Wildlife Habitat (including habitat of special concern species)	Yes	Yes	4.1.5 d); 4.1.8
	Explanation: Mitigation measures prescribed above are sufficient to protect all identified Significant Wildlife Habitat, including habitat of special concern species.		
Habitat of Threatened and Endangered Species	Yes	Yes	4.1.7
	Explanation: The 30m setback as prescribed above for the protection of unevaluated wetlands, general mitigation measures, and BMPs are sufficient to protect *confirmed* and *candidate* SAR habitat on Site and adjacent lands. Further consideration related to habitat of threatened and endangered species is provided below.		
Fish Habitat	Yes	Yes	4.1.6; 4.1.8
	Explanation: The 30m setback as prescribed above for the protection of unevaluated wetlands is sufficient to protect fish habitat on Site and adjacent lands. Additionally, the development is anticipated to occur approximately 95 m away from the watercourse, satisfying the minimum 30 m setback.		

7.2 Habitat of Threatened and Endangered Species

The ESA protects species and their habitats that are listed as endangered, threatened, or extirpated. A summary of compliance for species confirmed or considered likely to occur on site is provided below.

Table 13 Endangered and Threatened Species Compliance Considerations

Species	Species Interaction with Site	ESA Compliance Summary
Blanding's Turtle	This species may occur on site.	Adhere to the 30 m wetland setback. Exclusionary fencing shall be installed ahead of the active season (prior to May 1st).
Gray Ratsnake	May be present in forested and wetland habitats.	Adhere to the 30 m wetland setback. Exclusionary fencing shall be installed ahead of the active season (prior to May 1st).
SAR Bats	Tree removal may result in a small loss of candidate roosting habitat.	Habitat will not be *eliminated* from the local area; therefore, authorization under the ESA is not anticipated. Tree removal will be limited to areas of construction and occur outside the roosting period (March 15-November 30).
Black Ash	Black Ash was confirmed in wetland habitats on site.	Adhere to the 30 m wetland setback.
Butternut	Five Butternut trees were confirmed on site.	A Butternut Health Assessment was submitted to the MECP to remove the southernmost three Butternut trees. Avoid work within 25 m of the two northernmost Butternut.

Where ESA compliance has been achieved, including fulfillment of the recommended setbacks, no further action is required under the ESA.

7.3 Municipal Policies and By-laws

The proposed development meets the intent of the following applicable municipal planning policies:

Township of South Frontenac adopted Official Plan

Sections 5.1.2 – 5.1.9, and 5.2.1

a) The proposed development will not occur in and/or result in negative impacts to the features or ecological functions of Wetlands, Provincially Significant Wetlands, Fish Habitat, Endangered or Threatened Species, Significant Wildlife Habitat, ANSIs, Significant Woodlands, Significant Valleylands, Linkages and Biodiversity Areas, and areas of Natural Hazards (flooding, erosion, unstable soils, kart topography, and wildland fire hazards).

Section 5.1.10, subsections a) – g)

b) This EIS was completed in accordance with all applicable criteria; an appropriate level of background review and ecological site assessment, assessment of potential impacts to natural heritage features, undertaken by qualified professionals, provides appropriate setbacks and mitigation measures, tailored to the scale of the development, and prepared in accordance with guidance from Provincial and Township guidelines.

County of Frontenac Official Plan

Sections 7.1.4.1 – 7.1.4.8

c) The proposed development will not occur in and/or result in negative impacts to the features or ecological functions of Wetlands, PSWs, ANSIs, Significant Wildlife Habitat, Fish Habitat, Endangered and Threatened Species, Significant Woodlands, Significant Valleylands, and Linkages and Biodiversity Areas.

7.4 Conservation Authority Policies

The proposed development is not to occur within any wetlands or the associated 30 m setback. This puts any planned or future contemplated development outside the area regulated by QCA policies implementing O.Reg. 41/24: Prohibited Activities, Exemptions and Permits under the *Conservation Authorities Act* (Ontario, 1990).

7.5 Federal Policies and Regulations

7.5.1 Species at Risk Act

The SARA applies to federal lands in Canada; however, at-risk aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

7.5.2 Fisheries Act

Protection provisions in the federal *Fisheries Act* prohibit the harmful alteration, disruption or destruction (HADD) of fish habitat. Any work proposed within or near a watercourse must be assessed to determine the risk of causing HADD of fish habitat. Fish habitat associated with the wetland and watercourse is located greater than 30 m from the proposed development area. Provided the mitigations discussed in Section 6.0 are implemented as part of any future contemplated development, no impacts to fish habitat are anticipated and a formal review from the DFO is not required.

7.5.3 Migratory Birds Convention Act, 1994

Nesting birds and their nests, eggs, and young are protected under the *Migratory Birds Convention Act*, 1994. Vegetation clearing on the Site shall occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines). Provided this timing window is respected, no impacts to breeding birds are anticipated.

The Pileated Woodpecker typically nests in mature forest but may also be found in younger forests with remnant mature trees. As a keystone species, the nesting cavities of Pileated Woodpeckers are of importance for other migratory birds that reuse Pileated Woodpecker nest cavities in subsequent years. As a migratory bird, Pileated Woodpecker nesting cavities are protected under the MBCA, unless they have been proven to be abandoned in accordance with the MBR. To verify that a Pileated Woodpecker nesting cavity has been abandoned, the nest must be reported to the Abandoned Nest Registry, and appropriate surveys must occur to confirm nest use. The nest must remain inactive for 36 months after registration before the nest will be deemed abandoned by the ECCC.

8.0 Summary of Recommendations

The following recommendations are provided for the proposed development:

1. Further assessment of potential impacts should be undertaken, taking into account the grading limit, stormwater management and the proposed locations of the water treatment facility and sewage system, once finalized.
2. All required approvals and permits should be obtained prior to the commencement of site alteration or construction activities.
3. All development setbacks identified herein should be included on future Site Plans. This includes a 30 m setback from the most recently delineated wetland boundary, which would serve to protect the adjacent wetland community, and the associated habitat identified therein. Existing vegetation within the setback should be allowed to self-sustain as naturalized vegetation.
4. Future 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.
5. Runoff from the Site is expected to increase with the introduction of impermeable surfaces and compacted surfaces with reduced infiltration capacity. Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the development.
6. Should trees be trees be present at the time of physical alteration, tree removals should occur between December 1 to March 14, outside of the combined bird breeding and bat roosting timing windows.
7. Tree removals should be limited to the proposed building envelope for each parcel, and limited to what is only necessary. Treed areas outside of the proposed development should be left intact and unaltered.
8. Prior to any future 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., drainage features, wetlands) 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.

9. Sediment fencing can function as wildlife exclusion fencing. To exclude wildlife from the Site for any future development, 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 turtles and snakes from entering the construction area. This fencing should be made of light-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
10. Future construction areas should also be actively inspected for turtles and snakes each day prior to the start of work throughout the duration of construction.
11. As the Site is located adjacent to potential habitat for turtles, workers on future development projects should be aware of the nesting season for turtles, which extends from May 15 to August 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well secured around the base, to prevent turtles from nesting in loose substrates. Should any nesting turtles be encountered, work should stop immediately, and the turtle should be left to finish nesting undisturbed. The turtle should be photographed, and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.

12. 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.
13. Best management practices to reduce the spread of invasive species include:
    a) Revegetate with species native to the local area.
    b) Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media.
    c) Get to know the most common invasive species in the area.
    d) 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)
    e) Immediately eradicate invasive species if they are observed on the property.
    f) Do not compost invasive species; put them in plastic bags and dispose of them in the garbage.
    g) Do not dispose of lawn or garden clippings in natural areas to avoid species introductions.
14. All equipment should be equipped with appropriate mufflers to mitigate noise levels during construction.
15. Outdoor lights should 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.

9.0 Closing

In closing, the potential negative impacts associated with the known components of the proposed development and site alteration can be appropriately minimized; however, further review is required to fully understand the elements of the project that have not yet been finalized, including grading limits, stormwater, sewage, and water treatment systems. The recommendations outlined in Section 8.0 should be followed and may be refined as a more comprehensive assessment of impacts associated with the full extent of site disturbance becomes available.

Respectfully submitted,

Cambium Inc.

Signed by:
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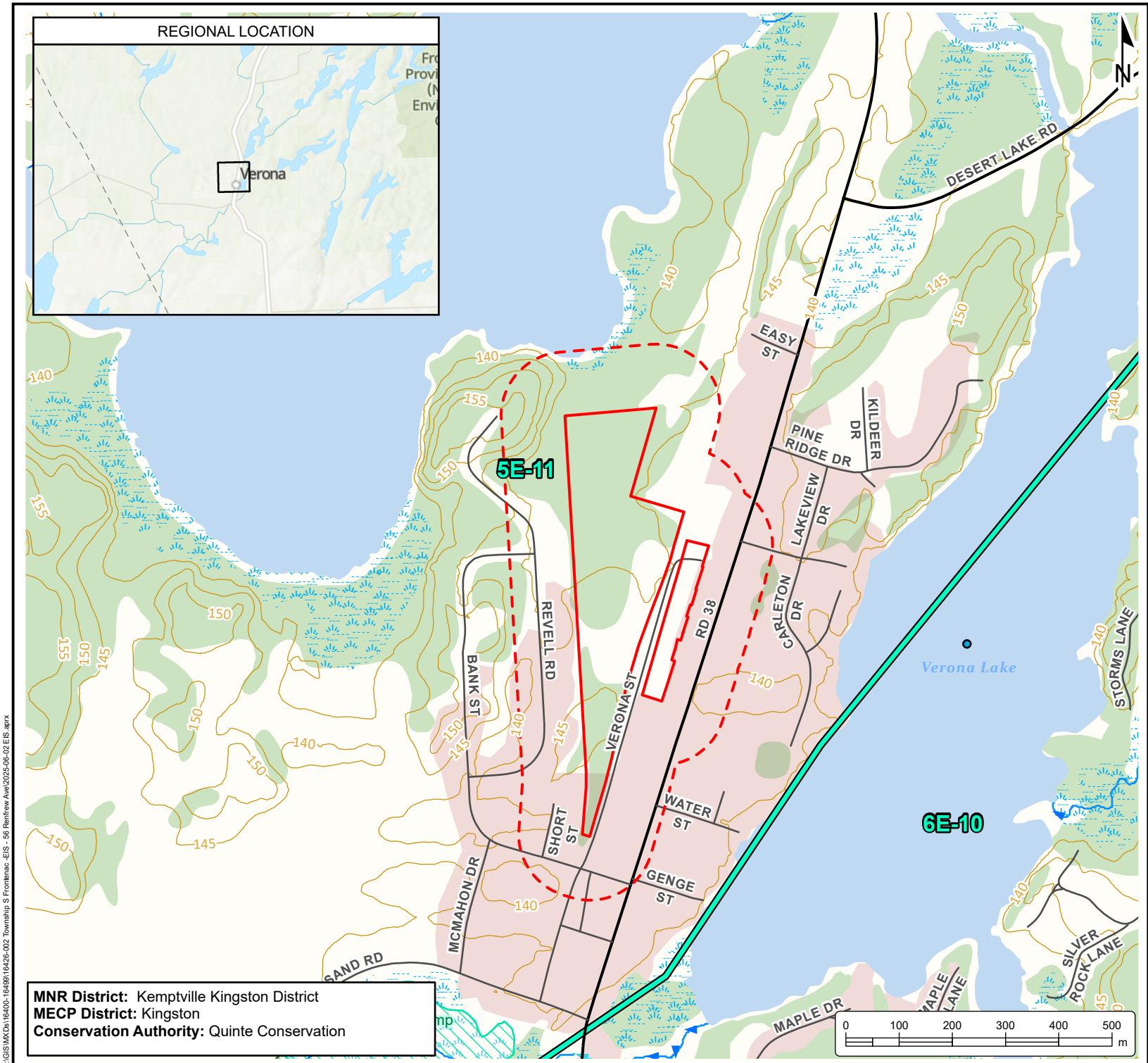
11.0 Glossary of Terms

ANSI: Area of Natural and Scientific Interest
ARA: Aquatic Resources Area
ARA: Aggregate Resources Act
AS: Agricultural System
ATK: Aboriginal Traditional Knowledge
BMA: Bear Management Area
BMP: Best Management Practice
CA: Conservation Authority
CEAA: Canadian Environmental Assessment Act/Agency
CFA: Canadian Forestry Association
CFIP: Community Fisheries Involvement Program
CFS: Canadian Forestry Service
CHU: Critical Habitat Unit
CH: Cultural Heritage
CLI: Canada Land Inventory
CLU: Crown Land Use
COSSARO: Committee on the Status of Species at Risk in Ontario
CR: Conservation Reserve
CWIP: Community Wildlife Involvement Program
CWS: Canadian Wildlife Service
DFO: Fisheries and Oceans Canada
EA: Environmental Assessment
EAA: Environmental Assessment Act
EAB: Emerald Ash Borer
EBR: Environmental Bill of Rights
EIA: Environmental Impact Assessment
EIS: Environmental Impact Study/Statement
ELC: Ecological Land Classification
ELUP: Ecological Land Use Plan
END: Endangered Species
EPA: Environmental Protection Act
ER: Environmental Registry
ESA: Endangered Species Act, 2007
ESA: Environmentally Sensitive Area
ESC: Erosion and Sediment Control
F&W: Fish and Wildlife
FA: Fisheries Act
FEC: Forest Ecosystem Classification
GPGGH: Growth Plan for the Greater Golden Horseshoe, 2020
GPS: Global Positioning System
HSA: Habitat Suitability Analysis
HIS: Habitat Suitability Index
KHA: Key Hydrologic Area(s)
KHF: Key Hydrologic Feature(s)
KNHF: Key Natural Heritage Feature(s)
LCFSP: Licence to Collect Fish for Scientific Purposes
LIO: Land Information Ontario
LRIA: Lakes and Rivers Improvement Act
LUP: Land Use Permit or Plan
MA: Management Area
MAFA: Moose Aquatic Feeding Area
MCEA: Municipal Class Environmental Assessment
MECP: Ontario Ministry of Environment, Conservation and Parks
MNRF: Ontario Ministry of Natural Resources and Forestry
NER: Natural Environment Report
NHIC: Natural Heritage Information Centre
NHIS: Natural Heritage Information System
NHS: Natural Heritage System
OBM: Ontario Base Map
OFIS: Ontario Fisheries Information System
OLI: Ontario Land Inventory
OMAFRA: Ontario Ministry of Agriculture, Food and Rural Affairs
OWES: Ontario Wetland Evaluation System
PPS: Provincial Planning Statement, 2024
PSW: Provincially Significant Wetland
RLUP: Regional Land Use Plan
RMP: Regional Management Plan
RPF: Registered Professional Forester
SAR: Species at Risk
SARO: Species at Risk in Ontario
SC: Special Concern species
SWH: Significant Wildlife Habitat
SWM: Stormwater Management

FMP: Forest Management Plan
FRI: Forest Resources Inventory
FWCA: Fish and Wildlife Conservation Act
GGH: Greater Golden Horseshoe
GHP: General Habitat Protection
GIS: Geographic Information System
GLSL: Great Lakes – St. Lawrence
THR: Threatened species
TOR: Terms of Reference
TPP: Tree Preservation Plan
WIA: Woodlands Improvement Act
WMU: Wildlife Management Unit
WSCA: Wildlife Scientific Collector's Authorization

Appended Figures



ENVIRONMENTAL IMPACT STUDY

TOWNSHIP OF FRONTENAC
Verona Street
Verona, Ontario

LEGEND

- Aquatic Resource Area Survey Point
- Major Road
- Minor Road
- Contour (5m Interval)
- Watercourse, Permanent
- Watercourse, Intermittent
- Unevaluated Wetland
- Provincially Significant Wetland
- Ecodistrict
- Water Area
- Wooded Area
- Built Up Area
- Site (approximate)
- 120m Adjacent Lands

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Peterborough, Ontario, K9H 1E5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

SITE LOCATION AND POLICY AREAS

Project No.: 16426-001		Date: October 2025	
		Rev.:	
Scale: 1:10,000		Projection: NAD 1983 UTM Zone 18N	
Created by: DBC	Checked by: TP	Figure:	1

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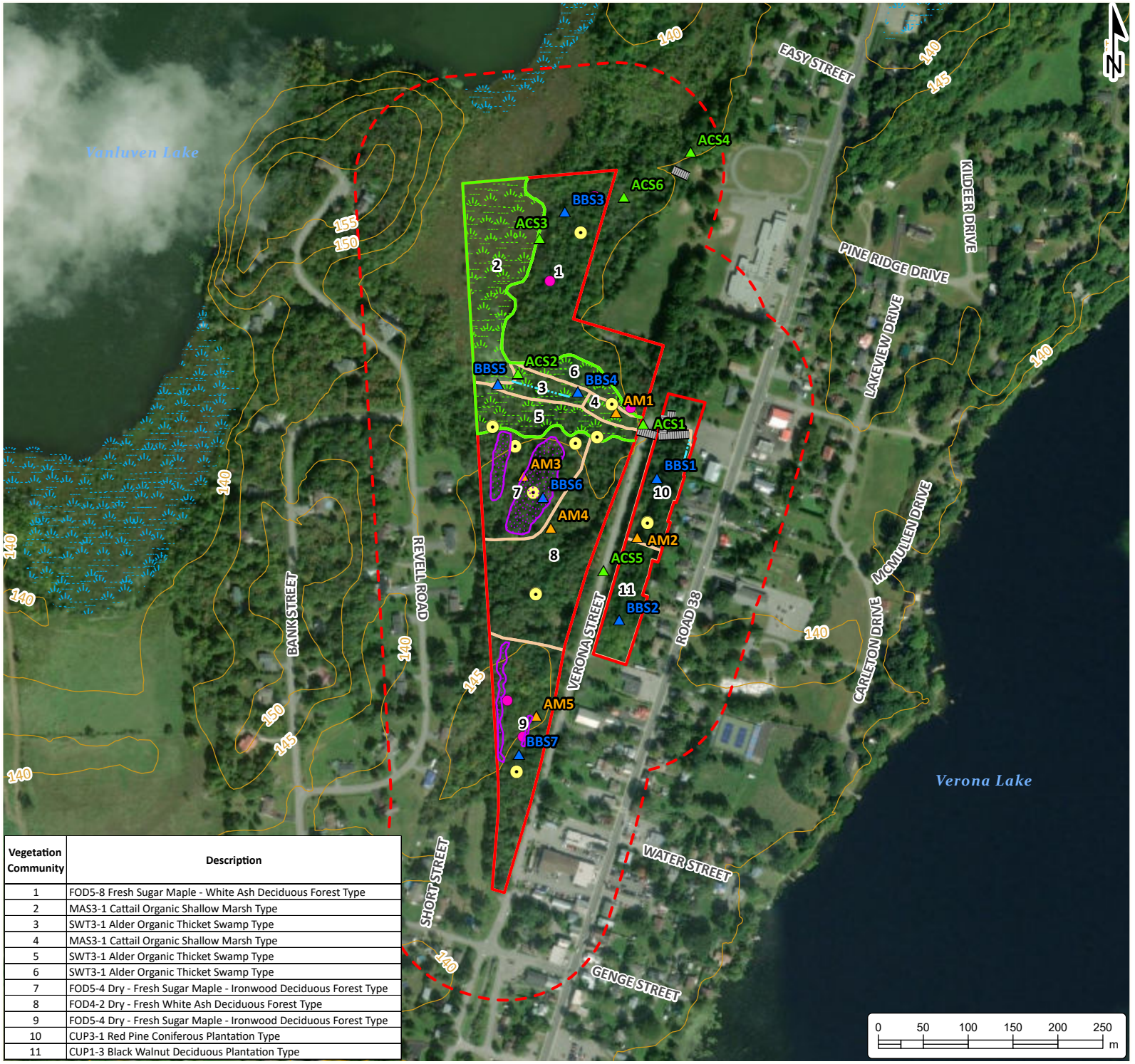

Vegetation Community	Description
1	FOD5-8 Fresh Sugar Maple - White Ash Deciduous Forest Type
2	MAS3-1 Cattail Organic Shallow Marsh Type
3	SWT3-1 Alder Organic Thicket Swamp Type
4	MAS3-1 Cattail Organic Shallow Marsh Type
5	SWT3-1 Alder Organic Thicket Swamp Type
6	SWT3-1 Alder Organic Thicket Swamp Type
7	FOD5-4 Dry - Fresh Sugar Maple - Ironwood Deciduous Forest Type
8	FOD4-2 Dry - Fresh White Ash Deciduous Forest Type
9	FOD5-4 Dry - Fresh Sugar Maple - Ironwood Deciduous Forest Type
10	CUP3-1 Red Pine Coniferous Plantation Type
11	CUP1-3 Black Walnut Deciduous Plantation Type

ENVIRONMENTAL IMPACT STUDY

TOWNSHIP OF FRONTENAC
Verona Street
Verona, Ontario

LEGEND

- Butternut
- Soil Point
- Acoustic Monitoring Location
- Amphibian Survey Station
- Breeding Bird Survey Station
- Contour (5m Interval)
- Field Verified Wetland Boundary
- Drainage Feature
- Culvert
- Unevaluated Wetland
- Rock Formation
- Field Verified Wetland
- Vegetation Community
- Site (approximate)
- 120m Adjacent Lands

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NATURAL HERITAGE FEATURES AND ECOLOGICAL SURVEY STATIONS

Project No.: 16426-001		Date: October 2025	Rev.:
Scale: 1:6,000		Projection: NAD 1983 UTM Zone 18N	
Created by: DBC	Checked by: TP	Figure: 2	

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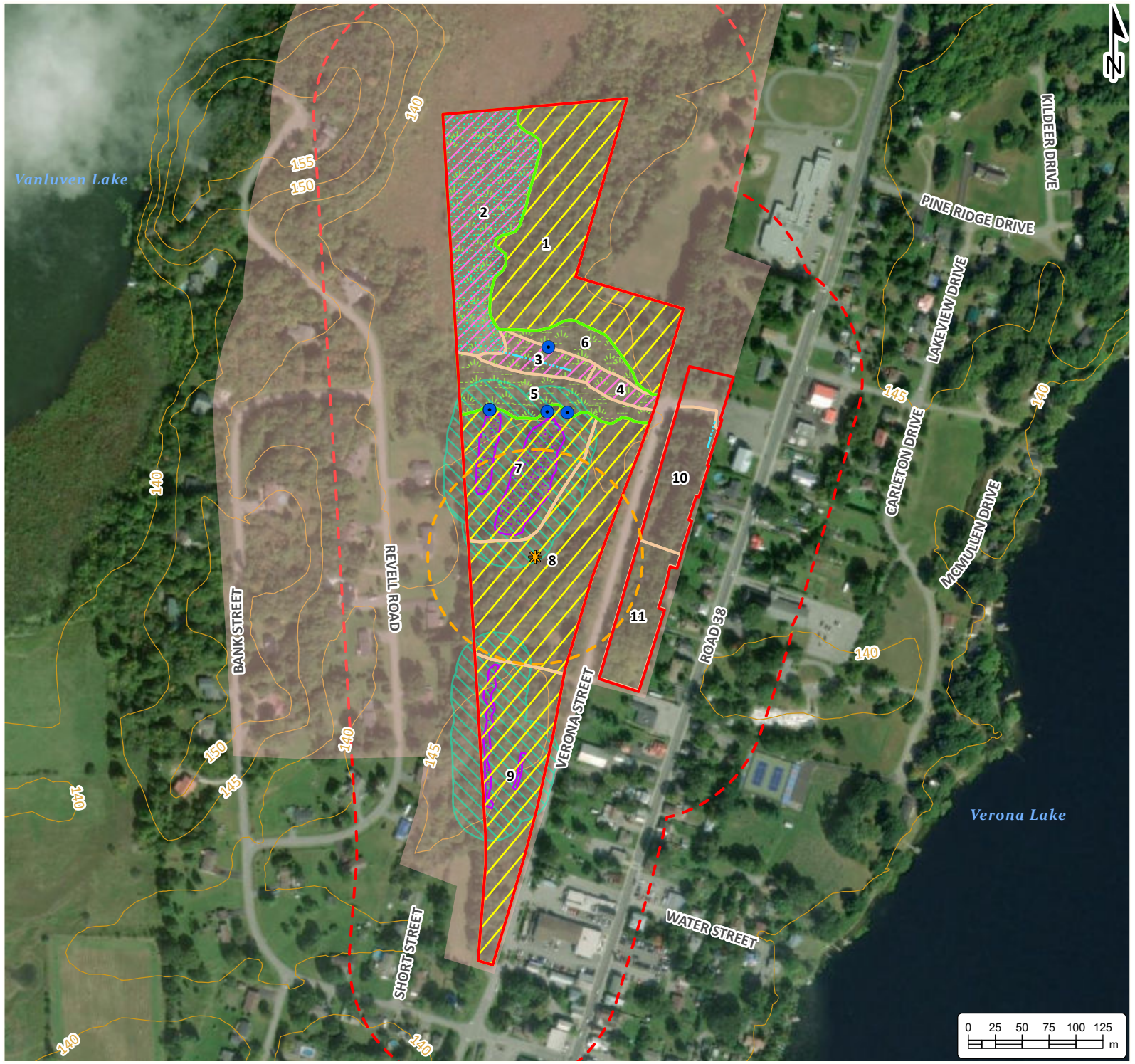

ENVIRONMENTAL IMPACT STUDY

TOWNSHIP OF FRONTENAC
Verona Street
Verona, Ontario

LEGEND

- Spring/Seep
- Stick Nest
- Contour (5m Interval)
- Field Verified Wetland Boundary
- Drainage Feature
- Field Verified Wetland
- Rock Formation
- Vegetation Community
- Site (approximate)
- 120m Adjacent Lands

Significant Wildlife Habitat:

- Reptile Hibernacula (Candidate)
- Woodland Raptor Nesting Habitat (Candidate)
- Amphibian Breeding Habitat - Wetland (Confirmed)
- Amphibian Breeding Habitat - Woodland (Confirmed)
- Bat Maternity Colony (Confirmed)
- Turtle Wintering Area (Confirmed)

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SIGNIFICANT WILDLIFE HABITAT

Project No.: 16426-001	Date: December 2025 Rev.:	
Scale: 1:5,000	Projection: NAD 1983 UTM Zone 18N	
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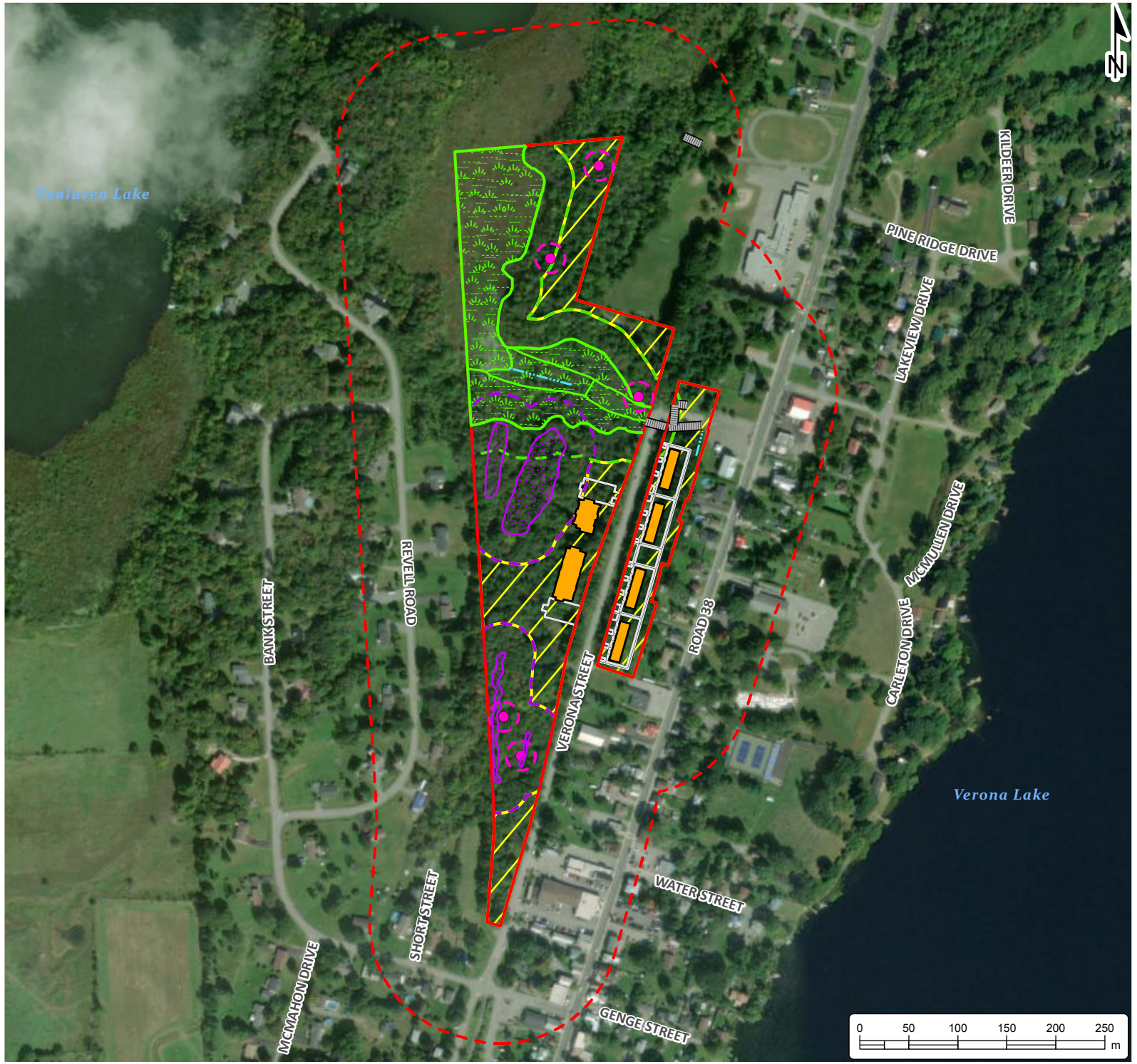

ENVIRONMENTAL IMPACT STUDY

TOWNSHIP OF FRONTENAC
Verona Street
Verona, Ontario

LEGEND

- Butternut
- Site Plan
- Field Verified Wetland Boundary
- Drainage Feature
- Culvert
- Field Verified Wetland
- Wetland Setback (30m)
- Butternut Setback (15m)
- Approximate Building Location
- Potential Developable Area (3.9 ha)
- Site (approximate)
- 120m Adjacent Lands
- Rock Formation
- Rock Formation Setback (30m)

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NATURAL HERITAGE CONSTRAINTS

Project No.: 16426-001		Date: December 2025 Rev.:	
Scale: 1:5,500		Projection: NAD 1983 UTM Zone 18N	
Created by: DBC	Checked by: TP	Figure:	4

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Appendix A
Correspondence

Outlook

RE: Butternut Health Assessment Report submission - BUR426

From Species at Risk (MECP) <SAROntario@ontario.ca>
Date Tue 09/16/25 11:22
To Ian Burnett <Ian.Burnett@cambium-inc.com>
Cc Tanya Pulfer <Tanya.Pulfer@cambium-inc.com>

1 attachment (1 MB)
Butternut Data Collection Form.pdf;

Hi Ian,

Thank you for submitting your completed Butternut Health Assessment (BHA) to the Species at Risk Branch of the Ministry of the Environment, Conservation and Parks (MECP).

Please use this email as receipt of your approved submission, dated September 10, 2025.

If you intend to rely on *Part 5 of the Ontario Regulation 830/21* for the tree(s) identified in the BHA, then you are eligible to do so 30-days following the date that the BHA was submitted to the Species at Risk Branch.

Please be advised that we updated both of our BHA forms in 2022. The updated Butternut Data Collection Form can be found on the Central Forms Repository (CRF) and is attached as reference for future use.

Please reach out if you have any questions.

Thank you,

Species at Risk Branch | Direction des espèces en peril
Ministry of the Environment, Conservation and Parks | Ministère de l'Environnement, de la Protection de la nature et des Parc
SAROntario@ontario.ca

Ontario

From: Ian Burnett <Ian.Burnett@cambium-inc.com>
Sent: September 10, 2025 1:22 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Tanya Pulfer <Tanya.Pulfer@cambium-inc.com>
Subject: Butternut Health Assessment Report submission - BUR426

Hi,
Please see attached for the Butternut Health Assessment for the report BUR426.
Please see the BHA Figures and Appendices for the supporting documents for the BHA report.

If any concerns or questions please let me know.

Thanks,
Ian

Ian Burnett
Project Manager - Senior Arborist
Natural Sciences

t: 613.389.2323
m: 613.328.4107
e: Ian.Burnett@cambium-inc.com

Appendix B

Conceptual Site Plans

JLR No.: 32106-001
Revision: 0

March 31, 2023

Phase 1 Report

Township of South Frontenac
Verona Housing Water and Wastewater Master Plan

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

Phase 1 Report
Verona Housing Water and Wastewater Master Plan

Table of Contents

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1.0 Introduction

1.1 Background

The County of Frontenac (County) Communal Services Study (2019) helps equip the County and its member municipalities, which includes the Township of South Frontenac (Township), with the planning, engineering, and economic development tools to facilitate new development, infill, intensification, and redevelopment opportunities using communal services. It does so by building on Provincial, County, and local land use policies which support communal servicing considering (a) the practical and fiscal challenges of providing or expanding municipal water and wastewater services in certain areas; and (b) the incapacity of private on-site services to enable higher forms of density, more efficient land uses and the development of complete communities.

In early 2020, the Township acquired two parcels of land in the Village of Verona with frontage on Verona Street (refer to Figure 1) for the purposes of facilitating a mixed-housing development project. The Village is a historic settlement dating back to the mid-19th Century and does not have municipal water and wastewater services. Given the location, size, and potential scale of the development project, Township Council supported the creation of a Master Plan for the affected lands in 2021. This strategic direction culminated in the Verona Housing Master Plan (VHMP) which was endorsed by Township Council in 2022. The VHMP outlines a planning and design framework for the affected lands with goals to ensure compatibility with surrounding uses and consider opportunities for connections between new housing, the downtown, and various public amenities. The VHMP also envisions an infrastructure servicing strategy for the development project that focuses on municipal communal water and wastewater services, as shown in Figure 2.

In further support of the VHMP, the Township has retained J.L. Richards & Associates Limited in 2022 to undertake the Verona Housing Water and Wastewater Servicing Master Plan (Master Plan) in accordance with Approach 1 of the Municipal Engineers Association (MEA) Class Environmental Assessment (Class EA). The intent of the Master Plan is to evaluate various municipal water and wastewater infrastructure options to ensure the preferred solution(s) can be relied upon to service the development project within the broader Village context.

1.2 Phase 1 Report Objectives

The Phase 1 Report was prepared to summarize the findings from the first phase of the Master Plan process and to use as a basis for the identification and evaluation of alternative options during Phase 2.

Specifically, the Phase 1 Report has been prepared to address the following key aspects:

- To provide an overview of the Municipal Class EA process and the specific Master Plan process being followed for the Verona Housing Water and Wastewater Master Plan;
- To outline the land use planning context to support the identification and assessment of the alternative solutions;
- To outline legislative framework related to water and wastewater servicing requirements;

- To establish service population, water demand and wastewater flows to support the development of alternative solutions;
- To develop a Problem and Opportunity Statement; and
- To confirm Phase 2 methodology and next steps.

1.3 Study Area Overview

As shown in Figure 1, the study area comprises of two Township-owned parcels on either side of Verona Street in the Village of Verona, east of Road 38:

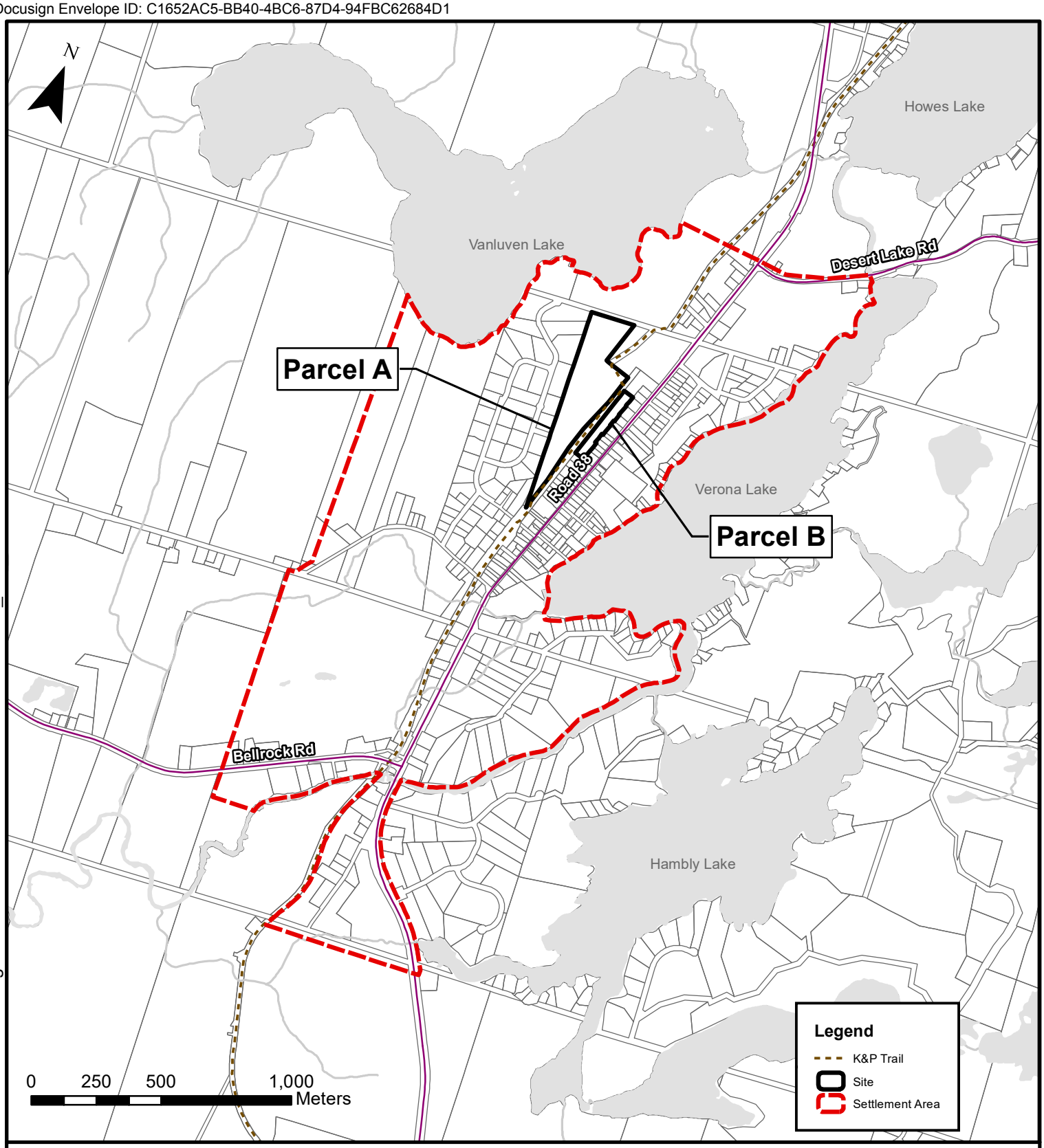
- **Parcel A** is located on the east side of Verona Street. The parcel, which is approximately 1.23 hectares (ha.), is undeveloped and treed, with hydro lines extending along the street frontage. The parcel is divided by an easement for drainage infrastructure.

- **Parcel B** is located on the west side of Verona Street. The parcel, which is approximately 8.95 ha., is undeveloped and treed, with its northerly portion constrained by floodplain/wetland features.

1.4 Previous Studies

The following is a list of the recently completed studies related to the Verona Housing Water and Wastewater Master Plan project, which are being referenced throughout the Phase 1 Report.

- County of Frontenac Official Plan
- County of Frontenac County Communal Services Study dated June 2019 by WSP
- Township of South Frontenac Official Plan and Zoning Bylaw
- Verona Housing Master Plan Report by MHBC Planning Urban Design & Landscape Architecture dated February 2022
- Verona Housing Project – Wastewater Capacity Assessment Report by Groundwork Engineering dated January 2022



PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

VERONA HOUSING WATER AND WASTEWATER SERVICING MASTER PLAN STUDY AREA

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS
www.jlrichards.ca

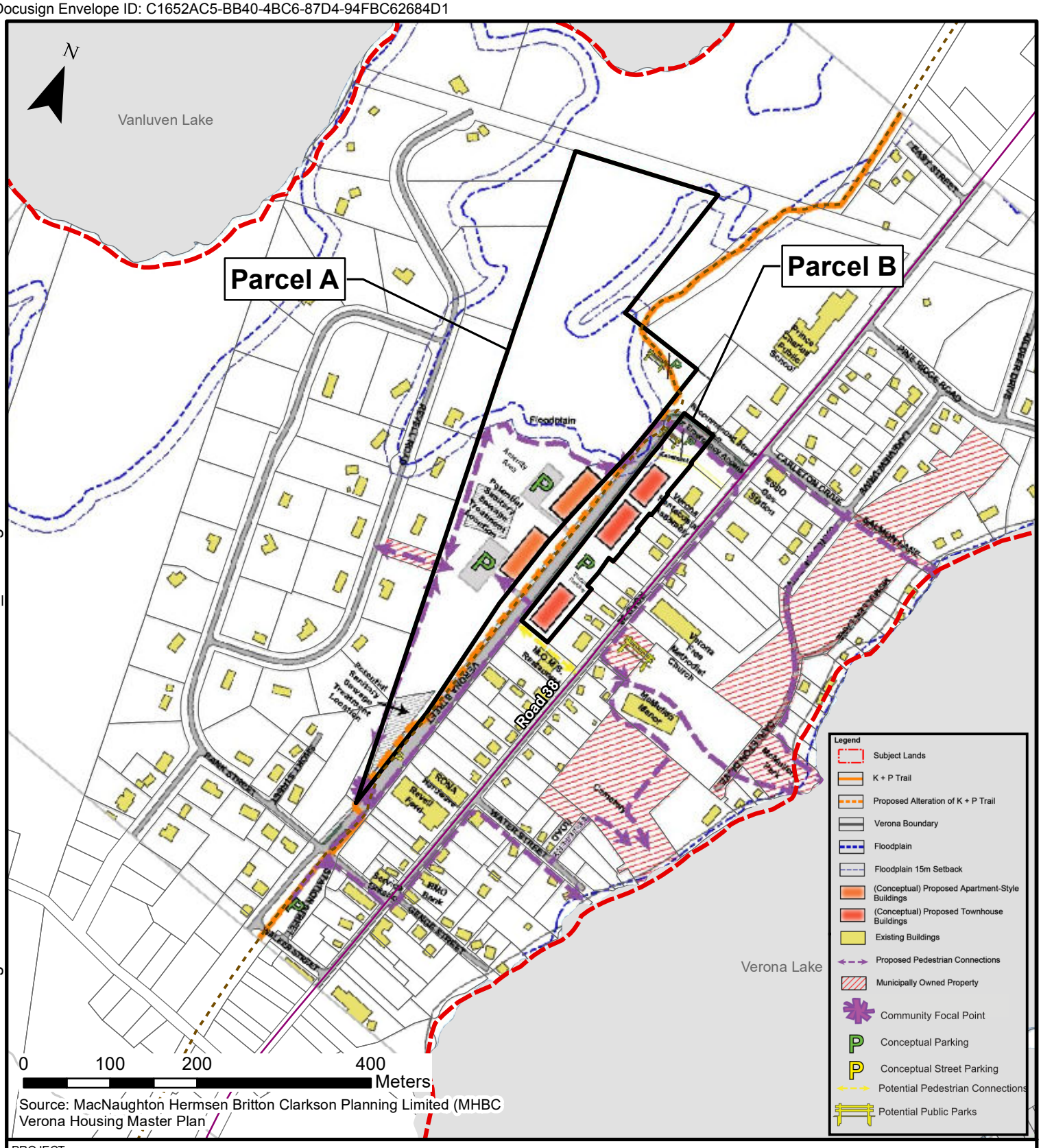
DESIGN:	AG
DRAWN:	KTK
CHECKED:	SS
JLR #:	32106

DRAWING #:

FIGURE 1

File Location: P:\32000\32106-001 - Verona Housing Class EA\03-Production\07-Plan\32106-000_LocationPlan.mxd

Plot Date: March 29, 2023 4:38:28 PM



Source: MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC Verona Housing Master Plan

PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

VERONA HOUSING PROPOSED CONCEPTUAL DESIGN (BY MHBC)

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS
www.jlrichards.ca

DESIGN:	AG
DRAWN:	KTK
CHECKED:	SS
JLR #:	32106

DRAWING #:

FIGURE 2

File Location: P:\32000\32106-001 - Verona Housing Class EA\03-Production\07-Plan\32106-000_Housing.mxd

Plot Date: March 29, 2023 4:39:35 PM

2.0 Class Environmental Assessment Process

The Ontario Environmental Assessment Act (EA Act), enacted in 1976, formally recognizes the Municipal Class Environmental Assessment (Class EA) process and outlines requirements for EA approval. The Municipal Class EA applies to municipal infrastructure projects, including roads, water, and wastewater projects. To ensure that environmental impacts and effects are considered for each project per the EA Act, proponents are required to generally follow the planning process set out in the Municipal Class EA Guidelines, prepared by the Municipal Engineers Association (MEA) (2015, as amended in March 2023) (www.municipalclassea.ca). The Class EA process includes the following stages:

Phase 1: Problem and opportunity identification.

Phase 2: Identification and evaluation of alternative solutions to determine a preferred solution to the problem or opportunity. This Phase also compiles an environmental 'inventory', identifies impacts, and outlines mitigation measures.

Phase 3: Identification and evaluation of design concepts for the preferred solution. A detailed evaluation of the environmental effects and mitigation measures will be addressed during this project Phase.

Phase 4: Complete and place Environmental Study Report on Public Record. The Report will document Phases 1 through 3 and summarize the consultation undertaken throughout the planning process and is considered valid for a 10-year period.

Phase 5: Implementation and monitoring.

Since projects may vary in their environmental impact, they are classified in terms of the following schedules:

- Schedule 'A' projects usually have minimal environmental effects and generally include normal or emergency operational and maintenance activities. These projects are pre-approved under the Class EA planning process. Projects within this category are subject to Phases 1 and 5.

- Schedule 'A$^+$' projects are pre-approved projects similar to Schedule 'A', however, the public is to be advised prior to project implementation.

- Schedule 'B' projects have potential for some adverse environmental impacts and, therefore, the proponent is required to proceed through a screening process, including consultation with affected parties. Generally, these projects include improvements and minor expansions to existing facilities. Projects within this category are subject to Phases 1, 2 and 5.

- Schedule ‘C’ projects have potential for greater environmental impacts and are subject to all five Class EA Phases. Generally, these projects include the construction of new facilities and major expansions to existing facilities.

A Master Plan is conducted under the framework of the MEA Class EA Process. It is a planning tool that identifies infrastructure requirements for existing and future land use, through the application of environmental assessment principles, and is intended to satisfy Phases 1 and 2 of the Class EA process. The Municipal Class EA guideline identifies four (4) basic approaches of the Master Planning process, including:

- Approach No. 1: This approach concludes at the end of Phases 1 and 2 of the Municipal Class EA Process. With this approach, the Master Plan is being completed at a broad level of assessment and may require further detailed assessment at the project-specific level depending on the nature of the project.

- Approach No. 2: This approach also concludes at the end of Phases 1 and 2 of the Municipal Class EA Process. However, the level of detail (i.e., investigation, consultation and documentation) fulfills the requirements for Schedule ‘B’ projects.

- Approach No. 3: This approach involves the preparation of a Master Plan document at the conclusion of Phase 4 of the Municipal Class EA Process. The level of detail of the Master Plan document can fulfill requirements for Schedule ‘B’ and/or Schedule ‘C’ projects.

- Approach No. 4: This approach involves integration with the approvals under the Planning Act.

The Verona Housing Water and Wastewater Master Plan has followed Approach No. 1, which involves the preparation of a Report at the conclusion of Phases 1 and 2. In this case, the Master Plan has been completed at a broad level of assessment thereby requiring more detailed investigations at a project-specific level in order to fulfill the Municipal Class EA documentation requirements for any specific Schedule ‘B’ and ‘C’ projects identified within the Master Plan.

This Master Plan should be reviewed every five years to determine the need for detailed formal review and/or updates. Potential changes, which may trigger the need for an update, include:

- Major changes to the original assumptions
- Major changes to components of the Master Plan
- Significant new environmental effects
- Major changes in the proposed timing of projects within the Master Plan based on changed conditions relative to the original projections/predictions.

3.0 Planning and Policy Considerations

3.1 Development Projections

As shown on Figure 1, the affected lands for the development project comprise two Township-owned parcels on either side of Verona Street in the Village, east of Road 38:

1. Parcel A is located on the east side of Verona Street. As shown on Figure 2, the VHMP recommends three blocks of one-to-two-storey townhomes on Parcel A, with individual driveways (providing access onto Verona Street) and rear yards along with other site-and-area-specific design provisions.

2. Parcel B is located on the west side of Verona Street. As shown on Figure 2, the VHMP recommends two three-storey apartments oriented to Verona Street on the southerly portion of Parcel B [reflecting the 15 metre (m.) setback from the floodplain/wetland boundary recommended by the Quinte West Conservation Authority (QWCA)], with on-site surface parking along with other site-and-area-specific design provisions.

3. The VHMP envisions the development project could be marketed towards seniors and/or small unit sizes and/or rental units for seniors and/or families to support attainability and affordability considerations. Furthermore, the VHMP also recognizes that the recommended built forms on Parcel A and Parcel B would enable the development project to be implemented in phases and allow the Township to respond to future market demands as well as servicing capacity considerations within a communal water and wastewater system (the latter being the intent of this Master Plan). Based on these considerations, Table 1 summarizes the potential unit yield scenarios from the VHMP for Parcel A and Parcel B i.e., a combined total of 58 units up to 134 units.

4. The VHMP was prepared on the basis that communal services would support the development project, as it would allow greater density than would otherwise be permitted if individual private services were proposed. As such:

    a) The manner of providing water services, either through a well or lake intake, will need to consider source water protection zone requirements.

    b) Similarly, the location of the wastewater treatment system will need to consider the terrain and the proximity of surrounding private wells. As noted, a preliminary technical assessment, prepared in conjunction with the VHMP, identified a location for this infrastructure proximate to the development node on Parcel B, as it could accommodate more development (i.e., the treatment area is larger); and it is closer to the development node, which could minimize infrastructure costs.

Table 1: Potential Unit Yield Scenarios (Parcel A and Parcel B)

PARCEL A TOWNHOMES (3 Blocks)		**MINIMUM UNIT YIELD**	**MAXIMUM UNIT YIELD**
Each Block:		4	6
Total (3 Blocks):		**12**	**18**
PARCEL B APARTMENTS (2 Buildings)	**BUILDING AREA**	**MINIMUM UNIT YIELD (79 m^2 unit area)**	**MAXIMUM UNIT YIELD (51 m^2 unit area)**
Each Building:			
Ground Floor	715 m^2	9	14
Second Storey	1,144 m^2	14	22
Sub-Total (2 storeys):	**1,859 m^2**	**23**	**36**
Third Storey	1,144 m^2	14	22
Sub-Total (3 storeys):	**3,003 m^2**	**37**	**58**
PARCEL B APARTMENTS (2 Buildings)	**BUILDING AREA**	**MINIMUM UNIT YIELD (79 m^2 unit area)**	**MAXIMUM UNIT YIELD (51 m^2 unit area)**
Total (2 Buildings): at 2 storeys each: at 3 storeys each:	 **3,718 m^2** **6,006 m^2**	 **46** **74**	 **72** **116**
TOTAL UNIT YIELDS (PARCEL A + PARCEL B)		**MINIMUM UNIT YIELD**	**MAXIMUM UNIT YIELD**
2 two-storey apartments on (B):		12 (A) + 46 (B) = **58 units**	18 (A) + 72 (B) = **90 units**
2 three-storey apartments on (B):		12 (A) + 74 (B) = **86 units**	18 (A) + 116 (B) = **134 units**

3.2 Frontenac County Official Plan (2014)

The County Official Plan is based on six themes which encourage a sustainable balance between the economy, community building and the environment. Pertinent highlights of these themes as they relate to the Master Plan and the basis upon which it is being undertaken are as follows:

1. Growth Management: As introduced above, designated Settlement Areas in the County Official Plan, which includes the Village, are allocated most of the growth in the County to support their continued development into complete communities (County Official Plan: see Sections 3.1; and 3.2).

2. Community Building: The County Official Plan recognizes that its growth management directives would be further enabled by developing and/or extending municipal water and wastewater services in Settlement Areas. However, the jurisdictional, practical, and fiscal

realities and challenges associated with doing so are equally acknowledged. As such, the County Official Plan supports (a) *private* communal services where municipal services are not available, planned, or feasible; and (b) intra-and-inter-jurisdictional partnerships in advancing local municipal infrastructure strategies (County Official Plan: see Section 4.2.1).

3. Housing and Social Services: To allow residents to enjoy a high quality of life and age-in-place, the County Official Plan supports a variety housing types and forms in Settlement Areas, including affordable housing and seniors housing (County Official Plan: see Sections 5.2; and 5.3).

4. Environmental Sustainability:

    a) The County endorses the development of Lake Management Plans to help determine the carrying capacity for development and opportunities to improve water quality (County Official Plan: see Section 7.1.4).

    b) Source Water Protection Plans have been developed for each major watershed in the County, recognizing the critical balance between addressing residents' needs and protecting and managing groundwater resources. The Village is included within the Quinte Source Protection Plan area. As such, the County Official Plan supports initiatives that comply with the *Clean Water Act* (County Official Plan: see Section 7.2).

    c) The County Official Plan states that development shall be prohibited within regulatory floodplains, except for those uses that by their very nature must be located therein (e.g., water intake facilities), and subject to applicable regulatory approvals (County Official Plan: see Section 7.3.2).

3.3 Township Official Plan (2003)

The Township Official Plan establishes the land use planning goals and policies that guide physical development, protect natural heritage, manage resources, and support necessary infrastructure in the Township. The Official Plan was adopted in 2003. The Township is currently conducting an Official Plan Review, and a Draft Official Plan (2022) is currently under review. However, the pertinent highlights provided below focus on the 2003 Official Plan, relative to the Master Plan and the basis upon which it is being undertaken. Despite this approach, the cross-references between the 2003 Official Plan and 2022 Draft Official Plan are also noted to demonstrate similarities in both policy intent and scope, while recognizing that the 2022 Draft Official Plan is not in full force and effect at the time of writing this TM:

1. The Village is designated as one of the main Settlement Areas in the Township Official Plan (note its boundaries are shown on Figure 1) and as such, is a focus for growth and development. Its more specific intent is to ensure that sufficient lands are available to promote a full range and mix of housing types and densities, subject to site-and-area-specific development criteria as well as infrastructure servicing standards and requirements (2003 Official Plan: see Section 5.6 | 2022 Draft Official Plan: see Section 2.1).

2. The Township Official Plan states that development shall be prohibited within regulatory floodplains, except for those uses that by their very nature must be located therein (e.g., water intake facilities), and subject to applicable regulatory approvals (2003 Official Plan see Section 5.2.3 | 2022 Draft Official Plan: see Section 5.2.1.2).

3. While the Township Official Plan prohibits new *private* communal water and wastewater systems to serve multi-unit / lot developments, municipal communal service systems (owned and operated as a municipal service) may be used for such developments within Settlement Areas, subject to the undertaking of an MEA Class EA (2003 Official Plan: see Sections 6.10.1; and 6.10.2 | 2022 Draft Official Plan: see Section 7.4). As noted earlier, this is an important consideration, relative to:

    a) The policies in both the County and Township Official Plans regarding private and municipal communal services.

    b) The more specific role of the Township as the lead proponent in the VHMP, Master Plan and development project, in that its ownership and operation of a communal system could then be considered a municipal system.

4. To maintain the quality and quantity of surface water and groundwater resources:

    a) The Township must be assured that proposed developments will not exceed the capacity of the lake to accommodate development, and further endorses Lake Management Plans to help determine the carrying capacity for development and opportunities to improve water quality (2003 Official Plan: see Sections 5.2.10; and 6.8 | 2022 Draft Official Plan: see Sections 7.6.1; and 7.6.2).

    b) The Township shall implement the Source Protection Plans within its jurisdiction, including the Quinte Source Protection Plan (of which the Village is a part) (2003 Official Plan: see Section 7.2 | 2022 Draft Official Plan: see Section 7.6.3).

Based on the location, size, and potential scale of the development project, the Master Plan concurs with the recommendation outlined in the VHMP regarding the need to include project-specific policies as part of the current Official Plan Review. As noted in the VHMP, the policies should distinguish the development project from developments in the Township's other Settlement Areas by recognizing its goals for the Village to support attainable and affordable housing for seniors and/or families; ensure compatibility with surrounding uses and connectivity with the downtown and various public amenities; and enable the use of communal services to support an appropriate form of residential density, more efficient land uses and the development of a complete community.

3.4 Township Zoning By-law No. 2003-75

The Township Zoning By-law No. 2003-75 (Zoning By-law) implements the Township Official Plan by regulating the use, size, height, and location of buildings and structures on properties within the municipality. Pertinent highlights of the Zoning By-law related to the Master Plan and the basis upon which it is being undertaken are as follows:

1. Parcel A in the VHMP is zoned *Urban Residential First Density Zone (UR1)*. The zone permits a single detached dwelling, amongst other non-residential uses.

2. Parcel B in the VHMP is zoned *Rural Zone (RU)*, which permits a wide range of rural and agricultural uses as well as a single detached dwelling.

3. *Communal Water and Wastewater Service* is not defined in the Zoning By-law, nor is it referenced under Section 5.17 (Public Uses and Utilities) of the Zoning By-law.

4. Provisions in the Zoning By-law for communal water and wastewater services are only site-specific in nature (i.e., for mobile home park sites, and for a tourist cabin development), and do not address their use to support permitted developments in the Township.

Based on the above, a Zoning By-law Amendment would be required to support the intent of the proposed development. At this time, the *Urban Multiple Residential Zone (UMR)* would appear most appropriate for Parcel A and Parcel B, as it permits *Multiple Unit Dwelling* and *Senior Citizen Multiple Dwelling*. Provisions to potentially accommodate *Communal Water and Wastewater Service*, subject to the outcome of the Master Plan, should also be considered as part of the Zoning By-law Amendment.

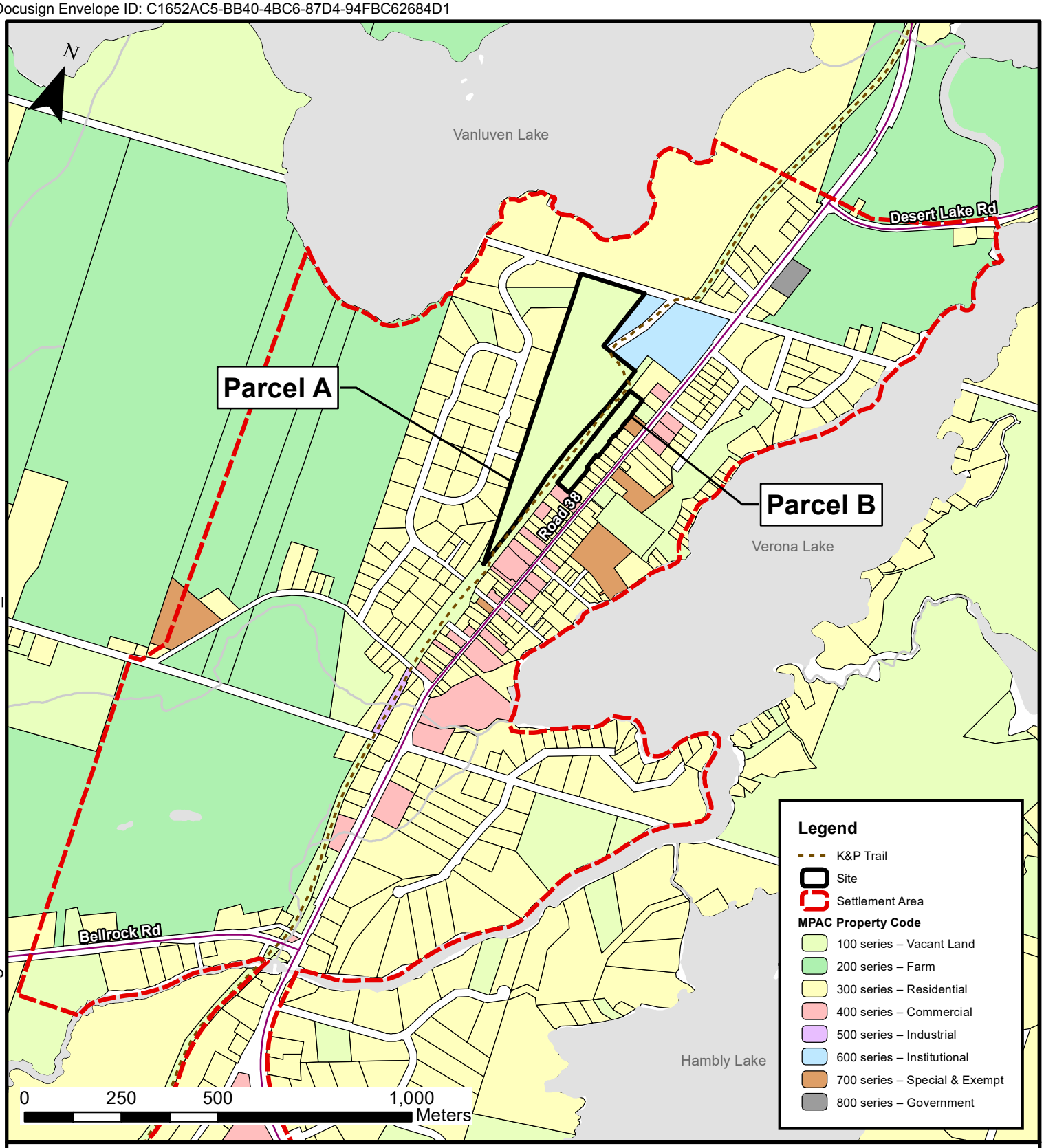
3.5 Provincial Policy Statement

The 2020 Provincial Policy Statement (PPS) provides general policy guidance on matters of provincial interest related to land use planning and development. The 2020 PPS provides policy direction for appropriate development while protecting resources of provincial interest, public health and safety as well as the quality of the natural environment. All local planning matters must be consistent with the 2020 PPS, which is issued under Section 3 of the Planning Act. The Planning Act requires that decisions of Council be consistent with the Statement. Policies related to infrastructure, servicing (sewer and water), climate change, natural heritage wetlands and water, and aboriginal interests may have implications at the Class EA level.

Section 1.6 of the 2020 PPS outlines policies for sewage, water and stormwater facilities. In particular, infrastructure and public service facilities shall be provided to be financially viable, prepared for the impacts of a changing climate and accommodating for forecasted growth. The detailed design phase will develop the proposed upgrades to address these policies.

Section 2.1 of the 2020 PPS states that development and site alteration within or on adjacent lands to significant natural heritage features (identified in policies 2.1.4, 2.1.5, and 2.1.6), unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions (PPS 2020). The proposed project site is not subject to the Oak Ridges Moraine Conservation Plan, the Niagara Escarpment Plan, the Greenbelt Plan, or the Lake Simcoe Protection Plan.

Refer to Figure 3, 4 and 5 for existing land use, municipally owned properties and natural features surrounding the study area.



PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

LAND USE PLANNING

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DESIGN:	AG
DRAWN:	KTK
CHECKED:	SS
JLR #:	32106

DRAWING #:

FIGURE 3

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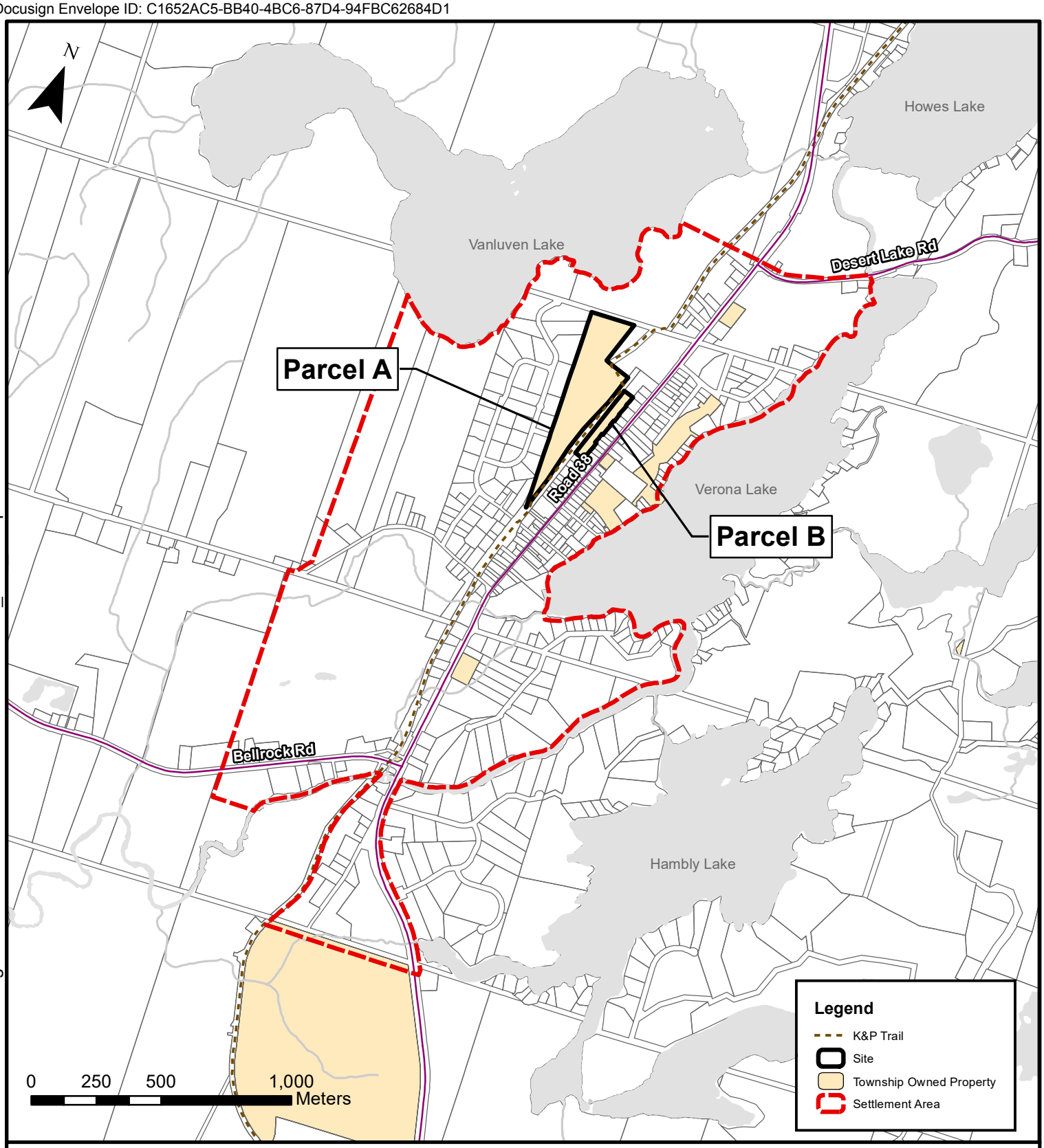

PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

MUNICIPALLY OWNED PROPERTIES

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FIGURE 4

File Location: P:\32000\32106-001 - Verona Housing Class EA\03-Production\07-Plan\32106-000_Ownership.mxd

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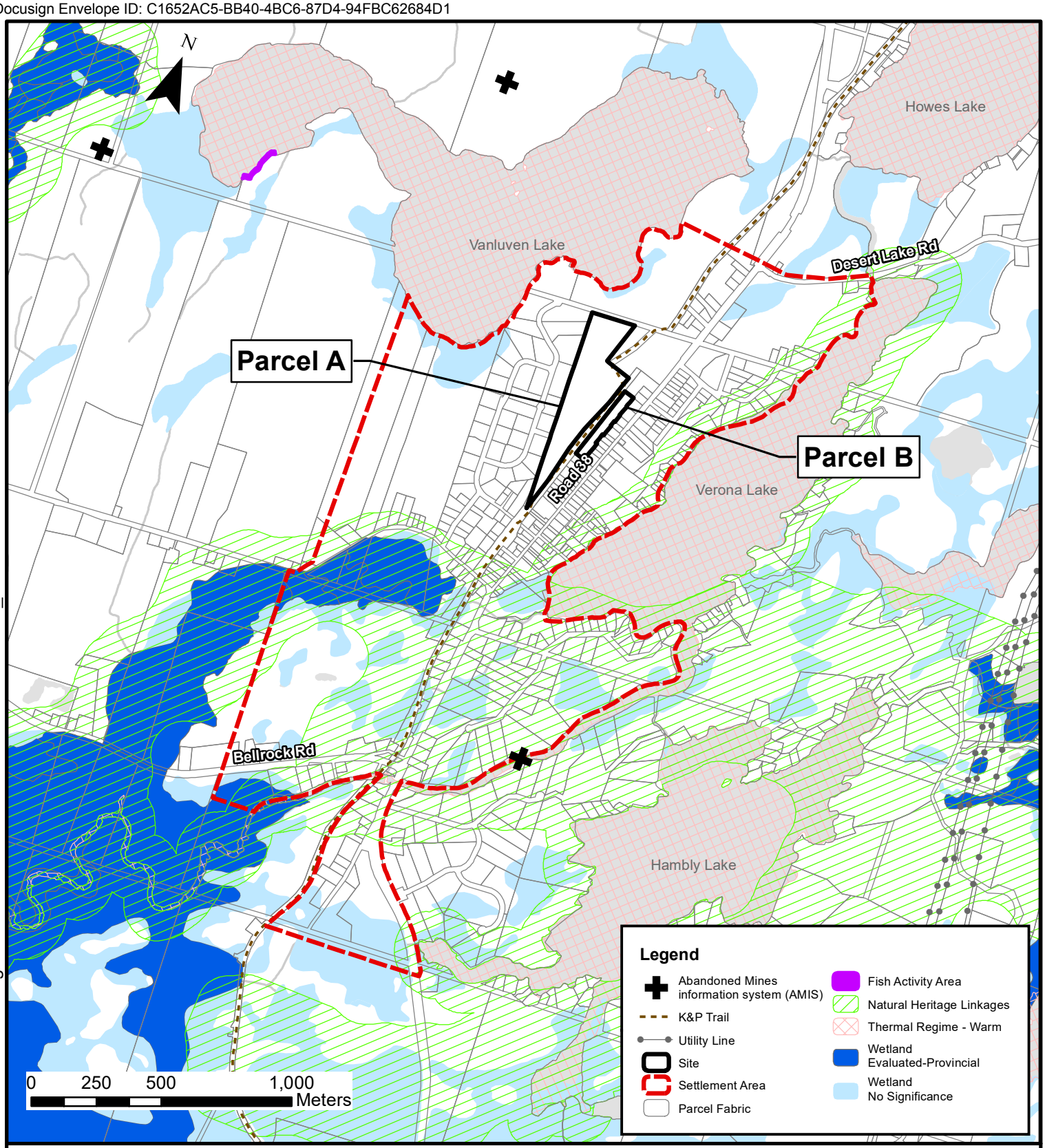

PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

NATURAL FEATURES

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JLR #:	32106

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FIGURE 5

File Location: P:\32000\32106-001 - Verona Housing Class EA\03-Production\07-Plan\32106-000_Natural Features.mxd

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4.0 Water and Wastewater Servicing Legislative Framework

This section intends to provide an overview of the applicable legislative framework for the municipal drinking-water and wastewater servicing the proposed Verona Housing Development project, such that the broader context is understood.

4.1 Legislative Framework for Municipal Water Servicing

The proposed drinking-water system for the Verona Housing project will be operated and maintained by the Township of South Frontenac. As such, the future system shall be considered as a municipal drinking-water system.

For providing services to fewer than 500 people, the drinking-water system is governed by the Drinking-Water Systems Regulation (*O.Reg. 170/03*), under the *Safe Drinking Water Act, 2002* and other SWDA regulations.

When selecting a source of water for the drinking-water system, it shall be ensured that the adequate water quantity will be available and that the treated water will meet the Ontario Drinking-Water Quality Standards Regulation (*O.Reg. 169/03*) under the *Safe Drinking Water Act, 2002* and *O.Reg. 170/03,* as well as the Procedure for Disinfection of Drinking Water in Ontario (Disinfection Procedure) adopted by *O.Reg. 170/03* through reference. The operational goals and aesthetic objectives for the treated water must be achieved for those identified in the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines.

It has been noted in the MECP Design Guidelines for Drinking-Water Systems (2008) that, when selecting a drinking water source, the following aspects shall be reviewed and investigated:

- Source protection and potential development status of each water source;
- Sufficient safe yield to provide adequate quantity of water;
- Treatment requirements; and
- Financial considerations.

Drinking Water Systems (*O.Reg. 170/03*) under the *Safe Drinking Water Act, 2002*, provides the definitions of “large municipal residential systems” and “small municipal residential systems”, as follows:

- “Small municipal residential system” means a municipal drinking water system that serves a major residential development but serves fewer than 101 private residences.
- “Large municipal residential system” means a municipal drinking water system that serves a major residential development and serves more than 100 private residences.

Clean Water Act, 2006 was enacted to protect existing and future sources of drinking water. Section 6.0 of this report provides further details on the local source water protection requirements. The New Requirements for Municipal Drinking Water System Owners (2018) issued by the MECP applies for new municipal drinking water systems located within a source protection area. It requires that new and existing vulnerable areas are identified alongside vulnerability scores. This includes consulting with the source protection authority prior to applying for a Drinking Water Works Permit and identifying where activities pose a risk to drinking water in accordance with the *Clean Water Act, 2006*. This process will result in an update to the local source protection plan.

For water takings greater than 50,000 L/d, it requires a permit to take water (PTTW) under Section 53 of the *Ontario Water Resources Act* as administered by MECP.

4.2 Legislative Framework for Municipal Wastewater Servicing

The design of municipal wastewater works is regulated by the *Ontario Water Resources Act (1990)*. The MECP administers various guidelines and procedures that should be adhered to when designing the wastewater treatment works.

The determination of the treatment effluent quality requires site specific investigations to ensure consistency with MECP's Guideline B-1, Water Management Policies, Guidelines and Provincial Water Quality Objectives. MECP's Guideline F-5, Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters, governs the required treatment step for a surface water discharge wastewater treatment facility.

Wastewater systems with a total daily design sanitary flow in excess of 10,000 L/d are subject to the requirements of Section 53 of the *Ontario Water Resources Act*. Subsurface disposal systems with a design capacity in excess of 10,000 L/d are referred as large subsurface sewage disposal systems (LSSDS). The design of the LSSDS should consider the design standards for small subsurface disposal systems contained in Part 8, Division B, of the Ontario Building Code. However, the clearances or separation distances from large systems to such features as wells, surface water bodies and property boundaries need to be determined on a case-specific basis. There are guidelines and procedures governing the design of LSSDS, including Guideline B-7 Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities, Procedure B-7-1 Determination of Contaminant Limits and Attenuation Zones, Wells Regulation *O.Reg. 903* (Revised Regulations of Ontario 1990), and *Clean Water Act, 2006*.

5.0 Design Basis

5.1 Service Population

Based on the average size of census families in the Township in 2021 (2.8 people) and the potential unit yield scenarios in the VHMP (58 to 134 units) as shown in Table 1, the residency forecast ranges from 175 people up to 400 people. For the purpose of this Master Plan, it has been assumed that the proposed water and wastewater servicing will accommodate a maximum of 400 people.

5.2 Future Drinking Water Demands

5.2.1 Household (Interior) Water Demands

According to the MECP Design Guidelines for Drinking-Water Systems (2008), domestic water demand can vary from 180 L/d/cap to more than 1,500 L/d/cap, depending on the type of water system. Since this is a new residential development, it has been assumed that the domestic water demand of 280 L/d/cap is sufficient. Note that the City of Ottawa had published a set of design guidelines for water and sewer in 2010 with subsequent Technical Bulletin posted in 2018 which updated the per capita residential water usage from the MECP Design Guidelines. It has been recommended by the City of Ottawa Design Guidelines to apply 280 L/d/cap for new residential

development, based on water conservation practices and high efficiency water fixtures widely used. Table 2 below presents the future drinking water demands for a system of this size (i.e., fewer than 500 people).

Table 2: Future Drinking Water Demands (Household Interior)

Servicing Population	Dwellings	Average Daily (m^3/day)	Night Minimum hour (m^3/day)	Maximum day (m^3/day)	Peak hour (m^3/day)
175	58	49	5	230	347
400	134	112	15	358	538
Note: Minimum hour, max day, peak hour factors derived from Table 3-3 in MECP Design Guidelines for Drinking-Water Systems. Linear interpolation was completed to calculate the factors.					

5.2.2 Fire Protection

It is the Township's responsibility to determine whether or not fire protection should be provided through the communal water supply system. It is recommended that the fire protection not being provided through the drinking water system for Verona Housing, in order to reduce water taking quantities, storage requirements and peak flows.

It is understood that the existing fire suppression water supply for the Village of Verona comes from a dry hydrant on Dessert Lake Road. With the proposed new mixed housing development, it is recommended that the Township review the existing fire protection plan and provide an update based on the type of development and number of new units being constructed.

5.2.3 Outdoor Water Use

It has been stipulated by the MECP that, for outdoor water use, 25% of the homeowners could be consuming an outdoor tap at any given time, with a rate of 20 L/min for one hour per day. This represents a significant water use that is challenging to achieve for a system of this size.

For Verona Housing development, it is recommended that the Municipality restrict the outdoor water use during peak hour flow conditions, such that the peak water demand of the new system can be reduced. As best practice, the Municipality should implement water conservation initiatives to ensure water demand is optimized and maintained. For the purpose of the Master Plan, it has been assumed that outdoor water use will not contribute the peak hourly flow demand.

Table 3: Future Drinking Water Demands (Potential Outdoor Water Use if Allowed)

Total Dwellings	Outdoor Use Dwellings	Outdoor Peak hour (L/min)	Outdoor Peak hour (m^3/day)
58	15	300	432
134	34	680	980

5.2.4 Total Drinking Water Demands

The following table provides a summary of the future water demand for the proposed Verona mixed housing development.

Table 4: Future Drinking Water Demands

Serviced Population	Average Daily (m^3/day)	Night Minimum hour (m^3/day)	Maximum day (m^3/day)	Peak hour (m^3/day)
175	49	5	230	347
400	112	15	358	538

5.3 Future Wastewater Flows

In 2022, Groundwork Engineering Limited prepared a Wastewater Capacity Assessment Report for the proposed Verona Housing development that documented the field assessment and the estimated available capacities of the site for subsurface disposal of treated wastewater. In the report, theoretical wastewater flow was calculated based on Ontario Building Code wastewater flow design basis of 275 L/d/cap, minimum and maximum proposed units at that time. The design wastewater flow ranges from 60 m^3/d to 101.2 m^3/d, depending on the housing units assumed.

The wastewater flow design basis of 275 L/d/cap by Groundwork Engineering is consistent with 280 L/d/cap used in the water demand calculations as recommended by City of Ottawa Design Guidelines. The following table provides a summary of updated wastewater design flow with the updated population projections.

Table 5: Future Wastewater Flows

Serviced Population	Average Daily (m^3/day)
175	49
400	112

6.0 Drinking Water Source

6.1 Quinte Region Source Water Protection Plan (Version 1.1, 2019)

Ontario's Clean Water Act provides the mandate for a Provincial drinking water source protection program in Ontario. Its focus is on the protection of sources of water for municipal drinking water systems, with additional attention on surface water and groundwater sources on the broader landscape.

The County and Township are part of the Quinte Source Protection Region. Noteworthy source water policies as they relate to the Master Plan and the basis upon which it is being undertaken are as follows:

- Due to shallow soil conditions over fractured bedrock, the Village and surrounding area are identified as a *Highly Vulnerable Aquifer*. This regards the ease with which a contaminant carried by surface water can move through the thin soils as well as cracks and crevices in the bedrock, and into the underlying groundwater. As such, mitigation measures would be required for proposed developments in *Highly Vulnerable Aquifer* areas that involve the storage or manufacture of potential contaminants (e.g., wastewater) where it would constitute a drinking water threat.

- As stated in the VHMP and subject to the outcome of the Master Plan, where more than five residential units are serviced by a new common water source (i.e., a well or a lake water intake) that is owned by a municipality or a municipal service corporation, a Source Water Protection Plan (SWPP) would be required. The SWPP would also include a Risk Management Plan (RMP) to further advance the mitigation provisions outlined in the Master Plan to ensure that a significant drinking water threat is sufficiently managed in accordance with Part IV of the *Clean Water Act*.

In addition, Policy 2-3-F of the Quinte Region Source Protection Plan regulates New Development and Future Construction on Lots of Record with Proposed Sewage Systems. It states that the municipality shall only approve future development of onsite sewage systems after reviewing the Official Plan and zoning by-law with Quinte Conservation, issuing amendments to these documents to regulate development, and determine the need for studies to demonstrate that a future sewage system can be adequately managed and will not adversely impact the municipal water supply.

6.2 Watershed Description

This section aims to provide an overview of the watershed characteristics for the future water and wastewater servicing for the Verona Housing Development.

Quinte Conservation published a Watershed Characterization report in April 2008 (Version 1.1) that documented the known information about the Quinte Region Watershed. A Quinte Region Drought Management Project Water Budget was published in 2019 during which the GIS water budget model was reviewed and updated. A Quinte Region Drought Plan was published in 2021 that documented the drought management plan and actions recommended for municipalities to reduce drought impact through development approval process. These documents form the basis of this section.

6.2.1 Surface Water Supply

The Village of Verona is located within the Napanee River watershed and Camden sub-watershed.

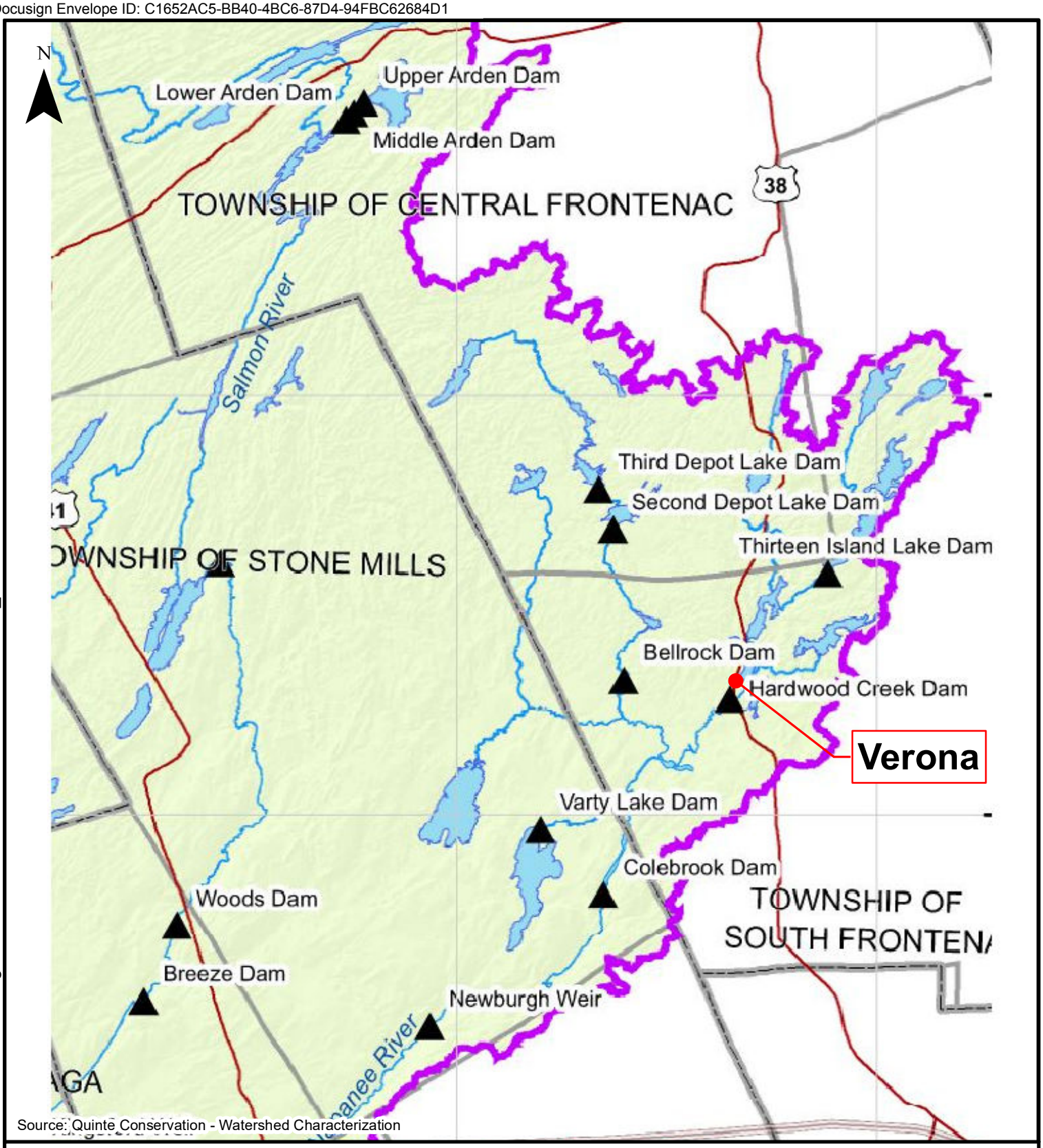
Local surface water source is available for this new development. The possible source and location for water taking is Verona Lake. Although the proposed development is adjacent to Vanluven Lake, the Vanluven Lake is relatively shallow. The surface water quality from this lake does not appear to be suitable for a municipal drinking water source.

There is currently very limited surface water flow information available for Verona Lake, based on discussion with Quinte Conservation. Details pertaining to the surface water flow around Verona Lake are summarized as follows:

- There is one upstream dam at the outlet of the Thirteen Island Lake. There is no flow monitoring device at this dam. The dam is being used to maintain summer water levels on Thirteen Island Lake. Refer to Figure 6.
- The closest dam at Hardwood Creek is located one kilometer south of the Village of Verona on Hardwood Creek. There is no flow monitoring device at this dam. The dam is being used to maintain summer water levels on upstream lakes. Refer to Figure 6. Township to discuss lake levels with Verona Community Association
- The closest flow gauge is at Camden East along Napanee River. Refer to Figure 7.

The Technical Guidance Document for Surface Water Studies in Support of Category 3 Applications for Permit to Take Water provides recommended approach for the pro-rating flow information in the event that stream flow is unavailable. It also documented principles for assessing water quantity objective for a stationary water body (i.e., to maintain existing of inflow and outflow by maintaining a normal volume of water body, accounting for seasonal fluctuations).

Specifically for the Village of Verona, the Quinte Conservation has identified this area of having low surface water stress levels (i.e., local water demand in Camden sub-watershed represents less than 20% of surface water supply) in the 2019 water budget modelling. This represents the potential for increased surface water taking for the proposed Verona Housing development. Further consultation with Quinte Conservation will occur in the next step of the Master Plan to acquire and develop available surface water quantity through Verona Lake.



Source: Quinte Conservation - Watershed Characterization

PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

QUINTE CONSERVATION DAMS

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FIGURE 6

File Location: P:\32000\32106-001 - Verona Housing Class EA\03-Production\07-Plan\32106-000_ConservationDam.mxd

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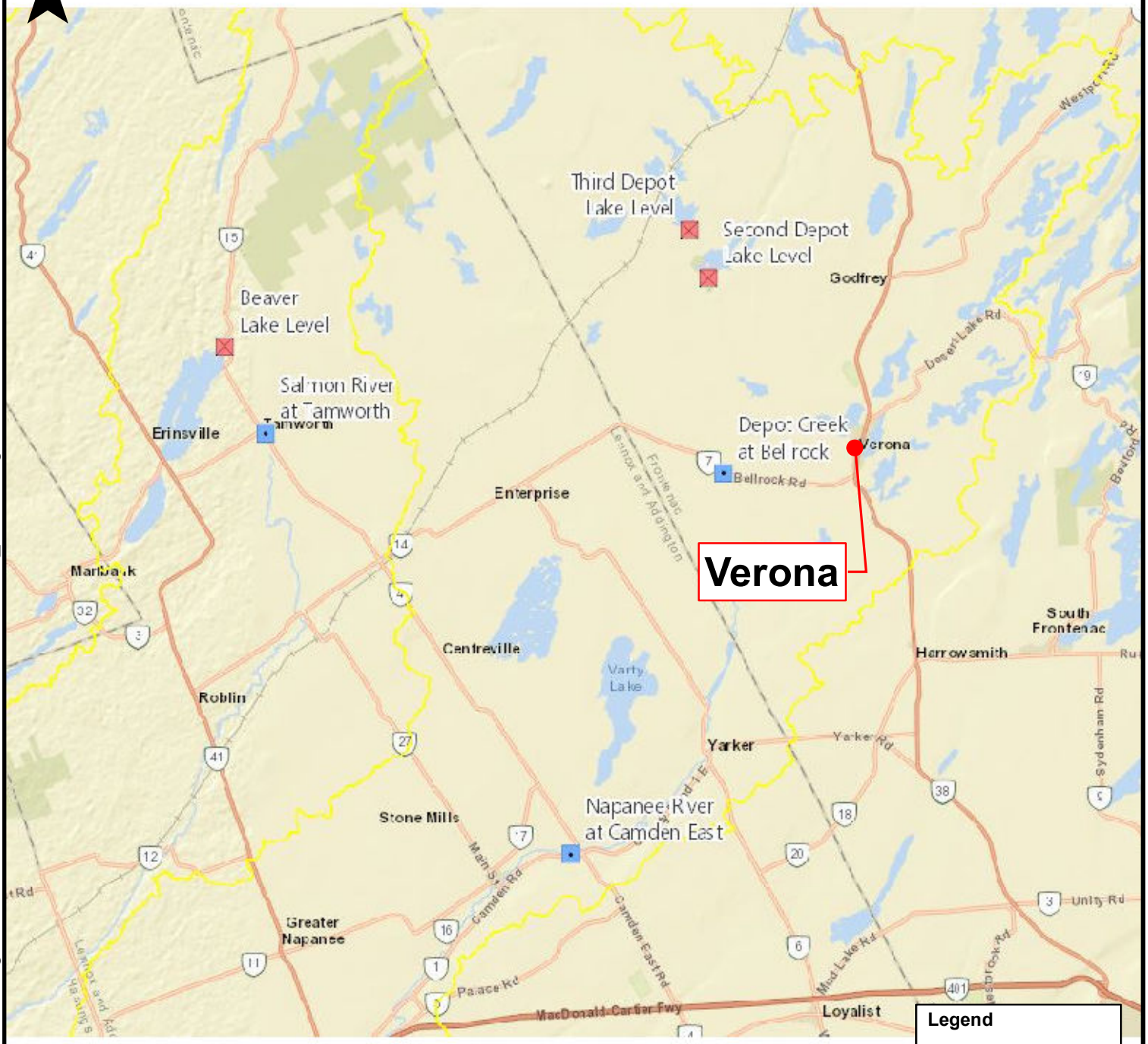

Source: Quinte Conservation Interactive Water Levels Mapping Application

PROJECT:

VERONA SERVICING MASTER PLAN

VERONA, SOUTH FRONTENAC, ONTARIO

DRAWING:

FLOW MONITORING STATIONS ALONG NAPANEE RIVER

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FIGURE 7

File Location: P:\32000\32106-001 - Verona Housing Class EA\03-Production\07-Plan\32106-000_Monitoring.mxd

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6.2.2 Groundwater Supply

The groundwater in the Quinte Region is found at relatively shallow depth between 10 to 30 metres of the underlying rock. The depth of the water table in this region is often shallow, ranging from 2 to 3 metres below ground surface. It has been noted that deeper aquifers are generally limited in the Quinte Region, which is generally less prone to drought. The drilling of wells to depths of greater than 30 metres has an increasing potential for naturally poor water quality with elevated levels of salt, minerals and natural gas, which is not considered suitable for normal domestic use.

Specifically for the Village of Verona, the Quinte Conservation has identified this area of having low groundwater stress levels (i.e., local water demand in Camden sub-watershed represents less than 10% of groundwater recharge) in the 2019 water budget modelling. This represents the potential for increased groundwater taking for the proposed Verona Housing development.

The properties within the Village of Verona are serviced by private drinking water wells and septic beds. During Phase 2 of the Master Plan, desktop analysis will be completed to review existing well pumping test results, well yield and compare to the water demand requirements.

7.0 Wastewater Disposal

There are two options for wastewater treatment and disposal for the proposed Verona Housing project, including:

- Subsurface wastewater disposal system (i.e., septic beds)
- Surface water disposal system (i.e., wastewater treatment facility with effluent discharge to Verona Lake)

Wastewater disposal options will be further reviewed and evaluated in Phase 2 of the Master Plan, in conjunction with the development of the drinking water source.

8.0 Problem/Opportunity Statement

Based on the work completed during Phase 1 of the Master Plan process, the following Problem/Opportunity Statement has been developed:

> The Township of South Frontenac plans to develop two municipally owned land parcels in the Village of Verona for mixed housing use. There is currently no municipal water and wastewater services in the Village, and that existing services are provided through private well and septic beds. The Township is developing an approach to the municipal water and wastewater services to allow the proposed development to move forward. In developing the preferred servicing solution, there is an opportunity to consider impacts to neighboring properties, impacts to natural and social environment, infrastructure spending, operation and maintenance effort, climate change, and growth opportunities.

9.0 Phase 2 Methodology and Next Steps

This Report has been developed to summarize the Phase 1 work undertaken as part of the Master Planning process. Phase 1 has been used to identify the problems and opportunities associated with the proposed municipal water and wastewater servicing for the Verona Housing Development and to clearly define the boundary conditions from legislative and regulatory framework perspective.

Phase 2 of the Master Plan process will involve further definition of water and wastewater servicing through review of existing water and wastewater inventory, preparation of supporting studies (including desktop review of natural heritage, hydrogeological information, heritage and archaeology screening, etc.), identification of servicing constraints, evaluation of high-level water/wastewater servicing options, and public consultation. More specifically, the following high-level servicing options have been identified and will be further evaluated in Phase 2:

- Option 1 – Do Nothing
- Option 2 – Onsite Groundwater Well and Onsite Septic System
- Option 3 – Onsite Surface Water Treatment and Onsite Septic System
- Option 4 – Offsite Groundwater Well and Onsite Septic System
- Option 5 – Onsite Groundwater Well and Wastewater Treatment Discharging to Verona Lake

10.0 Limitations

This report has been prepared by J.L. Richards & Associates Limited for the Township of South Frontenac's exclusive use. Its discussions and conclusions are summary in nature and cannot properly be used, interpreted or extended to other purposes without a detailed understanding and discussions with the client as to its mandated purpose, scope and limitations. This report is based on information, drawings, data, or reports provided by the named client, its agents, and certain other suppliers or third parties, as applicable, and relies upon the accuracy and completeness of such information. Any inaccuracy or omissions in information provided, or changes to applications, designs, or materials may have a significant impact on the accuracy, reliability, findings, or conclusions of this report.

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ENGINEERS · ARCHITECTS · PLANNERS

SITE PLAN LEGEND

- EXISTING ELEVATION
- PROPOSED ELEVATION
- TOP OF STRUCTURE (T.O.S.)
- TOP OF WALL (T.O.W.)
- TOP OF CURB (T.O.C.)
- VEHICULAR EXIT/ENTRANCE
- PEDESTRIAN EXIT/ENTRANCE
- PRIMARY RES ENTRANCE
- EXISTING EXTERIOR TO REMAIN
- NEW WALLS
- ITEM ABOVE
- (S) SCREEN REF. #
- (W) WALL TYPE
- (D) DOOR REF #

NOTES:
REFER TO CONSULTANTS DRAWINGS FORINFORMATION RELATING TO SITE SERVICING, GRADING AND LANDSCAPE. ALL ITEMS NEW CONSTRUCTION UNLESS NOTED OTHERWISE

Abbreviations

AD	AREA DRAIN
CACF	CENTRAL ALARM CONTROL FACILITY
CB	CATCH BASIN
FH	FIRE HYDRANT
FD	FLOOR DRAIN
HB	HOSE BIB
HLP	HYDRO LIGHT POLE
MH	MAN HOLE
TLS	TRAFFIC LIGHT STANDARD

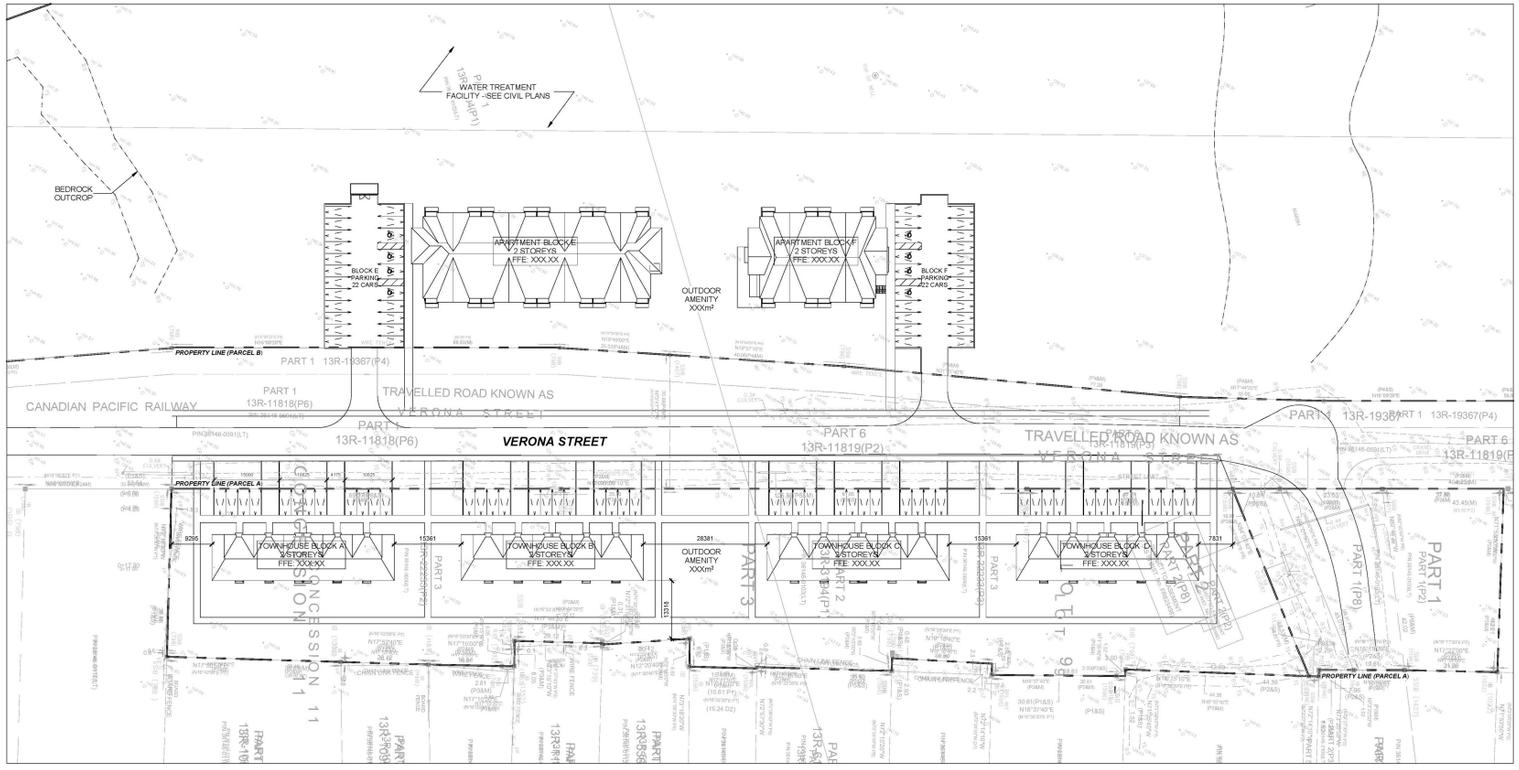
SITE PLAN INFORMATION TAKEN FROM :

PLAN OF SURVEY OF PART OF LOAT 9 CONCESSION 11, TOWNSHIP OF SOUTH FRONTENAC.
BY HOPKINS CHITTY LAND SURVEYORS INC, JULY 23, 2024

XXX.XXm = 000 ESTABLISHED GRADE

SITE PLAN NOTES

1. THE BUILDING IS NOT SPRINKLERED
2. SIDEWALKS AND BOULEVARDS WITHIN THE RIGHT OF WAY TO HAVE A MINIMUM 2% AND MAXIMUM 4% SLOPE TOWARDS THE ROADWAY AND CONSTRUCT TO TOWN OF NEWMARKET'S STANDARD REQUIREMENTS.
3. REFER TO SITE SERVICING PLAN, FOR SEWER AND WATER SERVICE INFORMATION.
4. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGNS, ETC. ALONG THE DEVELOPMENT SITE FRONTAGE THAT ARE NO LONGER REQUIRED ARE TO BE REMOVED. THE BOULEVARD WITHIN THE PUBLIC RIGHT OF WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES ARE TO BE REINSTATED.
5. PROPOSED ACCESS TO THE DRIVEWAY FOR THIS PROJECT TO BE DESIGNED IN ACCORDANCE WITH OPSD 350.010 FOR COMBINED CURB AND SIDEWALK VEHICULAR ENTRANCES.
6. TREE PROTECTION NOTE: THE APPLICANT IS RESPONSIBLE FOR ENSURING THAT TREE PROTECTION HOARDING IS MAINTAINED THROUGHOUT ALL PHASES OF DEMOLITION AND CONSTRUCTION IN THE LOCATION AND CONDITION AS APPROVED BY THE TOWN. NO MATERIALS (BUILDING MATERIALS, SOIL, ETC.) MAY BE STOCKPILED WITHIN THE AREA OF HOARDING. FAILURE TO MAINTAIN THE HOARDING AS ORIGINALLY APPROVED OR THE STORAGE OF MATERIALS WITHIN THE HOARDING WILL BE CAUSE FOR THE LETTER OF CREDIT TO BE HELD FOR THREE YEARS FOLLOWING COMPLETION OF ALL SITE WORKS. HOARDING MUST BE INSPECTED PRIOR TO THE REMOVAL OF ANY TREE HOARDING FROM THE SITE.
7. PARKING SPACES RESERVED FOR PEOPLE WITH DISABILITIES MUST BE IDENTIFIED BY A SIGN, INSTALLED AT THE APPLICANT'S EXPENSE, IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS.
8. THE STRUCTURAL DESIGN OF ANY RETAINING WALL OVER 0.6 M IN HEIGHT OR ANY RETAINING WALL LOCATED ON A PROPERTY LINE IS TO BE SHOWN ON THE SITE GRADING PLAN FOR THIS PROJECT AND IS TO BE APPROVED BY THE CONSULTING ENGINEER FOR THE PROJECT.
9. CONTINUOUS 15 CM HIGH BARRIER TYPE POURED CONCRETE CURBING WILL BE PROVIDED BETWEEN ALL ASPHALT AND LANDSCAPED AREAS THROUGHOUT THE SITE.



1 / A100 SITE PLAN
1 : 500

ISSUE RECORD

REVISION RECORD

NORTH

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TORONTO CANADA M5V 1P9
+1 416 599 9729
WWW.RAWDESIGN.CA

24070

VERONA ST, SOUTH FRONTENAC, ON

VERONA HOUSING

2B DEVELOPMENTS

SITE PLAN

SCALE: As indicated

A100

1/21/2025 3:49:36 PM

Appendix C

Species at Risk Screening

Appendix: Species of Conservation Concern

Frontenac

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Amphibian	Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield population)	*Pseudacris maculata pop. 1*	THR	No Status	S3	The Western Chorus Frog is small with a dark stripe running through its eye and a light stripe underneath (3). 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 and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Bank Swallow	*Riparia riparia*	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Barn Swallow	*Hirundo rustica*	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).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Black Tern	*Chlidonias niger*	No Status	SC	S3B,S4M	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Bobolink	*Dolichonyx oryzivorus*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Canada Warbler	*Cardellina canadensis*	THR	SC	S5B	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. are on or near the ground and used only once. Nests are on or near the ground and used only once. They are well-concealed bydense, low vegetation (e.g., moss hummocks, upturned tree roots, small hillocks with deep leaf litter and dense saplings) (6).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Cerulean Warbler	*Setophaga cerulea*	END	THR	S2B	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 (5).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Chimney Swift	*Chaetura pelagica*	THR	THR	S3B	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Common Nighthawk	*Chordeiles minor*	SC	SC	S4B	The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and 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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Eastern Meadowlark	*Sturnella magna*	THR	THR	S4B,S3N	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	SC	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).	Yes: on-site and adjacent lands	Incidental observation on-site and adjacent lands	Potential significant wildlife habitat on-site

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Bird	Eastern Wood-Pewee	*Contopus virens*	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	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Bird	Evening Grosbeak	*Coccothraustes vespertinus*	SC	SC	S4	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Golden Winged Warbler	*Vermivora chrysoptera*	THR	SC	S3B	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Grasshopper Sparrow	*Ammodramus savannarum*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Henslow's Sparrow	*Ammodramus henslowii*	END	END	S1B	Henslow's Sparrow is a small, secretive bird with chestnut brown wings, a patterned olive-green head, and a black and brown streaked back. It is found in large fields with tall grass, a dense litter layer, and standing dead vegetation. They use undisturbed areas with dense living grasses, avoiding areas that have been grazed or burned. As a ground nester, continuous areas of dense, tall grasslands that have not been invaded by shrubs are required to support its population (1).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	King Rail	*Rallus elegans*	END	END	S1B	The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Least Bittern	*Ixobrychus exilis*	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 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. Although Least Bitterns usually nest in larger marshes territorial individuals have been found in marshes as small as 0.4 ha. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (14).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Loggerhead Shrike	*Lanius ludovicianus*	END	END	S1B	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Louisiana Waterthrush	*Parkesia motacilla*	THR	THR	S2B	The Louisiana Waterthrush is a large wood warbler with brown upper parts, cream-coloured breasts and flanks with dark streaks, and a long bill. It is typically found along fast moving streams and creeks, in deeply forested ravines. It nests along stream banks, in the roots of fallen trees, and under logs and other large woody debris. Although less frequently, the Louisiana Waterthrush has been known to inhabit heavily wooded, deciduous swamps and open water areas, In Ontario, its breeding ground is mostly found in woodlands along Lake Erie and along the Niagara Escarpment (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Olive-sided Flycatcher	*Contopus cooperi*	SC	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Peregrine Falcon	*Falco peregrinus*	SC	SC	S4	The Peregrine Falcon is a bird of prey with a slate blue back, cream-coloured chest with dark markings, and pointed wings spanning around 1 m. It also has bright yellow feet and legs. This species can be found nesting on tall, steep cliff ledges close to large bodies of water. They prefer open habitats such as wetlands, tundra, savanna, sea coasts and mountain meadows for hunting , but may also be found above open forests. This species has also adapted well to living and nesting in urban areas, and has been documented using the ledges of tall buildings and other tall man-made structures for perches and nesting (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Piping plover	*Charadrius melodus*	END	END	S1B	The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Bird	Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	S3	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well 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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Short-eared owl	*Asio flammeus*	SC	THR	S4?B,S2S3N	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 agriultural 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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Wood Thrush	*Hylocichla mustelina*	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Yellow Rail	*Coturnicops noveboracensis*	SC	SC	S3B	The Yellow Rail is a small, quail-like marsh bird with a short yellow or black bill, short tail, with yellowish and black streaks on its back and white wing patches. This species is mainly found in the Hudson Bay Lowlands region, and is only found in localized marshes in southern Ontario. It is a secretive bird that lives deep within the reeds, sedges, and marshes of shallow wetlands which nest on the ground in areas that have an overlying mat of dry vegetation that can be used for nest building (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Fish	American Eel	*Anguilla rostrata*	No Status	END	S1S2	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 (1).	No	Known to occur in the general area	No further consideration required
Fish	Bridle Shiner	*Ntoropis bifrenatus*	SC	SC	S2	The Bridle Shiner is a small minnow with a slender body growing up to six centimetres in length. It has a small mouth which extendas back to the lower edge of the eye. Adults are generally silvery, often with green-blue iridescence. The surface of the body is straw-coloured while the underside is silvery-white. Bridle Shiners also have a dark stripe that extends along the side o fhte body, but may be faint and difficult to see. They prefer clear, unpolluted streams, rivers and lakes with an abundance of aquatic vegetation. They prefer warm water habitats where the bottom is either sand, silt, or organic debris (1).	No	Known to occur in the general area	No further consideration required
Fish	Channel Darter (Lake Ontario population)	*Percina copelandi*	END	SC	S2	The Channel Darter, a member of the perch family, has a tan or olive coloured body with brown speckles on its back and dark markings on its sides. The species only grows between 3-7 cm in length. The Channel Darter typically lives in clean streams and lakes with either sandy or gravel bottoms. It prefers riffle areas with fast moving water during breeding season and calm, deeper water in the winter (1).	No	Known to occur in the general area	No further consideration required
Fish	Cutlip Minnow	*Exoglossum maxillingua*	SC	THR	S2	The Cutlip Minnow has an olive-brown body with a pale belly. Its snout is rounded, its mouth is downward facing, and its lower lip has three lobes. This species typically reaches 14 cm in length. The Cutlip Minnow lives in warmwater rivers and creeks with slow-moving water and either rocky or gravel bottoms (1).	No	Known to occur in the general area	No further consideration required
Fish	Lake Sturgeon (Great Lakes / St. Lawrence population)	*Acipenser fulvescens*	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 (2).	No	Known to occur in the general area	No further consideration required
Fish	Northern Sunfish (Great Lakes - Upper St. Lawrence population)	*Lepomis peltastes*	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
Fish	Pugnose Shiner	*Notropis anogenus*	THR	THR	S2	The Pugnose Shiner is a small, slender minnow reaching 5-6 cm in length. Its body is a silver colour with pale yellow markings on its back and dark stripe along its side. They also have small, upturned mouths and large eyes. The Pugnose Shiner inhabits lakes and calm poritons of rivers or creeks with clear water and sandy, mud, or organic bottoms, and preferably an abundance of aquatic vegetation (1).	No	Known to occur in the general area	No further consideration required
Fish	Silver Lamprey (Great Lakes - Upper St. Lawrence River population)	*Ichthyomyzon unicuspis*	SC	SC	S3	The Silver Lamprey is an eel-shaped fish growing from 9 to 39 cm long, with a sucking disc mouth and no jaws or paired fins. They can be differed from other lamprey species based on fin shapes and teeth arrangements. Their habitat requirements include clear water, the availability of fish hosts, and relatively clean beds of sand or organic debris (1).	No	Known to occur in the general area	No further consideration required

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Fish	Spotted Gar	*Lepisosteus oculatus*	END	END	S1	The Spotted Gar is grows to more than 50 cm long, has a long beak-like mouth, and sharp teeth. Its body is brown and covered in dark spots hile its belly is olive-grey coloured. The species inhabits calm, clear pools, lakes, and bays with abundant aquatic plants and soft mud bottoms (1).	No	Known to occur in the general area	No further consideration required
Insect	American Bumble Bee	*Bombus pensylvanicus*	SC	SC	S3S4	The American Bumble Bee is a medium to large-sized bumble bee, with a relatively long head and tongue compared to other bumble bee species in Canada. he American Bumble Bee can be found in a range of open habitats such as farmlands, meadows, and grasslands. This species usually nests above ground in dense mats of long grasses but has also been known to nest in abandoned rodent burrows and bird nests high above the ground. Like other bumble bees, American Bumble Bee queens spend the winter underground and in decomposing organic material such as rotting logs and compost.	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Insect	Monarch	*Danaus plexippus*	END	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	Known to occur in the general area	No further consideration required
Insect	West Virginia White	*Pieris virginiensis*	No Status	SC	S3	The West Viginia 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
Insect	Yellow-banded Bumble Bee	*Bombus terricola*	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 and coniferous 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). Their nest sites are often found underground in abandoned burrows or decomposing logs.	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Lichen	Pale-bellied Frost Lichen	*Physconia subpallida*	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).	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Mammal	Eastern Red Bat	*Lasiurus borealis*	No Status	END	S3	The Eastern Red Bat is distinguished by fur that is usually orange but varies from yellowish-red to yellowish-grey. White hairs or white-tipped hairs give a frosted appearance. Habitat preference for this species is highly generalized as they prefer either coniferous and deciduous forests of any age class. Roosting occurs among the foliage of trees and occasionally shrubs. Eastern Red Bat are long-distanced migrants, with some individuals miving hundreds or thousands of kilometres between summer and winter months. Little is known with respect to migration and hibernation (9).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Eastern Small-footed Myotis	*Myotis leibii*	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 (10). 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 (2).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Hoary Bat	*Lasiurus cinereus*	No Status	END	S3	The Hoary Bat is a large-bodied bat and is the largest bodied bat in Canada. It is identified by light fur around its face and neck and white-tipped hairs over most of its body. Hoary Bat is a migratory bat species that migrates long distances between summer breeding habitat and winter range. Typically, Hoary Bat roosts in cavities of trees, which can be found in a broad range of forested habitat types across Ontario (11).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Little Brown Myotis	*Myotis lucifugus*	END	END	S3	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 (12).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Northern Myotis	*Myotis septentrionalis*	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 (2).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Silver-haired Bat	*Lasionycteris noctivagans*	No Status	END	S3	The Silver-haired bat is a dark colored bat, with black skin membranes and black to dark brown fur. The fur often has grey or silver-frosted tips, giving it the silvery appearance for which it is named. This species primarily roosts under loose bark and in cavitiies of trees, making them reliant on habitat with large decaying trees available. Silver-haired Bats migrate south during the winter months and they may occasionally roost in buildings especially during migration when natural roosting sites are scarce (13).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Mammal	Tri-colored Bat	*Perimyotis subflavus*	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 (1). 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 (4).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mollusc	Eastern Pondmussel	*Ligumia nasuta*	SC	SC	S1	The Eastern Pondmussel is a freshwater mussel that can grow to 10 centimetres long. They must attach to a fish host, consuming nutrients off its body until becoming juvenile, but it is unknown which fish species act as hosts. Typically found in sheltered areas of lakes and in slow-moving areas of river and canals with sand or mud bottoms, the Eastern Pondmussel was once one of the most common mussels in the lower Great Lakes but there are now only two known populations in Canada: one in the delta of Lake St. Clair and the second in Lyn Creek, a small tributary of the upper St. Lawrence River (1).	No	Known to occur in the general area	No further consideration required
Mollusc	Rainbow Mussel	*Villosa iris*	SC	SC	S1	The Rainbow mussel shell exterior is yellow, green, or brown with many brokedn dark green lines while its interior is iridescent coloured. It has an elongated oval shape and grows up to 8 cm long. This species prefers small or medium rivers with a moderate to strong current. The Rainbow mussel is typically found in or near riffle areas in shallow (<1 m) water with either asandy, rocky, or gravel bottom (2). In Ontario, it is found in the Ausable, Bayfield, Detroit, Grand, Maitland, Moira, Niagara, Salmon, Saugeen, Sydenham, Thames and Trent rivers and in Lake St. Clair. It may no longer exist in the St. Clair, Detroit and Niagara rivers, and Lake Erie.	No	Known to occur in the general area	No further consideration required
Plant	American Ginseng	*Panax quinquefolius*	END	THR	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	American Water-willow	*Justicia americana*	THR	THR	S2	The American Water-willow is an aquatic plant growing between 20 to 100 cm high with white or pale tube-shaped violet flowers with purple on its lower lip. It also bears a capsule containing two to four beige seeds. This plant can grow along shores, in the water of streams, rivers, lakes, ditches, and wetlands, with an underlying subsoil of gravel, sand, or organic matter. The American Water-willow can tolerate wet soils and up to 1.2 m of water, but tends to require periodic flooding and waves to reduce its competition (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	Black Ash	*Fraxinus nigra*	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 and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed habitat for endangered or threatened species on-site
Plant	Blunt-lobed Woodsia	*Woodsia obtusa*	THR	END	S1	The Blunt-lobed Woodsia is a small to medium fern with blunt, rounded lobes on its vivid green leaves called fronds which may reach 60 cm in length and 30 cm in width. It grows in relatively shallow soil over bedrock with widely scattered mid-sized deciduous trees such as Sugar Maples, Oaks, White Ash and Ironwood. In Ontario, the species grows in south-facing locations with warmer microclimates found only in sites along the Frontenac Axis (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	Broad Beech Fern	*Phegopteris hexagonoptera*	No Status	SC	S3	The Broad Beech Fern can grow to a height of 50 cm or more and has a creeping, scaly root (2). The fern has large divided leaves called fronds which grow from 25 to 75 cm long and triagular leaf blades. The Broad Beech Fern perfers rich, moist soils in deciduous forests, usually in full shade and often dominated by Maple and Beech trees. In Ontario, it is found in southern Muskoka, along Lake Erie, and in the eastern Lake Ontario - St Lawrence River region (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	Butternut	*Juglans cinerea*	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	Confirmed habitat on-site through targeted surveys	Confirmed habitat for endangered or threatened species on-site
Plant	Purple Twayblade	*Liparis liliifolia*	THR	THR	S2S3	The Purple Twayblade is a small orchid with two broad, shiny leaves at the base of the plant and a single stem from which mauve-purple flowers cluster. It can be found in a variety of habitats including open woodlands, mixed deciduous forests, shrub thickets, deciduous swamps, and coniferous plantations. It requires partial, but can not tolerate full, shade and therefore depends on natural disturbances to keep its habitat relatively open (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Blanding's Turtle	*Emydoidea blandingii*	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Reptile	Common Five-lined Skink (Southern Shield population)	*Plestiodon fasciatus*	SC	SC	S3	The Common Five-lined Skink is a slender lizard growing to between 14 and 19 centimetres in total length. Young adults are glossy black with five cream-yellow stripes down the back that merge and become bright blue or blue-grey on the tail. Older individuals gradually fade to a uniform bronze along the back and sides, and their stripes often remain faintly visible. . 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 (3).	No	Known to occur in the general area	No further consideration required
Reptile	Eastern Milksnake	*Lampropeltis triangulum*	SC	No Status	S4	The Eastern Milksnake's colouration is grey or tan with reddish alternating blotches otlines in black along its back and sides (3). 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 (3).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Reptile	Eastern Musk Turtle	*Sternotherus odoratus*	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 (3). 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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Eastern Ribbonsnake	*Thamnophis sauritus*	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Gray Ratsnake (Frontenac Axis population)	*Pantherophis spiloides*	THR	THR	S3	The Gray Ratsnake, which can grow to 2.5 m in length, is black with faint patterning and a white checkerboard patterned belly (3). The Frontenac Axis population requires a variety of habitat types including deciduous forests, wetlands, lakes, rocky outcrops and agricultural fields. They may spend the summer in more open areas such as old fields and meadows (3).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Midland Painted Turtle	*Chrysemys picta marginata*	SC	No Status	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 wetlands with very low oxygen (7).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Reptile	Northern Map Turtle	*Graptemys geographica*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Snapping Turtle	*Chelydra serpentina*	SC	SC	S4	The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (3). 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).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Reptile	Spotted Turtle	*Clemmys guttata*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required

Appendix C: Species of Conservation Concern

Frontenac

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Amphibian	Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield population)	*Pseudacris maculata pop. 1*	THR	No Status	S3	The Western Chorus Frog is small with a dark stripe running through its eye and a light stripe underneath (3). 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 and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Bank Swallow	*Riparia riparia*	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Barn Swallow	*Hirundo rustica*	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).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Black Tern	*Chlidonias niger*	No Status	SC	S3B,S4M	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Bobolink	*Dolichonyx oryzivorus*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Canada Warbler	*Cardellina canadensis*	THR	SC	S5B	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. are on or near the ground and used only once. Nests are on or near the ground and used only once. They are well-concealed bydense, low vegetation (e.g., moss hummocks, upturned tree roots, small hillocks with deep leaf litter and dense saplings) (6).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Cerulean Warbler	*Setophaga cerulea*	END	THR	S2B	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 (5).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Chimney Swift	*Chaetura pelagica*	THR	THR	S3B	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Common Nighthawk	*Chordeiles minor*	SC	SC	S4B	The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and 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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Eastern Meadowlark	*Sturnella magna*	THR	THR	S4B,S3N	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	SC	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).	Yes: on-site and adjacent lands	Incidental observation on-site and adjacent lands	Potential significant wildlife habitat on-site

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Bird	Eastern Wood-Pewee	*Contopus virens*	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	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Bird	Evening Grosbeak	*Coccothraustes vespertinus*	SC	SC	S4	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Golden Winged Warbler	*Vermivora chrysoptera*	THR	SC	S3B	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Grasshopper Sparrow	*Ammodramus savannarum*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Henslow's Sparrow	*Ammodramus henslowii*	END	END	S1B	Henslow's Sparrow is a small, secretive bird with chestnut brown wings, a patterned olive-green head, and a black and brown streaked back. It is found in large fields with tall grass, a dense litter layer, and standing dead vegetation. They use undisturbed areas with dense living grasses, avoiding areas that have been grazed or burned. As a ground nester, continuous areas of dense, tall grasslands that have not been invaded by shrubs are required to support its population (1).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	King Rail	*Rallus elegans*	END	END	S1B	The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Least Bittern	*Ixobrychus exilis*	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 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. Although Least Bitterns usually nest in larger marshes territorial individuals have been found in marshes as small as 0.4 ha. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (14).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Loggerhead Shrike	*Lanius ludovicianus*	END	END	S1B	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Louisiana Waterthrush	*Parkesia motacilla*	THR	THR	S2B	The Louisiana Waterthrush is a large wood warbler with brown upper parts, cream-coloured breasts and flanks with dark streaks, and a long bill. It is typically found along fast moving streams and creeks, in deeply forested ravines. It nests along stream banks, in the roots of fallen trees, and under logs and other large woody debris. Although less frequently, the Louisiana Waterthrush has been known to inhabit heavily wooded, deciduous swamps and open water areas, In Ontario, its breeding ground is mostly found in woodlands along Lake Erie and along the Niagara Escarpment (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Olive-sided Flycatcher	*Contopus cooperi*	SC	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Peregrine Falcon	*Falco peregrinus*	SC	SC	S4	The Peregrine Falcon is a bird of prey with a slate blue back, cream-coloured chest with dark markings, and pointed wings spanning around 1 m. It also has bright yellow feet and legs. This species can be found nesting on tall, steep cliff ledges close to large bodies of water. They prefer open habitats such as wetlands, tundra, savanna, sea coasts and mountain meadows for hunting , but may also be found above open forests. This species has also adapted well to living and nesting in urban areas, and has been documented using the ledges of tall buildings and other tall man-made structures for perches and nesting (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Piping plover	*Charadrius melodus*	END	END	S1B	The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required

TYPE	COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
			SARA	SARO	S-RANK				
Bird	Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	S3	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well 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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Short-eared owl	*Asio flammeus*	SC	THR	S4?B,S2S3N	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 agriultural 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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Wood Thrush	*Hylocichla mustelina*	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Bird	Yellow Rail	*Coturnicops noveboracensis*	SC	SC	S3B	The Yellow Rail is a small, quail-like marsh bird with a short yellow or black bill, short tail, with yellowish and black streaks on its back and white wing patches. This species is mainly found in the Hudson Bay Lowlands region, and is only found in localized marshes in southern Ontario. It is a secretive bird that lives deep within the reeds, sedges, and marshes of shallow wetlands which nest on the ground in areas that have an overlying mat of dry vegetation that can be used for nest building (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Fish	American Eel	*Anguilla rostrata*	No Status	END	S1S2	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 (1).	No	Known to occur in the general area	No further consideration required
Fish	Bridle Shiner	*Ntoropis bifrenatus*	SC	SC	S2	The Bridle Shiner is a small minnow with a slender body growing up to six centimetres in length. It has a small mouth which extendas back to the lower edge of the eye. Adults are generally silvery, often with green-blue iridescence. The surface of the body is straw-coloured while the underside is silvery-white. Bridle Shiners also have a dark stripe that extends along the side o fhte body, but may be faint and difficult to see. They prefer clear, unpolluted streams, rivers and lakes with an abundance of aquatic vegetation. They prefer warm water habitats where the bottom is either sand, silt, or organic debris (1).	No	Known to occur in the general area	No further consideration required
Fish	Channel Darter (Lake Ontario population)	*Percina copelandi*	END	SC	S2	The Channel Darter, a member of the perch family, has a tan or olive coloured body with brown speckles on its back and dark markings on its sides. The species only grows between 3-7 cm in length. The Channel Darter typically lives in clean streams and lakes with either sandy or gravel bottoms. It prefers riffle areas with fast moving water during breeding season and calm, deeper water in the winter (1).	No	Known to occur in the general area	No further consideration required
Fish	Cutlip Minnow	*Exoglossum maxillingua*	SC	THR	S2	The Cutlip Minnow has an olive-brown body with a pale belly. Its snout is rounded, its mouth is downward facing, and its lower lip has three lobes. This species typically reaches 14 cm in length. The Cutlip Minnow lives in warmwater rivers and creeks with slow-moving water and either rocky or gravel bottoms (1).	No	Known to occur in the general area	No further consideration required
Fish	Lake Sturgeon (Great Lakes / St. Lawrence population)	*Acipenser fulvescens*	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 (2).	No	Known to occur in the general area	No further consideration required
Fish	Northern Sunfish (Great Lakes - Upper St. Lawrence population)	*Lepomis peltastes*	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
Fish	Pugnose Shiner	*Notropis anogenus*	THR	THR	S2	The Pugnose Shiner is a small, slender minnow reaching 5-6 cm in length. Its body is a silver colour with pale yellow markings on its back and dark stripe along its side. They also have small, upturned mouths and large eyes. The Pugnose Shiner inhabits lakes and calm poritons of rivers or creeks with clear water and sandy, mud, or organic bottoms, and preferably an abundance of aquatic vegetation (1).	No	Known to occur in the general area	No further consideration required
Fish	Silver Lamprey (Great Lakes - Upper St. Lawrence River population)	*Ichthyomyzon unicuspis*	SC	SC	S3	The Silver Lamprey is an eel-shaped fish growing from 9 to 39 cm long, with a sucking disc mouth and no jaws or paired fins. They can be differed from other lamprey species based on fin shapes and teeth arrangements. Their habitat requirements include clear water, the availability of fish hosts, and relatively clean beds of sand or organic debris (1).	No	Known to occur in the general area	No further consideration required
Fish	Spotted Gar	*Lepisosteus oculatus*	END	END	S1	The Spotted Gar is grows to more than 50 cm long, has a long beak-like mouth, and sharp teeth. Its body is brown and covered in dark spots hile its belly is olive-grey coloured. The species inhabits calm, clear pools, lakes, and bays with abundant aquatic plants and soft mud bottoms (1).	No	Known to occur in the general area	No further consideration required

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			SARA	SARO	S-RANK				
Insect	American Bumble Bee	*Bombus pensylvanicus*	SC	SC	S3S4	The American Bumble Bee is a medium to large-sized bumble bee, with a relatively long head and tongue compared to other bumble bee species in Canada. he American Bumble Bee can be found in a range of open habitats such as farmlands, meadows, and grasslands. This species usually nests above ground in dense mats of long grasses but has also been known to nest in abandoned rodent burrows and bird nests high above the ground. Like other bumble bees, American Bumble Bee queens spend the winter underground and in decomposing organic material such as rotting logs and compost.	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Insect	Monarch	*Danaus plexippus*	END	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	Known to occur in the general area	No further consideration required
Insect	West Virginia White	*Pieris virginiensis*	No Status	SC	S3	The West Viginia 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
Insect	Yellow-banded Bumble Bee	*Bombus terricola*	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 and coniferous 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). Their nest sites are often found underground in abandoned burrows or decomposing logs.	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Lichen	Pale-bellied Frost Lichen	*Physconia subpallida*	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).	Yes: on-site and adjacent lands	Known to occur in the general area	No further consideration required
Mammal	Eastern Red Bat	*Lasiurus borealis*	No Status	END	S3	The Eastern Red Bat is distinguished by fur that is usually orange but varies from yellowish-red to yellowish-grey. White hairs or white-tipped hairs give a frosted appearance. Habitat preference for this species is highly generalized as they prefer either coniferous and deciduous forests of any age class. Roosting occurs among the foliage of trees and occasionally shrubs. Eastern Red Bat are long-distanced migrants, with some individuals miving hundreds or thousands of kilometres between summer and winter months. Little is known with respect to migration and hibernation (9).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Eastern Small-footed Myotis	*Myotis leibii*	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 (10). 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 (2).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Hoary Bat	*Lasiurus cinereus*	No Status	END	S3	The Hoary Bat is a large-bodied bat and is the largest bodied bat in Canada. It is identified by light fur around its face and neck and white-tipped hairs over most of its body. Hoary Bat is a migratory bat species that migrates long distances between summer breeding habitat and winter range. Typically, Hoary Bat roosts in cavities of trees, which can be found in a broad range of forested habitat types across Ontario (11).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Little Brown Myotis	*Myotis lucifugus*	END	END	S3	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 (12).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Northern Myotis	*Myotis septentrionalis*	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 (2).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Silver-haired Bat	*Lasionycteris noctivagans*	No Status	END	S3	The Silver-haired bat is a dark colored bat, with black skin membranes and black to dark brown fur. The fur often has grey or silver-frosted tips, giving it the silvery appearance for which it is named. This species primarily roosts under loose bark and in cavitiies of trees, making them reliant on habitat with large decaying trees available. Silver-haired Bats migrate south during the winter months and they may occasionally roost in buildings especially during migration when natural roosting sites are scarce (13).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA
Mammal	Tri-colored Bat	*Perimyotis subflavus*	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 (1). 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 (4).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Consideration required under the ESA

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			SARA	SARO	S-RANK				
Mollusc	Eastern Pondmussel	*Ligumia nasuta*	SC	SC	S1	The Eastern Pondmussel is a freshwater mussel that can grow to 10 centimetres long. They must attach to a fish host, consuming nutrients off its body until becoming juvenile, but it is unknown which fish species act as hosts. Typically found in sheltered areas of lakes and in slow-moving areas of river and canals with sand or mud bottoms, the Eastern Pondmussel was once one of the most common mussels in the lower Great Lakes but there are now only two known populations in Canada: one in the delta of Lake St. Clair and the second in Lyn Creek, a small tributary of the upper St. Lawrence River (1).	No	Known to occur in the general area	No further consideration required
Mollusc	Rainbow Mussel	*Villosa iris*	SC	SC	S1	The Rainbow mussel shell exterior is yellow, green, or brown with many brokedn dark green lines while its interior is iridescent coloured. It has an elongated oval shape and grows up to 8 cm long. This species prefers small or medium rivers with a moderate to strong current. The Rainbow mussel is typically found in or near riffle areas in shallow (<1 m) water with either asandy, rocky, or gravel bottom (2). In Ontario, it is found in the Ausable, Bayfield, Detroit, Grand, Maitland, Moira, Niagara, Salmon, Saugeen, Sydenham, Thames and Trent rivers and in Lake St. Clair. It may no longer exist in the St. Clair, Detroit and Niagara rivers, and Lake Erie.	No	Known to occur in the general area	No further consideration required
Plant	American Ginseng	*Panax quinquefolius*	END	THR	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	American Water-willow	*Justicia americana*	THR	THR	S2	The American Water-willow is an aquatic plant growing between 20 to 100 cm high with white or pale tube-shaped violet flowers with purple on its lower lip. It also bears a capsule containing two to four beige seeds. This plant can grow along shores, in the water of streams, rivers, lakes, ditches, and wetlands, with an underlying subsoil of gravel, sand, or organic matter. The American Water-willow can tolerate wet soils and up to 1.2 m of water, but tends to require periodic flooding and waves to reduce its competition (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	Black Ash	*Fraxinus nigra*	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 and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed habitat for endangered or threatened species on-site
Plant	Blunt-lobed Woodsia	*Woodsia obtusa*	THR	END	S1	The Blunt-lobed Woodsia is a small to medium fern with blunt, rounded lobes on its vivid green leaves called fronds which may reach 60 cm in length and 30 cm in width. It grows in relatively shallow soil over bedrock with widely scattered mid-sized deciduous trees such as Sugar Maples, Oaks, White Ash and Ironwood. In Ontario, the species grows in south-facing locations with warmer microclimates found only in sites along the Frontenac Axis (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	Broad Beech Fern	*Phegopteris hexagonoptera*	No Status	SC	S3	The Broad Beech Fern can grow to a height of 50 cm or more and has a creeping, scaly root (2). The fern has large divided leaves called fronds which grow from 25 to 75 cm long and triagular leaf blades. The Broad Beech Fern perfers rich, moist soils in deciduous forests, usually in full shade and often dominated by Maple and Beech trees. In Ontario, it is found in southern Muskoka, along Lake Erie, and in the eastern Lake Ontario - St Lawrence River region (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Plant	Butternut	*Juglans cinerea*	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	Confirmed habitat on-site through targeted surveys	Confirmed habitat for endangered or threatened species on-site
Plant	Purple Twayblade	*Liparis liliifolia*	THR	THR	S2S3	The Purple Twayblade is a small orchid with two broad, shiny leaves at the base of the plant and a single stem from which mauve-purple flowers cluster. It can be found in a variety of habitats including open woodlands, mixed deciduous forests, shrub thickets, deciduous swamps, and coniferous plantations. It requires partial, but can not tolerate full, shade and therefore depends on natural disturbances to keep its habitat relatively open (1).	No	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Blanding's Turtle	*Emydoidea blandingii*	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).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Common Five-lined Skink (Southern Shield population)	*Plestiodon fasciatus*	SC	SC	S3	The Common Five-lined Skink is a slender lizard growing to between 14 and 19 centimetres in total length. Young adults are glossy black with five cream-yellow stripes down the back that merge and become bright blue or blue-grey on the tail. Older individuals gradually fade to a uniform bronze along the back and sides, and their stripes often remain faintly visible. . 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 (3).	No	Known to occur in the general area	No further consideration required

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			SARA	SARO	S-RANK				
Reptile	Eastern Milksnake	*Lampropeltis triangulum*	SC	No Status	S4	The Eastern Milksnake's colouration is grey or tan with reddish alternating blotches otlines in black along its back and sides (3). 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 (3).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Reptile	Eastern Musk Turtle	*Sternotherus odoratus*	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 (3). 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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Eastern Ribbonsnake	*Thamnophis sauritus*	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	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Gray Ratsnake (Frontenac Axis population)	*Pantherophis spiloides*	THR	THR	S3	The Gray Ratsnake, which can grow to 2.5 m in length, is black with faint patterning and a white checkerboard patterned belly (3). The Frontenac Axis population requires a variety of habitat types including deciduous forests, wetlands, lakes, rocky outcrops and agricultural fields. They may spend the summer in more open areas such as old fields and meadows (3).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Midland Painted Turtle	*Chrysemys picta marginata*	SC	No Status	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 wetlands with very low oxygen (7).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Reptile	Northern Map Turtle	*Graptemys geographica*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Reptile	Snapping Turtle	*Chelydra serpentina*	SC	SC	S4	The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (3). 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).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Confirmed significant wildlife habitat on-site
Reptile	Spotted Turtle	*Clemmys guttata*	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).	Yes: adjacent lands only	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required

Appendix D

Photographic Log

Photo 1 Drainage feature on Verona Street West, April 2025.

Photo 2 Drainage feature on Verona Street East, April 2025.

Photo 3 Community 1 (FOD5-8), July 2025.

Photo 4 Community 2 (MAS3-1), June 2025.

Photo 5 Community 3 (SWT3-1), May 2025.

Photo 6 Community 4 (MAS3-1), July 2025.

Photo 7 Community 5 (SWT3-1), July 2025.

Photo 8 Community 6 (SWT3-1), May 2025.

Photo 9 Community 7 (FOD5-4), July 2025.

Photo 10 Community 8 (FOD4-2), July 2025.

Photo 11 Community 9 (FOD5-4), July 2025.

Photo 12 Community 10 (CUP3-1), July 2025.

Photo 13 Community 11 (CUP1-3), July 2025.

Appendix E

Vegetation Species List

Appendix E - Plant Species List

Scientific Name	Common Name	Status/Rarity			CC	CW	Vegetation Community										
		Federal	Provincial				1	2	3	4	5	6	7	8	9	10	11
		SARA	SARO	S-Rank			FOD5-8	MAS3-1	SWT3-1	MAS3-1	SWT3-1	SWT3-1	FOD5-4	FOD4-2	FOD5-4	CUP3-1	CUP1-3
Fagus grandifolia	American Beech	-	-	S4	6	3	X						X		X		
Staphylea trifolia	American Bladdernut	-	-	S4	7	0									X		
Amphicarpaea bracteata	American Hog-peanut	-	-	S5	4	0	X									X	X
Lycopus americanus	American Water-horehound	-	-	S5	4	-5		X									
Erigeron annuus	Annual Fleabane	-	-	S5	0	3											X
Carex stipata	Awl-fruited Sedge	-	-	S5	3	-5					X	X					
Populus balsamifera	Balsam Poplar	-	-	S5	4	-3								X			X
Tilia americana	Basswood	-	-	S5	4	3	X						X	X	X	X	X
Carex comosa	Bearded Sedge	-	-	S5	5	-5		X			X	X					
Carya cordiformis	Bitternut Hickory	-	-	S5	6	0	X						X	X	X		
Fraxinus nigra	Black Ash	-	END	S4	7	-3		X	X		X						
Prunus serotina	Black Cherry	-	-	S5	3	3	X						X	X	X		
Medicago lupulina	Black Medick	-	-	SNA	-	3										X	
Juglans nigra	Black Walnut	-	-	S4?	5	3										X	X
Carex intumescens	Bladder Sedge	-	-	S5	6	-3		X			X	X					
Sanguinaria canadensis	Bloodroot	-	-	S5	5	3							X	X	X		
Solidago caesia	Blue-stemmed Goldenrod	-	-	S5	5	3	X										
Sparganium eurycarpum	Broad-fruited Burreed	-	-	S5	3	-5		X									
Sagittaria latifolia	Broad-leaved Arrowhead	-	-	S5	4	-5		X			X	X					
Typha latifolia	Broad-leaved Cattail	-	-	S5	1	-5		X	X	X							
Circaea canadensis	Broad-leaved Enchanter's Nightshade	-	-	S5	2	3	X										
Cicuta bulbifera	Bulbous Water-hemlock	-	-	S5	5	-5		X									
Quercus macrocarpa	Bur Oak	-	-	S5	5	3							X		X		
Juglans cinerea	Butternut	END	END	S2?	6	3	X								X		
Symphyotrichum lateriflorum	Calico Aster	-	-	S5	3	0	X										
Geum canadense	Canada Avens	-	-	S5	3	0	X							X		X	X
Solidago canadensis	Canada Goldenrod	-	-	S5	1	3								X		X	
Lactuca canadensis	Canada Lettuce	-	-	S5	3	3											X
Prunus virginiana	Chokecherry	-	-	S5	2	3									X		
Taraxacum officinale	Common Dandelion	-	-	SNA	-	3										X	X
Asclepias syriaca	Common Milkweed	-	-	S5	0	5										X	
Zanthoxylum americanum	Common Prickly-ash	-	-	S5	3	3	X							X	X	X	
Phleum pratense	Common Timothy	-	-	SNA	-	3								X		X	X
Sium suave	Common Water-parsnip	-	-	S5	4	-5					X	X					
Artemisia vulgaris	Common Wormwood	-	-	SNA	-	5										X	X
Ranunculus sceleratus	Cursed Buttercup	-	-	S5	2	-5		X									
Carex pseudocyperus	Cyperus-like Sedge	-	-	S5	6	-5		X									
Scirpus atrovirens	Dark-green Bulrush	-	-	S5	3	-5		X									
Thalictrum dioicum	Early Meadow-rue	-	-	S5	6	3							X		X		
Ostrya virginiana	Eastern Hop-hornbeam	-	-	S5	4	3	X						X		X		
Ribes cynosbati	Eastern Prickly Gooseberry	-	-	S5	4	3	X						X		X		
Thuja occidentalis	Eastern White Cedar	-	-	S5	4	-3					X		X		X		
Pinus strobus	Eastern White Pine	-	-	S5	4	3							X	X	X		
Inula helenium	Elecampane	-	-	SNA	-	3	X									X	
Rhamnus cathartica	European Buckthorn	-	-	SNA	-	0	X							X		X	X
Hydrocharis morsus-ranae	European Frog-bit	-	-	SNA	-	-5					X						
Vincetoxicum rossicum	European Swallowwort	-	-	SNA	-	5							X	X	X	X	X
Glyceria striata	Fowl Mannagrass	-	-	S5	3	-5		X	X	X	X	X					
Carex vulpinoidea	Fox Sedge	-	-	S5	3	-5		X		X	X	X					
Alliaria petiolata	Garlic Mustard	-	-	SNA	-	0							X	X	X		
Carex gracillima	Graceful Sedge	-	-	S5	4	3								X			

Scientific Name	Common Name	Status/Rarity			CC	CW	Vegetation Community										
		Federal	Provincial				1	2	3	4	5	6	7	8	9	10	11
		SARA	SARO	S-Rank			FOD5-8	MAS3-1	SWT3-1	MAS3-1	SWT3-1	SWT3-1	FOD5-4	FOD4-2	FOD5-4	CUP3-1	CUP1-3
Iris versicolor	Harlequin Blue Flag	-	-	S5	5	-5		X		X							
Geranium robertianum	Herb-Robert	-	-	S5	2	3							X		X		
Agrimonia gryposepala	Hooked Agrimony	-	-	S5	2	3	X										
Carex lupulina	Hop Sedge	-	-	S5	6	-5				X							
Arisaema triphyllum	Jack-in-the-pulpit	-	-	S5	5	-3	X										
Carex lacustris	Lake Sedge	-	-	S5	5	-5				X							
Maianthemum racemosum	Large False Solomon's Seal	-	-	S5	4	3	X						X	X	X		
Eurybia macrophylla	Large-leaved Aster	-	-	S5	5	5							X	X	X		
Populus grandidentata	Large-toothed Aspen	-	-	S5	5	5	X							X			
Acer negundo	Manitoba Maple	-	-	S5	0	0										X	
Pilosella caespitosa	Meadow Hawkweed	-	-	SNA	-	5											X
Typha angustifolia	Narrow-leaved Cattail	-	-	SNA	-	-5		X	X	X							
Diervilla lonicera	Northern Bush-honeysuckle	-	-	S5	5	5							X		X		
Adiantum pedatum	Northern Maidenhair Fern	-	-	S5	7	3	X										
Quercus rubra	Northern Red Oak	-	-	S5	6	3	X						X		X	X	
Triosteum aurantiacum	Orange-fruit Horse-gentian	-	-	S4S5	7	5							X		X		
Dactylis glomerata	Orchard Grass	-	-	SNA	-	3										X	
Betula papyrifera	Paper Birch	-	-	S5	2	3	X						X	X	X		X
Toxicodendron radicans	Poison Ivy	-	-	S5	2	0	X						X	X	X	X	X
Carex hirtifolia	Pubescent Sedge	-	-	S4S5	5	5				X							
Lythrum salicaria	Purple Loosestrife	-	-	SNA	-	-5		X		X	X	X					
Rubus odoratus	Purple-flowering Raspberry	-	-	S5	3	5	X										
Symphyotrichum puniceum	Purple-stemmed Aster	-	-	S5	6	-5			X	X							
Bidens connata	Purple-stemmed Beggarticks	-	-	S4?	5	-3					X	X					
Fraxinus pennsylvanica	Red Ash	-	-	S4	3	-3					X						
Actaea rubra	Red Baneberry	-	-	S5	6	3	X								X		
Trifolium pratense	Red Clover	-	-	SNA	-	3								X		X	
Aquilegia canadensis	Red Columbine	-	-	S5	5	3									X		
Acer rubrum	Red Maple	-	-	S5	4	0	X							X			
Pinus resinosa	Red Pine	-	-	S5	8	3										X	X
Rubus idaeus	Red Raspberry	-	-	S5	2	3	X										X
Cornus sericea	Red-osier Dogwood	-	-	S5	2	-3		X	X		X	X					
Phalaris arundinacea	Reed Canarygrass	-	-	S5	0	-3			X	X							
Vitis riparia	Riverbank Grape	-	-	S5	0	0	X									X	X
Polypodium virginianum	Rock Polypody	-	-	S5	7	5	X						X		X		
Cornus rugosa	Round-leaved Dogwood	-	-	S5	6	5							X		X		
Pinus sylvestris	Scots Pine	-	-	SNA	-	3											X
Onoclea sensibilis	Sensitive Fern	-	-	S5	4	-3	X	X		X	X			X			
Pyrola elliptica	Shinleaf	-	-	S5	5	5	X										
Cornus obliqua	Silky Dogwood	-	-	S5	2	-3					X	X					
Acer saccharinum	Silver Maple	-	-	S5	5	-3		X			X	X					
Lemna minor	Small Duckweed	-	-	S5	5	-5		X			X						
Alnus incana ssp. rugosa	Speckled Alder	-	-	S5	6	-3			X		X	X					
Dryopteris carthusiana	Spinulose Wood Fern	-	-	S5	5	-3	X						X		X		
Geranium maculatum	Spotted Geranium	-	-	S5	6	3							X		X		
Impatiens capensis	Spotted Jewelweed	-	-	S5	4	-3			X		X	X					
Eutrochium maculatum	Spotted Joe Pye Weed	-	-	S5	3	-5			X	X	X	X					
Carex sprengelii	Sprengel's Sedge	-	-	S5	6	0									X		
Rhus typhina	Staghorn Sumac	-	-	S5	1	3											X
Urtica dioica	Stinging Nettle	-	-	SNA	-	0		X			X	X					
Acer saccharum	Sugar Maple	-	-	S5	4	3	X						X	X	X	X	X
Rumex verticillatus	Swamp Dock	-	-	S4	7	-5		X									

Scientific Name	Common Name	Status/Rarity			CC	CW	Vegetation Community										
		Federal	Provincial				1	2	3	4	5	6	7	8	9	10	11
		SARA	SARO	S-Rank			FOD5-8	MAS3-1	SWT3-1	MAS3-1	SWT3-1	SWT3-1	FOD5-4	FOD4-2	FOD5-4	CUP3-1	CUP1-3
Decodon verticillatus	Swamp Loosestrife	-	-	S5	7	-5		X									
Asclepias incarnata	Swamp Milkweed	-	-	S5	6	-5		X									
Lonicera tatarica	Tatarian Honeysuckle	-	-	SNA	-	3	X							X	X		X
Galium triflorum	Three-flowered Bedstraw	-	-	S5	4	3							X	X	X	X	X
Populus tremuloides	Trembling Aspen	-	-	S5	2	0	X							X			X
Vicia cracca	Tufted Vetch	-	-	SNA	-	5								X		X	X
Lysimachia thyrsiflora	Tufted Yellow Loosestrife	-	-	S5	7	-5		X									
Carex stricta	Tussock Sedge	-	-	S5	4	-5		X									
Oxalis stricta	Upright Yellow Wood-sorrel	-	-	SNA	-	3	X										
Parthenocissus quinquefolia	Virginia Creeper	-	-	S4?	6	3	X						X		X	X	X
Fraxinus americana	White Ash	-	-	S4	4	3	X						X	X	X	X	X
Ulmus americana	White Elm	-	-	S5	3	-3			X		X	X		X		X	X
Spiraea alba	White Meadowsweet	-	-	S5	3	-3						X					
Quercus alba	White Oak	-	-	S5	6	3	X						X		X		
Picea glauca	White Spruce	-	-	S5	6	3										X	
Salix alba	White Willow	-	-	SNA	-	-3		X	X		X	X					
Oxalis montana	White Wood-sorrel	-	-	S5	7	3	X										
Calla palustris	Wild Calla	-	-	S5	8	-5		X									
Maianthemum canadense	Wild Lily-of-the-valley	-	-	S5	5	3	X						X	X			
Aralia nudicaulis	Wild Sarsaparilla	-	-	S5	4	3	X						X		X		
Tragopogon dubius	Yellow Goatsbeard	-	-	SNA	-	5											X
Erythronium americanum	Yellow Trout-lily	-	-	S5	5	5	X						X		X		
Solidago flexicaulis	Zigzag Goldenrod	-	-	S5	6	3								X			

Appendix F

Bird Species List

Appendix F - Bird Species List

Common Name	Scientific Name	Rarity/Status			Breeding Bird Survey Stations														Highest Breeding Evidence on the Site
		Federal	Provincial		BBS1		BBS2		BBS3		BBS4		BBS5		BBS6		BBS7		
					Comm 10: CUP3-1		Comm 11: CUP1-3		Comm 1: FOD 5-8		Comm 3: SWT3-1		Comm 2: MAS3-1		Comm 7: FOD5-4		Comm 9: FOD5-4		
		SARA	SARO	S-Rank	May 28	June 11	May 28	June 11	May 28	June 11	May 28	June 11	May 28	June 11	May 28	June 11	May 28	June 11	
American Crow	*Corvus brachyrhynchos*	-	-	S5B							H	X						X	H
American Goldfinch	*Spinus tristis*	-	-	S5B	S		S		S		S		S	T					T
American Redstart	*Setophaga ruticilla*	-	-	S5B	S		S		S		M						M	T	T
American Robin	*Turdus migratorius*	-	-	S5B			S	T	S	T	S						S	T	T
Baltimore Oriole	*Icterus galbula*	-	-	S4B														S	S
Black-and-white Warbler	*Mniotilta varia*	-	-	S5B				S			S		S			S			S
Black-capped Chickadee	*Poecile atricapillus*	-	-	S5	S	T		M	S			M		M			M		T
Black-throated Blue Warbler	*Setophaga caerulescens*	-	-	S5B					S										S
Blue Jay	*Cyanocitta cristata*	-	-	S5	S	T					S				S				T
Blue-headed Vireo	*Vireo solitarius*	-	-	S5B														S	S
Cedar Waxwing	*Bombycilla cedrorum*	-	-	S5B	X	M		S											M
Chestnut-sided Warbler	*Setophaga pensylvanica*	-	-	S5B					S				M			S			M
Chipping Sparrow	*Spizella passerina*	-	-	S5B		S	S	T		S									S
Common Grackle	*Quiscalus quiscula*	-	-	S5B						NB	M			NB				S	NB
Common Yellowthroat	*Geothlypis trichas*	-	-	S5B		S		S	S	T		M	M	M		M			T
Downy Woodpecker	*Picoides pubescens*	-	-	S5							H								H
Eastern Phoebe	*Sayornis phoebe*	-	-	S5B			X										S		S
Eastern Wood-pewee	*Contopus virens*	SC	SC	S4B						S				S					S
Gray Catbird	*Dumetella carolinensis*	-	-	S4B														S	S
Great Crested Flycatcher	*Myiarchus crinitus*	-	-	S4B				S	S		S		S		S			S	S
Northern Cardinal	*Cardinalis cardinalis*	-	-	S5				S	S	S			S		S			S	S
Northern Flicker	*Colaptes auratus*	-	-	S4B											S				S
Red-eyed Vireo	*Vireo olivaceus*	-	-	S5B	S	T	S	T	S	T	S	T		M	S	T	M	T	T
Red-winged Blackbird	*Agelaius phoeniceus*	-	-	S4					S	NB	M	T	M	NB				X	NB
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	S4B						S			S						S
Scarlet Tanager	*Piranga olivacea*	-	-	S4B			S								M		M		M
Song Sparrow	*Melospiza melodia*	-	-	S5B	S		S	T	S	T	S	T	M			S	S	T	T
Sora	*Porzana carolina*	-	-	S4B									S						S
Swamp Sparrow	*Melospiza georgiana*	-	-	S5B					H	NB	S	T		NB					NB
Warbling Vireo	*Vireo gilvus*	-	-	S5B														S	S
White-breasted Nuthatch	*Sitta carolinensis*	-	-	S5			S		S				S				S		S
White-throated Sparrow	*Zonotrichia albicollis*	-	-	S5B					S		S								S
Yellow Warbler	*Setophaga petechia*	-	-	S5B	S		S		M	T	M	T	M	T				S	T
Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	S5B														S	S (NE - outside of targeted surveys)
Yellow-throated Vireo	*Vireo flavifrons*	-	-	S4B	S				S		S							S	S

Appendix G

Significant Wildlife Habitat Assessment

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Seasonal Concentration Areas of Animals						
Waterfowl Stopover and Staging Areas (Terrestrial)	Meadow, Thicket, or Agricultural Field WITH spring flooding/sheet water (Mar-May) AND size potential to support 100+ individuals AND potential established/recurring annual use	American Black Duck, American Wigeon, Blue-winged Teal, Gadwall, Green-winged Teal, Mallard, Northern Pintail, Northern Shoveler, Wood Duck Defining Criteria: 100+ individuals SWH: ecosite + 100-300m radius; dependent on local site conditions and adjacent land use	No	N/A	SWH Absent	No
Waterfowl Stopover and Staging Area (Aquatic)	Shallow Marsh, Deciduous Swamp, Shallow Aquatic, Open Aquatic, reservoirs managed as wetland/ lake/ pond AND size potential to support 100+ individuals for 7+ days *Rare: typically only a few locations per EcoDistrict *EXCLUDES SWM and sewage treatment ponds*	American Black Duck, American Wigeon, Black Scoter, Blue-winged Teal, Brant, Bufflehead, Cackling Goose, Canada Goose, Canvasback, Common Goldeneye, Common Merganser, Gadwall, Greater Scaup, Green-winged Teal, Hooded Merganser, Lesser Scaup, Long-tailed Duck, Northern Pintail, Northern Shoveler, Red-breasted Merganser, Redhead, Ring-necked duck, Ruddy Duck, Snow Goose, Surf Scoter, White-winged Scoter Defining Criteria: 100+ individuals for 7+ days (>700 waterfowl use days) OR annual staging of Ruddy Ducks, Canvasbacks and Redheads OR wetlands and shorelines associated with sites identified in SWHTG Appendix K SWH: combined ecosites + 100m radius	Yes	N/A	SWH Absent	No
Shorebird Migratory Stopover Area	Beach/Bar, Sand Dune, Meadow Marsh, Shorelines of lakes, rivers and wetlands (including seasonally flooded, muddy, unvegetated shoreline habitats) WITH size potential to support 100+ Whimbrel OR 3+ species for 1000+ shorebird use days *EXCLUDES SWM and sewage treatment ponds*	American Golden Plover, Baird's Sandpiper, Black-bellied Plover, Dunlin, Greater Yellowlegs, Hudsonian Godwit, Least Sandpiper, Lesser Yellowlegs, Marbled Godwit, Pectoral Sandpiper, Purple Sandpiper, Red-necked Phalarope, Ruddy Turnstone, Sanderling, Semipalmated Plover, Short-billed Dowitcher, Solitary Sandpiper, Spotted Sandpiper, Stilt Sandpiper, Whimbrel, White-rumped Sandpiper Defining Criteria: 3+ species and 1000+ shorebird use days (#birds x #days) OR 100+ Whimbrel for at least 3 yrs (makes brief stops of <24 hrs during migration) SWH: combined ecosites + 100m radius	No	N/A	SWH Absent	No
Raptor Wintering Area (Hawks and Owls)	COMBINATION of Forest, Meadow, Thicket, Savannah, Woodland or lightly grazed pasture of combined 20+ha area WITH 15+ha of the area consisting of open habitat; Fields should be wind swept with limited snow accumulation / depth	Hawks: American Kestrel, Red-tailed Hawk, Rough-legged Hawk, Northern Harrier Owls: Short-eared Owl, Snowy Owl Defining Criteria: 1+ Short-eared Owls OR 10+ individuals of 2+ listed hawk/owl species; AND must be used regularly (at least 20 days during each year for at least 3 in 5 years) SWH: not specified in Criteria Schedules	No	N/A	SWH Absent	No
Raptor Wintering Area (Bald Eagle)	Forest or Treed Swamp on shoreline of large rivers or lakes WITH large trees and snags for roosting	Bald Eagle Defining Criteria: 1+ Bald Eagle AND used regularly (at least 20 days out of 3 in 5 years) SWH: shoreline forest ecosites directly adjacent to the prime hunting area (open water)	No	N/A	SWH Absent	No
Bat Hibernacula	Crevices, Caves, Karst Features, Abandoned Mines *EXCLUDES buildings and active mines*	Big Brown Bat, Tri-coloured Bat Defining Criteria: all sites with confirmed hibernacula are SWH SWH: entrance + 1000m radius for wind farms OR + 200m radius for other projects	No	N/A	SWH Absent	No
Bat Maternity Colonies	Mature Deciduous or Mixed Forests and Swamps WITH 10+/ha cavity trees WITH 25+ cm DBH; Trees in lesser decay categories (1-3) preferred *EXCLUDES Coniferous Forests and Swamps and buildings*	Big Brown Bat, Silver-haired Bat Defining Criteria: >10 Big Brown Bats OR >5 Adult Female Silverhaired Bats SWH: entire Ecosite or Ecoelement containing the maternity colony	Yes	Big Brown Bat and Silver-haired Bat confirmed presence on Site through targeted surveys.	SWH Confirmed - All deciduous forests communites on Site (Commmunities 1, 7, 8, 9).	Yes - Candidate

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Turtle Wintering Area (Painted and Snapping Turtles)	Swamp, Marsh, Shallow Aquatic, Open Aquatic, Open Fen, Open Bog WITH soft mud substrates AND enough depth to maintain free water beneath ice AND adequate dissolved oxygen *EXCLUDES man-made ponds such as SWM and sewage treatment ponds*	Midland Painted Turtle, Snapping Turtle Defining Criteria: 5+ Painted Turtles OR 1+ Snapping Turtle SWH: ecosite	Yes	Greater than 5 Midland Painted Turtles and more than 1 Snapping Turtle observed through targeted surveys.	SWH Confirmed - Marsh community northwest area of Site (Community 2).	Yes - Confirmed; continuation of marsh wetland into adjacent lands.
Turtle Wintering Area (Northern Map Turtle)	Open Aquatic, including deeper rivers or streams and lakes WITH current AND soft mud substrates AND enough depth to maintain free water beneath ice AND adequate dissolved oxygen *EXCLUDES SWM and sewage treatment ponds*	Northern Map Turtle Defining Criteria: 1+ Northern Map Turtle SWH: ecosite OR the pool where overwintering occurs in a stream/river	No	Targeted surveys conducted on-site. No Northern Map Turtles observed.	SWH Absent	Yes - Candidate
Reptile Hibernaculum (Snakes)	Any ecosites other than very wet ones, broken/fissured bedrock, burrows, rock piles or slopes, old stone fences, or abandoned crumbling foundations, some wetlands (conifer or shrub swamps and swales, poor fens or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover)WITH openings below frost line:	Eastern Gartersnake, Eastern Ribbonsnake, Milksnake, Northern Brownsnake, Northern Red-bellied Snake, Northern Ring-necked, Northern Watersnake, Smooth Green Snake Defining Criteria: 5+ individuals of a species OR any number snakes of 2 or more species OR presence of a Special Concern species AND observed near a potential hibernacula on warmy sunny days in spring and fall SWH: feature containing hibernacula +30 m radius	Yes	Targeted surveys conducted on-site. Eastern Gartersnake, Northern Watersnake, and Eastern Milksnake observed. Exposed rock formations in upland forested areas (Communities 1, 7, 8, 9) present adjacent to or near wetland communities (Community 2, 3, 4, 5, 6).	Candidate. Most communities on Site provide some form of potential hibernaculum habitat. Most observations focused on north half of Site.	Yes - Candidate
Reptile Hibernaculum (Five-lined Skink)	Mixed Forests, Deciduous Forest, or Coniferous Forest dominated by Pine/Hemlock WITH cover rocks overlaying fissured granite bedrock	Five-lined Skink (Southern Shield population) Defining Criteria: All sites with active Skink hibernacula are SWH SWH: feature containing hibernacula +30 m radius	No	N/A	SWH Absent	No
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills/piles, pits, steep slopes, cliff faces WITH size potential to support 8+ nests *EXCLUDES all man-made structures (bridge abutments, silos, barns, etc.) AND recently (2 years) disturbed soil (berms, embankments, stock piles, aggregate operations)*	Cliff Swallow, Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies) Defining Criteria: 1+ nesting site with 8+ pairs SWH: peripheral nests + 50 m radius	No	N/A	SWH Absent	No
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Deciduous and Mixed Swamp (excluding those dominated by Cedar) or Treed Fen, lake shorelines/ islands/ peninsulas WITH size to support 5+ nests; Nests are typically 11-15 m above ground near top of live or dead standing trees / occasionally in shrubs and emergent vegetation	Black-crowned Night Heron, Great Blue Heron, Green Heron, Great Egret Defining Criteria: 5+ active nests SWH: edge of the colony + minimum 300 m radius OR extent of the forest ecosite OR any island <15 ha with a colony	No	N/A	SWH Absent	No
Colonially-nesting Bird Breeding Habitat (Ground; Terns and Gulls)	Rocky island or peninsula (natural or artificial) in lake or large river	Caspian Tern, Common Tern, Great Black-backed Gull, Herring Gull, Little Gull, Ring-billed Gull Defining Criteria: 25+ active Herring Gull or Ring-billed Gull nests OR 5+ active Common Tern nests OR 2+ active Caspian Tern nests OR 1+ active Little Gull or Great Black-backed Gull nest SWH: edge of the colony + 150+m radius OR the ecosites containing the colony OR any island <3 ha	No	N/A	SWH Absent	No

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Colonially-nesting Bird Breeding Habitat (Ground; Brewer's Blackbird)	Close proximity to watercourses in pastures, Meadows, Thickets, Savannah, Meadow Marsh, Shallow Marsh AND scattered trees or shrubs	Brewer's Blackbird Defining Criteria: 5+ pairs SWH: edge of the colony + 150+ m radius OR the ecosites containing the colony OR any island <3 ha	No	N/A	SWH Absent	No
Migratory Butterfly Stopover Area	Combination of Forest or Plantation AND Meadow, Thicket, or Savannah WITH size of 10+ha AND located within 5 km of Lake Ontario AND relatively undisturbed with abundance of preferred nectar plants	Monarch, Painted Lady, Red Admiral Defining Criteria: Monarch Use Days (MUD) of 5000+ OR 3000+ MUD and presence of Painted Ladies or Red Admirals SWH: not indicated in Criteria Schedules	No	N/A	SWH Absent	No
Landbird Migratory Stopover Areas	Forest or Treed Swamp that may be complexed with grassland or wetland AND size of 10+ ha AND located within 5 km of Lake Ontario	All migratory songbirds and raptors Defining Criteria: 200+ birds/day of 35+ species AND 10+ bird species on 5+ survey dates (April/May and August/October) SWH: not indicated in Criteria Schedules	No	N/A	SWH Absent	No
Deer Yarding Areas	Stratum I (Core): Coniferous Forest or Swamp WITH 60+% canopy cover by Pine, Hemlock, Cedar, or Spruce Stratum II (typically surrounds Stratum I): Mixed or Deciduous Forest or Swamp WITH plenty of browse (esp. those dominated by Poplar or Birch); can include agricultural fields *EXCLUDES woodlots with high densities of deer due to artificial feeding*	White-tailed Deer **Presence is determined by MNRF** *If present, consider Movement Corridors*	No	N/A	SWH Absent	No
Deer Winter Congregation Areas	Forest and Treed Swamps; Typically applies to areas of 100+ ha, but can be smaller (e.g., conifer plantations) *EXCLUDES woodlots with high densities of deer due to artificial feeding*	White-tailed Deer **Presence is determined by MNRF** *If present, consider Movement Corridors*	No	N/A	SWH Absent	No
Rare Vegetation Communities						
Cliffs and Talus Slopes	Cliff (near vertical bedrock 3+m tall) OR Talus. In 6E, most cliffs and talus slopes are associated with the Niagara Escarpment	No listed species Defining Criteria: no added criteria SWH: ecosite	No	N/A	SWH Absent	No
Sand Barren	Sand Barren WITH size 0.5+ha AND <60% tree cover; usually located within other types of habitat; caused by lack of moisture, periodic fires and erosion	No listed species Defining Criteria: <50% cover by exotic/invasive species SWH: ecosite	No	N/A	SWH Absent	No
Alvar	Alvar, Coniferous Forest dominated by Pine or Cedar, Bedrock Cultural Meadow, Juniper Bedrock Alvar Cultural Thicket, Bedrock Cultural Savannah (CUS2), Bedrock Cultural Woodland (CUW2) WITH size 0.5+ha AND <60% tree cover; typically level mosaic of rock pavements and bedrock overlain by thin veneer of soil	Indicator Species: Crawe's Sedge, Flat-stemmed Spikerush, Fluxweed, Philadelphia Panicgrass, Small Skullcap Defining Criteria: 4+ listed Alvar Indicator Species AND <50% cover by exotic / introduced species AND in excellent condition AND fits surrounding landscape with few conflicting land uses SWH: ecosite	No	N/A	SWH Absent	No
Old Growth Forest	Forest, Treed Swamp WITH size of 30+ha WITH 10+ha interior habitat (measured 100 m from forest edge)	No listed species Defining Criteria: presence of 140+ year old trees AND no cut stumps or other signs of logging SWH: limited to area that meets criteria	No	N/A	SWH Absent	No

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Savannah	Tallgrass Savannah, Talgrass Woodland, Cultural Savannah of any size WITH tree cover 25-60%; may be a natural or restored site *EXCLUDES remnant sites such as railway right of ways*	Indicator Species (SHWTG Appendix N): Dwarf Hackberry, Early-branching Panicgrass, Illinois Tick-trefoil, Redtop Panicgrass, Side-oats Gramma, Small-leaved Tick-trefoil, White Prairie Gentian Defining Criteria: 1+ indicator species present AND <50% cover by exotic / introduced species SWH: ecosite	No	N/A	SWH Absent	No
Tallgrass Prairie	Tallgrass Prairie of any size WITH <25 tree cover; may be a natural or restored site *EXCLUDES remnant sites such as railway right of ways*	Indicator Species (SWHTG Appendix N): Dwarf Hackberry, Early-branching Panicgrass, Illinois Tick-trefoil, Redtop Panicgrass, Side-oats Gramma, Small-leaved Tick-trefoil, White Prairie Gentian Defining Criteria: 1+ indicator species present AND <50% cover by exotic / introduced species SWH: ecosite	No	N/A	SWH Absent	No
Other Communities Considered Provincially Rare	ELC communities considered provincially rare by the NHIC	ELC communities considered provincially rare by the NHIC	No	N/A	SWH Absent	No
Specialized Habitat for Wildlife						
Waterfowl Nesting Area	Upland habitats 120+m wide AND adjacent shallow aquatic, shallow marsh, meadow marsh, thicket swamp, or deciduous treed swamp (i.e., all wetlands excluding coniferous and mixed treed swamps). Wetlands must be >0.5 ha or a cluster of three or more <0.5 ha wetlands within 120 m of each other where waterfowl nesting is known to occur. *Wood Ducks Bufflehead, Common Goldeneye, and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites	American Black Duck, Blue-winged Teal, Gadwall, Green-winged Teal, Hooded Merganser, Mallard, Northern Pintail, Northern Shoveler, Wood Duck Defining Criteria: 1+ nesting site of American Black Duck OR 10+ nesting pairs (including Mallards) OR 3+ nesting pairs (excluding Mallards) SWH: 120 m radius (+/- as determined by site-specific study) of upland habitat adjacent to a wetland	Yes	1 pair of Wood Duck observed in vicinity of marsh wetland (Community 2) and upland forest (Communtiy 1). Nesting not confirmed.	SWH Absent	No
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	Forest, Swamp AND directly adjacent to shoreline/riparian areas of rivers, lakes, ponds, wetlands *EXCLUDES nests on man-made objects (e.g., telephone poles, constructed platforms)*	Osprey, Bald Eagle Defining Criteria: 1+ active nest of either species AND known to be used annually; to be excluded, nests must be known to be inactive for 3+ yrs or suspected to be inactive for 5+ yrs SWH: Osprey: active nest +300m radius OR contiguous woodland; Bald Eagle: active nest +400-800 m radius	No	N/A	SWH Absent	No

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Woodland Raptor Nesting Habitat	Forest, Treed Swamp, Coniferous Plantations of 30+ ha AND 10+ ha of interior habitat (measured 200 m from the forest edge)	Barred Owl, Broad-winged Hawk, Cooper's Hawk, Northern Goshawk, Red-shouldered Hawk, Sharp-shinned Hawk Defining Criteria: 1+ active nest SWH: Red-shouldered Hawk, Northern Goshawk: active nest +400m radius OR 28 ha of suitable habitat; Barred Owl: active nest +200m radius; Broad-winged Hawk, Coopers Hawk: active nest +100m radius; Sharp-shinned Hawk: active nest +50m radius	Yes	Raptor species (not identified) observed on a single occasion, near location of a potential sticknest (Community 8). Sticknest characteristic of Broad-winged Hawk or possibly American Crow. No other activity observed in or around sticknest during all other Site visits. Nest deemed to be inactive during 2025 field season. Multiple Barred Owls heard and seen multiple times during Site visits, throughout all communties. No nest or breeding activity observed.	Candidate; Sticknest (Community 8), Barred Owls (all communities on Site).	Yes - Candidate
Turtle Nesting Areas	Exposed mineral soil (sand and gravel) areas WITHIN 100 m of adjacent Bog, Fen, Shallow Marsh, Shallow Aquatic, or undisturbed shallow weedy areas of marshes, lakes, and rivers *EXCLUDES habitat along municipal or provincial roads*	Midland Painted Turtle, Snapping Turtle, Northern Map Turtle Defining Criteria: 5+ nesting Midland Painted Turtle OR 1+ nesting Northern Map Turtle or Snapping Turtle SWH: nesting area + 30-100m radius, depending on slope, riparian vegetation, adjacent land use, and consideration of travel routes to/from nest sites	Yes	Midland Painted Turtle and Snapping Turtle observations made during targeted surveys. No nests observed.	Candidate (Community 2).	Yes - Candidate
Seeps and Springs	Forest in headwaters area of a stream/river system; important wildlife feeding/drinking areas, especially in the winter	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp. Defining Criteria: 2+ seeps/springs SWH: ecosite/ecoelement; protection of the recharge area considering slope, vegetation, height of trees and groundwater condition	Yes	Four seeps and springs identified.	Confirmed (Along the wetland boundary of Communities 5 and 7, and Communities 3 and 6).	No
Amphibian Breeding Habitat (Woodland)	Wetland, pond or breeding pool, including vernal pools WITH size of 500+m^2 (~25m diameter) AND located in or within 120m of Forest or Treed Swamp *Permanent ponds or those containing water until at least mid-July are preferred	Blue-spotted Salamander, Eastern Newt, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog Defining Criteria: 1+ breeding salamander sp or newt OR 2+ breeding frog sp WITH 20+ individuals (adults or eggs masses) / Call Level Code 3 SWH: breeding pond/wetland +230m radius of woodland habitat *If present adjacent to woodland, travel corridor linking feature to the woodland is to be included*	Yes	Spring Peeper and Gray Tree Frog were observed (Call Code 3) at ACS 2 and 3.	Confirmed: Wetland Communities 2, 3, and 5, and adajcent woodland Communities 1 and 7. Habitat is the wetland area plus a 230m radius of woodland area.	Yes. Continutation of wetlands and adjacent woodlands.
Amphibian Breeding Habitat (Wetlands)	Swamp, Fen, Bog, Meadow Marsh, Shallow Marsh, Shallow Aquatic, Open Aquatic WITH size of 500+m^2 (~25 m diameter) AND typically >120 m from Forest except in the case of larger habitats containing predominantly aquatic species (e.g., Bullfrog) which may have riparian Forest *Shrubs and logs increase significance for some species because of structure for calling, foraging, escape, and concealment from predators	Blue-spotted Salamander, Eastern Newt, Four-toed Salamander, Spotted Salamander, American Toad, Bullfrog, Gray Treefrog, Green Frog, Mink Frog, Northern Leopard Frog, Pickerel Frog, Western Chorus Frog Defining Criteria: 1+ breeding salamander sp or newt OR 2+ breeding frog/toad sp WITH 20+ individuals (adults or eggs masses) / Call Level Code 3 OR any number of breeding Bullfrogs SWH: wetland ecosite + adjacent shoreline *If present, travel corridor SWH is to be considered*	Yes	Call code level 3 documented for Gray Tree Frog, Green Frog, and Northern Leopard Frog during targeted surveys. Breeding Bullfrogs were incidentally observed outside of targeted amphibian surveys.	Confirmed (Community 2, 3 and 4)	Yes. Continutation of wetlands and adjacent woodlands.

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Woodland Area Sensitive Bird Breeding Habitat	Forest and Treed Swamps, typically WITH mature (>60 yrs old) stands AND woodlots >30 ha; consider presence of interior forest habitat measured 200+m from any edge	Blackburnian Warbler, Black-throated Blue Warbler, Black-throated Green Warbler, Blue-headed Vireo, Canada Warbler, Cerulean Warbler, Northern Parula, Ovenbird, Red-breasted Nuthatch, Scarlet Tanager, Veery, Winter Wren, Yellow-bellied Sapsucker Defining Criteria: nesting or breeding pairs of 3+ listed species OR any breeding Cerulean Warbler or Canada Warbler SWH: not defined in criteria schedules	Yes	Only two species observed with probable or confirmed breeding: Scarlet Tanager and Yellow-bellied Sapsucker.	Absent	No
Habitat of Species of Conservation Concern						
Marsh Bird Breeding Habitat	Wetland WITH shallow water AND emergent vegetation *Green Heron prefers edge of water (sluggish streams, ponds, marshes sheltered by shrubs and trees), but can also be found in upland shrubs or forest a considerable distance from water	American Bittern, American Coot, Black Tern, Common Loon, Common Moorhen, Green Heron, Sora, Marsh Wren, Pie-billed Grebe, Sandhill Crane, Sedge Wren, Trumpeter Swan, Virginia Rail, Yellow Rail Defining Criteria: 1+ breeding Black Tern, Sandhill Crane, Trumpeter Swan, Green Heron or Yellow Rail OR 5+ nesting pairs of Sedge Wren or Marsh Wren OR breeding by 5+ other listed species SWH: ecosite	Yes	Single observation of Sora during all targeted surveys.	Absent	No
Open Country Bird Breeding Habitat	Natural and Cultural Meadows WITH size 30+ha AND should have a history of longevity; present for at least 5 years *EXCLUDES Class 1 or 2 agricultural lands AND lands being actively used for row crops, intensive hay or pasture in the last 5 years*	Grasshopper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl, Upland Sandpiper, Vesper Sparrow Defining Criteria: nesting/breeding of 2+ listed species OR 1+ breeding Short-eared Owl SWH: contiguous ecosite field habitats	No	N/A	SWH Absent	No
Shrub/Early Successional Bird Breeding Habitat	Field habitats succeeding to Cultural Woodland, Cultural Savannah or Cultural Thicket WITH size of 10+ha AND should have a history of longevity; present for at least 5 years *EXCLUDES Class 1 or 2 agricultural lands AND lands being actively used for crops or pasture in the last 5 years*	Indicator Species: Brown Thrasher, Clay-coloured Sparrow Common Species: Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher Special Concern: Yellow-breasted Chat, Golden-winged Warbler Defining Criteria: 1+ indicator species AND 2+ listed common species OR 1+ breeding Yellow-breasted Chat or Golden-winged Warbler SWH: contiguous ecosite field/thicket habitats	No	N/A	SWH Absent	No
Terrestrial Crayfish *Canadian populations limited to SW Ontario	Meadow Marsh, Shallow Marsh, Thicket Swamp, Deciduous or Mixed Treed Swamp, or Cultural Meadow containing Meadow Marsh or Swamp inclusions	Chimney or Digger Crayfish (*Fallicambarus fodiens*), Devil or Meadow Crayfish (*Cambarus diogenes*) Defining Criteria: 1+ individuals of a listed species OR chimneys SWH: ecosite OR ecoelement of marsh/swamp habitat within a larger ecosite	No	N/A	SWH Absent	No
Special Concern and Rare Wildlife Species	Any - varies by species; habitat needs to cover an important life stage component (e.g., nesting, foraging, or wintering habitat)	Species that are ranked S1-S3 by the NHIC and/or are provincially tracked Species with populations that are significantly declining or have a high percentage of their global population in Ontario Species listed as special concern under the ESA Species listed as threatened or endangered under SARA only Regionally or locally rare species, where lists are available Defining Criteria: no additional criteria SWH: finest scale that protects the habitat form and function	Yes	Eastern Wood-pewee, Eastern Whip-poor-will, Eastern Milksnake, Midland Painted Turtle, and Snapping Turtle observed on Site.	Confirmed (All Communities)	Yes -Candidate

APPENDIX: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Animal Movement Corridors						
Amphibian Movement Corridors	Any terrestrial habitat associated with water; shorter corridors are more significant than longer ones *potential determined based on identification of Amphibian Breeding (Wetland) SWH (i.e., not Woodland)	American Toad, Blue-spotted Salamander, Bullfrog, Eastern Newt, Four-toed Salamander, Gray Treefrog, Green Frog, Mink Frog, Northern Leopard Frog, Pickerel Frog, Spotted Salamander, Western Chorus Frog Defining Criteria: allowing amphibians to travel between terrestrial and breeding habitat; several layers of native vegetation; ideally unbroken by roads, waterways, waterbodies, and development; ideally with gaps less than 20 m SWH: 15+m on both sides of a waterway/ecosite OR up to 200m wide in woodland habitats	Yes	Wetlands and adjacent forested communities on Site provide undisturbed corridor habitat to north of the Site.	Wetland communities (2, 3, 4, 5, 6) and upland forested communities(1, 7, 8). Corridor habitat to have at least 15m of vegetation on both sides of aquatic feature.	Yes - Candidate
Deer Movement Corridors	Any forested habitat; shorter corridors are more significant than longer ones; often associated with Stratum II Deer Wintering Areas; typically follow riparian areas, woodlots, areas of physical geography (ravines or ridges) *potential determined based on identification of Deer Wintering SWH	White-tailed Deer Defining Criteria: allowing movement to and from wintering areas; MNRF-identified deer wintering habitat will have corridors used by deer during spring and fall; should be unbroken by roads and residential areas SWH: Corridors should be 200+m wide including canopy gaps <20m OR 15+m riparian vegetation cover on both sides of a waterway	No	N/A	SWH Absent	No
Ecoregion 6E-14 Only:						
Mast Producing Areas	All Mixed and Deciduous Forest 30+ ha in size WITH mast-producing tree species (cherry, oak or beech)	Black Bear Defining Criteria: 50% cover by the following ecosites: FOM1-1, FOM2-1, FOM3-1, FOD1-1, FOD1-2, FOD2-1, FOD2-2, FOD2-3, FOD2-4, FOD4-1, FOD5-2, FOD5-3, FOD5-7, FOD6-5	No	N/A	SWH Absent	No
Sharp-tailed Grouse Lek	Bare, grassy or sparse shrubland (Meadow, Savannah or Thicket ecosites) AND typically >15 ha in size when shrub habitat is adjacent OR typically >30 ha when Deciduous Forest habitat is adjacent. Conifer trees not within 500 m.	Sharp-tailed Grouse Defining Criteria: Any site confirmed with Sharp-tailed Grouse courtship is SWH SWH: Field/meadow ecosite + 200 m radius where Shrub or Deciduous Forest habitat is present	No	N/A	SWH Absent	No

APPENDIX G: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Seasonal Concentration Areas of Animals						
Waterfowl Stopover and Staging Areas (Terrestrial)	Meadow, Thicket, or Agricultural Field WITH spring flooding/sheet water (Mar-May) AND size potential to support 100+ individuals AND potential established/recurring annual use	American Black Duck, American Wigeon, Blue-winged Teal, Gadwall, Green-winged Teal, Mallard, Northern Pintail, Northern Shoveler, Wood Duck Defining Criteria: 100+ individuals SWH: ecosite + 100-300m radius; dependent on local site conditions and adjacent land use	No	N/A	SWH Absent	No
Waterfowl Stopover and Staging Area (Aquatic)	Shallow Marsh, Deciduous Swamp, Shallow Aquatic, Open Aquatic, reservoirs managed as wetland/ lake/ pond AND size potential to support 100+ individuals for 7+ days *Rare: typically only a few locations per EcoDistrict *EXCLUDES SWM and sewage treatment ponds*	American Black Duck, American Wigeon, Black Scoter, Blue-winged Teal, Brant, Bufflehead, Cackling Goose, Canada Goose, Canvasback, Common Goldeneye, Common Merganser, Gadwall, Greater Scaup, Green-winged Teal, Hooded Merganser, Lesser Scaup, Long-tailed Duck, Northern Pintail, Northern Shoveler, Red-breasted Merganser, Redhead, Ring-necked duck, Ruddy Duck, Snow Goose, Surf Scoter, White-winged Scoter Defining Criteria: 100+ individuals for 7+ days (>700 waterfowl use days) OR annual staging of Ruddy Ducks, Canvasbacks and Redheads OR wetlands and shorelines associated with sites identified in SWHTG Appendix K SWH: combined ecosites + 100m radius	Yes	N/A	SWH Absent	No
Shorebird Migratory Stopover Area	Beach/Bar, Sand Dune, Meadow Marsh, Shorelines of lakes, rivers and wetlands (including seasonally flooded, muddy, unvegetated shoreline habitats) WITH size potential to support 100+ Whimbrel OR 3+ species for 1000+ shorebird use days *EXCLUDES SWM and sewage treatment ponds*	American Golden Plover, Baird's Sandpiper, Black-bellied Plover, Dunlin, Greater Yellowlegs, Hudsonian Godwit, Least Sandpiper, Lesser Yellowlegs, Marbled Godwit, Pectoral Sandpiper, Purple Sandpiper, Red-necked Phalarope, Ruddy Turnstone, Sanderling, Semipalmated Plover, Short-billed Dowitcher, Solitary Sandpiper, Spotted Sandpiper, Stilt Sandpiper, Whimbrel, White-rumped Sandpiper Defining Criteria: 3+ species and 1000+ shorebird use days (#birds x #days) OR 100+ Whimbrel for at least 3 yrs (makes brief stops of <24 hrs during migration) SWH: combined ecosites + 100m radius	No	N/A	SWH Absent	No
Raptor Wintering Area (Hawks and Owls)	COMBINATION of Forest, Meadow, Thicket, Savannah, Woodland or lightly grazed pasture of combined 20+ha area WITH 15+ha of the area consisting of open habitat; Fields should be wind swept with limited snow accumulation / depth	Hawks: American Kestrel, Red-tailed Hawk, Rough-legged Hawk, Northern Harrier Owls: Short-eared Owl, Snowy Owl Defining Criteria: 1+ Short-eared Owls OR 10+ individuals of 2+ listed hawk/owl species; AND must be used regularly (at least 20 days during each year for at least 3 in 5 years) SWH: not specified in Criteria Schedules	No	N/A	SWH Absent	No
Raptor Wintering Area (Bald Eagle)	Forest or Treed Swamp on shoreline of large rivers or lakes WITH large trees and snags for roosting	Bald Eagle Defining Criteria: 1+ Bald Eagle AND used regularly (at least 20 days out of 3 in 5 years) SWH: shoreline forest ecosites directly adjacent to the prime hunting area (open water)	No	N/A	SWH Absent	No
Bat Hibernacula	Crevices, Caves, Karst Features, Abandoned Mines *EXCLUDES buildings and active mines*	Big Brown Bat, Tri-coloured Bat Defining Criteria: all sites with confirmed hibernacula are SWH SWH: entrance + 1000m radius for wind farms OR + 200m radius for other projects	No	N/A	SWH Absent	No
Bat Maternity Colonies	Mature Deciduous or Mixed Forests and Swamps WITH 10+/ha cavity trees WITH 25+ cm DBH; Trees in lesser decay categories (1-3) preferred *EXCLUDES Coniferous Forests and Swamps and buildings*	Big Brown Bat, Silver-haired Bat Defining Criteria: >10 Big Brown Bats OR >5 Adult Female Silverhaired Bats SWH: entire Ecosite or Ecoelement containing the maternity colony	Yes	Big Brown Bat and Silver-haired Bat confirmed presence on Site through targeted surveys.	SWH Confirmed - All deciduous forests communites on Site (Commmunities 1, 7, 8, 9).	Yes - Candidate

APPENDIX G: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Turtle Wintering Area (Painted and Snapping Turtles)	Swamp, Marsh, Shallow Aquatic, Open Aquatic, Open Fen, Open Bog WITH soft mud substrates AND enough depth to maintain free water beneath ice AND adequate dissolved oxygen *EXCLUDES man-made ponds such as SWM and sewage treatment ponds .*	Midland Painted Turtle, Snapping Turtle Defining Criteria: 5+ Painted Turtles OR 1+ Snapping Turtle SWH: ecosite	Yes	Greater than 5 Midland Painted Turtles and more than 1 Snapping Turtle observed through targeted surveys.	SWH Confirmed - Marsh community northwest area of Site (Community 2).	Yes - Confirmed; continuation of marsh wetland into adjacent lands.
Turtle Wintering Area (Northern Map Turtle)	Open Aquatic, including deeper rivers or streams and lakes WITH current AND soft mud substrates AND enough depth to maintain free water beneath ice AND adequate dissolved oxygen *EXCLUDES SWM and sewage treatment ponds .*	Northern Map Turtle Defining Criteria: 1+ Northern Map Turtle SWH: ecosite OR the pool where overwintering occurs in a stream/river	No	Targeted surveys conducted on-site. No Northern Map Turtles observed.	SWH Absent	Yes - Candidate
Reptile Hibernaculum (Snakes)	Any ecosites other than very wet ones, broken/fissured bedrock, burrows, rock piles or slopes, old stone fences, or abandoned crumbling foundations, some wetlands (conifer or shrub swamps and swales, poor fens or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover)WITH openings below frost line.	Eastern Gartersnake, Eastern Ribbonsnake, Milksnake, Northern Brownsnake, Northern Red-bellied Snake, Northern Ring-necked, Northern Watersnake, Smooth Green Snake Defining Criteria: 5+ individuals of a species OR any number snakes of 2 or more species OR presence of a Special Concern species AND observed near a potential hibernacula on warmy sunny days in spring and fall SWH: feature containing hibernacula +30 m radius	Yes	Targeted surveys conducted on-site. Eastern Gartersnake, Northern Watersnake, and Eastern Milksnake observed. Exposed rock formations in upland forested areas (Communities 1, 7, 8, 9) present adjacent to or near wetland communities (Community 2, 3, 4, 5, 6).	Candidate. Most communities on Site provide some form of potential hibernaculum habitat. Most observations focused on north half of Site.	Yes - Candidate
Reptile Hibernaculum (Five-lined Skink)	Mixed Forests, Deciduous Forest, or Coniferous Forest dominated by Pine/Hemlock WITH cover rocks overlaying fissured granite bedrock.	Five-lined Skink (Southern Shield population) Defining Criteria: All sites with active Skink hibernacula are SWH SWH: feature containing hibernacula +30 m radius	No	N/A	SWH Absent	No
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills/piles, pits, steep slopes, cliff faces WITH size potential to support 8+ nests. *EXCLUDES all man-made structures (bridge abutments, silos, barns, etc.) AND recently (2 years) disturbed soil (berms, embankments, stock piles, aggregate operations) .*	Cliff Swallow, Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies) Defining Criteria: 1+ nesting site with 8+ pairs SWH: peripheral nests + 50 m radius	No	N/A	SWH Absent	No
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Deciduous and Mixed Swamp (excluding those dominated by Cedar) or Treed Fen, lake shorelines/ islands/ peninsulas WITH size to support 5+ nests; Nests are typically 11-15 m above ground near top of live or dead standing trees / occasionally in shrubs and emergent vegetation.	Black-crowned Night Heron, Great Blue Heron, Green Heron, Great Egret Defining Criteria: 5+ active nests SWH: edge of the colony + minimum 300 m radius OR extent of the forest ecosite OR any island <15 ha with a colony	No	N/A	SWH Absent	No
Colonially-nesting Bird Breeding Habitat (Ground; Terns and Gulls)	Rocky island or peninsula (natural or artificial) in lake or large river.	Caspian Tern, Common Tern, Great Black-backed Gull, Herring Gull, Little Gull, Ring-billed Gull Defining Criteria: 25+ active Herring Gull or Ring-billed Gull nests OR 5+ active Common Tern nests OR 2+ active Caspian Tern nests OR 1+ active Little Gull or Great Black-backed Gull nest SWH: edge of the colony + 150+m radius OR the ecosites containing the colony OR any island <3 ha	No	N/A	SWH Absent	No

APPENDIX G: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Colonially-nesting Bird Breeding Habitat (Ground; Brewer's Blackbird)	Close proximity to watercourses in pastures, Meadows, Thickets, Savannah, Meadow Marsh, Shallow Marsh AND scattered trees or shrubs	Brewer's Blackbird Defining Criteria: 5+ pairs SWH: edge of the colony + 150+ m radius OR the ecosites containing the colony OR any island <3 ha	No	N/A	SWH Absent	No
Migratory Butterfly Stopover Area	Combination of Forest or Plantation AND Meadow, Thicket, or Savannah WITH size of 10+ha AND located within 5 km of Lake Ontario AND relatively undisturbed with abundance of preferred nectar plants	Monarch, Painted Lady, Red Admiral Defining Criteria: Monarch Use Days (MUD) of 5000+ OR 3000+ MUD and presence of Painted Ladies or Red Admirals SWH: not indicated in Criteria Schedules	No	N/A	SWH Absent	No
Landbird Migratory Stopover Areas	Forest or Treed Swamp that may be complexed with grassland or wetland AND size of 10+ ha AND located within 5 km of Lake Ontario	All migratory songbirds and raptors Defining Criteria: 200+ birds/day of 35+ species AND 10+ bird species on 5+ survey dates (April/May and August/October) SWH: not indicated in Criteria Schedules	No	N/A	SWH Absent	No
Deer Yarding Areas	Stratum I (Core): Coniferous Forest or Swamp WITH 60+% canopy cover by Pine, Hemlock, Cedar, or Spruce Stratum II (typically surrounds Stratum I): Mixed or Deciduous Forest or Swamp WITH plenty of browse (esp. those dominated by Poplar or Birch); can include agricultural fields *EXCLUDES woodlots with high densities of deer due to artificial feeding*	White-tailed Deer **Presence is determined by MNRF** *If present, consider Movement Corridors*	No	N/A	SWH Absent	No
Deer Winter Congregation Areas	Forest and Treed Swamps; Typically applies to areas of 100+ ha, but can be smaller (e.g., conifer plantations) *EXCLUDES woodlots with high densities of deer due to artificial feeding*	White-tailed Deer **Presence is determined by MNRF** *If present, consider Movement Corridors*	No	N/A	SWH Absent	No
Rare Vegetation Communities						
Cliffs and Talus Slopes	Cliff (near vertical bedrock 3+m tall) OR Talus. In 6E, most cliffs and talus slopes are associated with the Niagara Escarpment	No listed species Defining Criteria: no added criteria SWH: ecosite	No	N/A	SWH Absent	No
Sand Barren	Sand Barren WITH size 0.5+ha AND <60% tree cover; usually located within other types of habitat; caused by lack of moisture, periodic fires and erosion	No listed species Defining Criteria: <50% cover by exotic/invasive species SWH: ecosite	No	N/A	SWH Absent	No
Alvar	Alvar, Coniferous Forest dominated by Pine or Cedar, Bedrock Cultural Meadow, Juniper Bedrock Alvar Cultural Thicket, Bedrock Cultural Savannah (CUS2), Bedrock Cultural Woodland (CUW2) WITH size 0.5+ha AND <60% tree cover; typically level mosaic of rock pavements and bedrock overlain by thin veneer of soil	Indicator Species: Crawe's Sedge, Flat-stemmed Spikerush, Fluxweed, Philadelphia Panicgrass, Small Skullcap Defining Criteria: 4+ listed Alvar Indicator Species AND <50% cover by exotic / introduced species AND in excellent condition AND fits surrounding landscape with few conflicting land uses SWH: ecosite	No	N/A	SWH Absent	No
Old Growth Forest	Forest, Treed Swamp WITH size of 30+ha WITH 10+ha interior habitat (measured 100 m from forest edge)	No listed species Defining Criteria: presence of 140+ year old trees AND no cut stumps or other signs of logging SWH: limited to area that meets criteria	No	N/A	SWH Absent	No

APPENDIX G: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Savannah	Tallgrass Savannah, Talgrass Woodland, Cultural Savannah of any size WITH tree cover 25-60%; may be a natural or restored site *EXCLUDES remnant sites such as railway right of ways*	Indicator Species (SHWTG Appendix N): Dwarf Hackberry, Early-branching Panicgrass, Illinois Tick-trefoil, Redtop Panicgrass, Side-oats Gramma, Small-leaved Tick-trefoil, White Prairie Gentian Defining Criteria: 1+ indicator species present AND <50% cover by exotic / introduced species SWH: ecosite	No	N/A	SWH Absent	No
Tallgrass Prairie	Tallgrass Prairie of any size WITH <25 tree cover; may be a natural or restored site *EXCLUDES remnant sites such as railway right of ways*	Indicator Species (SWHTG Appendix N): Dwarf Hackberry, Early-branching Panicgrass, Illinois Tick-trefoil, Redtop Panicgrass, Side-oats Gramma, Small-leaved Tick-trefoil, White Prairie Gentian Defining Criteria: 1+ indicator species present AND <50% cover by exotic / introduced species SWH: ecosite	No	N/A	SWH Absent	No
Other Communities Considered Provincially Rare	ELC communities considered provincially rare by the NHIC	ELC communities considered provincially rare by the NHIC	No	N/A	SWH Absent	No
Specialized Habitat for Wildlife						
Waterfowl Nesting Area	Upland habitats 120+m wide AND adjacent shallow aquatic, shallow marsh, meadow marsh, thicket swamp, or deciduous treed swamp (i.e., all wetlands excluding coniferous and mixed treed swamps). Wetlands must be >0.5 ha or a cluster of three or more <0.5 ha wetlands within 120 m of each other where waterfowl nesting is known to occur. *Wood Ducks Bufflehead, Common Goldeneye, and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites	American Black Duck, Blue-winged Teal, Gadwall, Green-winged Teal, Hooded Merganser, Mallard, Northern Pintail, Northern Shoveler, Wood Duck Defining Criteria: 1+ nesting site of American Black Duck OR 10+ nesting pairs (including Mallards) OR 3+ nesting pairs (excluding Mallards) SWH: 120 m radius (+/- as determined by site-specific study) of upland habitat adjacent to a wetland	Yes	1 pair of Wood Duck observed in vicinity of marsh wetland (Community 2) and upland forest (Communtiy 1). Nesting not confirmed.	SWH Absent	No
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	Forest, Swamp AND directly adjacent to shoreline/riparian areas of rivers, lakes, ponds, wetlands *EXCLUDES nests on man-made objects (e.g., telephone poles, constructed platforms)*	Osprey, Bald Eagle Defining Criteria: 1+ active nest of either species AND known to be used annually; to be excluded, nests must be known to be inactive for 3+ yrs or suspected to be inactive for 5+ yrs SWH: Osprey: active nest +300m radius OR contiguous woodland; Bald Eagle: active nest +400-800 m radius	No	N/A	SWH Absent	No

APPENDIX G: Significant Wildlife Habitat Screening - 6E

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Woodland Raptor Nesting Habitat	Forest, Treed Swamp, Coniferous Plantations of 30+ ha AND 10+ ha of interior habitat (measured 200 m from the forest edge)	Barred Owl, Broad-winged Hawk, Cooper's Hawk, Northern Goshawk, Red-shouldered Hawk, Sharp-shinned Hawk Defining Criteria: 1+ active nest SWH: Red-shouldered Hawk, Northern Goshawk: active nest +400m radius OR 28 ha of suitable habitat; Barred Owl: active nest +200m radius; Broad-winged Hawk, Coopers Hawk: active nest +100m radius; Sharp-shinned Hawk: active nest +50m radius	Yes	Raptor species (not identified) observed on a single occasion, near location of a potential sticknest (Community 8). Sticknest characteristic of Broad-winged Hawk or possibly American Crow. No other activity observed in or around sticknest during all other Site visits. Nest deemed to be inactive during 2025 field season. Multiple Barred Owls heard and seen multiple times during Site visits, throughout all communties. No nest or breeding activity observed.	Candidate; Sticknest (Community 8), Barred Owls (all communities on Site).	Yes - Candidate
Turtle Nesting Areas	Exposed mineral soil (sand and gravel) areas WITHIN 100 m of adjacent Bog, Fen, Shallow Marsh, Shallow Aquatic, or undisturbed shallow weedy areas of marshes, lakes, and rivers *EXCLUDES habitat along municipal or provincial roads*	Midland Painted Turtle, Snapping Turtle, Northern Map Turtle Defining Criteria: 5+ nesting Midland Painted Turtle OR 1+ nesting Northern Map Turtle or Snapping Turtle SWH: nesting area + 30-100m radius, depending on slope, riparian vegetation, adjacent land use, and consideration of travel routes to/from nest sites	Yes	Midland Painted Turtle and Snapping Turtle observations made during targeted surveys. No nests observed.	Candidate (Community 2).	Yes - Candidate
Seeps and Springs	Forest in headwaters area of a stream/river system; important wildlife feeding/drinking areas, especially in the winter	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp. Defining Criteria: 2+ seeps/springs SWH: ecosite/ecoelement; protection of the recharge area considering slope, vegetation, height of trees and groundwater condition	Yes	Four seeps and springs identified.	Confirmed (Along the wetland boundary of Communities 5 and 7, and Communities 3 and 6).	No
Amphibian Breeding Habitat (Woodland)	Wetland, pond or breeding pool, including vernal pools WITH size of 500+m^2 (~25m diameter) AND located in or within 120m of Forest or Treed Swamp *Permanent ponds or those containing water until at least mid-July are preferred	Blue-spotted Salamander, Eastern Newt, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog Defining Criteria: 1+ breeding salamander sp or newt OR 2+ breeding frog sp WITH 20+ individuals (adults or eggs masses) / Call Level Code 3 SWH: breeding pond/wetland +230m radius of woodland habitat *If present adjacent to woodland, travel corridor linking feature to the woodland is to be included*	Yes	Spring Peeper and Gray Tree Frog were observed (Call Code 3) at ACS 2 and 3.	Confirmed: Wetland Communities 2, 3, and 5, and adajcent woodland Communities 1 and 7. Habitat is the wetland area plus a 230m radius of woodland area.	Yes. Continutation of wetlands and adjacent woodlands.

APPENDIX G: Significant Wildlife Habitat Screening - 6E

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Amphibian Breeding Habitat (Wetlands)	Swamp, Fen, Bog, Meadow Marsh, Shallow Marsh, Shallow Aquatic, Open Aquatic WITH size of 500+m^2 (~25 m diameter) AND typically >120 m from Forest except in the case of larger habitats containing predominantly aquatic species (e.g., Bullfrog) which may have riparian Forest *Shrubs and logs increase significance for some species because of structure for calling, foraging, escape, and concealment from predators	Blue-spotted Salamander, Eastern Newt, Four-toed Salamander, Spotted Salamander, American Toad, Bullfrog, Gray Treefrog, Green Frog, Mink Frog, Northern Leopard Frog, Pickerel Frog, Western Chorus Frog Defining Criteria: 1+ breeding salamander sp or newt OR 2+ breeding frog/toad sp WITH 20+ individuals (adults or eggs masses) / Call Level Code 3 OR any number of breeding Bullfrogs SWH: wetland ecosite + adjacent shoreline *If present, travel corridor SWH is to be considered*	Yes	Call code level 3 documented for Gray Tree Frog, Green Frog, and Northern Leopard Frog during targeted surveys. Breeding Bullfrogs were incidentally observed outside of targeted amphibian surveys.	Confirmed (Community 2, 3 and 4)	Yes. Continutation of wetlands and adjacent woodlands.
Woodland Area Sensitive Bird Breeding Habitat	Forest and Treed Swamps, typically WITH mature (>60 yrs old) stands AND woodlots >30 ha; consider presence of interior forest habitat measured 200+m from any edge	Blackburnian Warbler, Black-throated Blue Warbler, Black-throated Green Warbler, Blue-headed Vireo, Canada Warbler, Cerulean Warbler, Northern Parula, Ovenbird, Red-breasted Nuthatch, Scarlet Tanager, Veery, Winter Wren, Yellow-bellied Sapsucker Defining Criteria: nesting or breeding pairs of 3+ listed species OR any breeding Cerulean Warbler or Canada Warbler SWH: not defined in criteria schedules	Yes	Only two species observed with probable or confirmed breeding: Scarlet Tanager and Yellow-bellied Sapsucker.	Absent	No
Habitat of Species of Conservation Concern						
Marsh Bird Breeding Habitat	Wetland WITH shallow water AND emergent vegetation *Green Heron prefers edge of water (sluggish streams, ponds, marshes sheltered by shrubs and trees), but can also be found in upland shrubs or forest a considerable distance from water	American Bittern, American Coot, Black Tern, Common Loon, Common Moorhen, Green Heron, Sora, Marsh Wren, Pie-billed Grebe, Sandhill Crane, Sedge Wren, Trumpeter Swan, Virginia Rail, Yellow Rail Defining Criteria: 1+ breeding Black Tern, Sandhill Crane, Trumpeter Swan, Green Heron or Yellow Rail OR 5+ nesting pairs of Sedge Wren or Marsh Wren OR breeding by 5+ other listed species SWH: ecosite	Yes	Single observation of Sora during all targeted surveys.	Absent	No
Open Country Bird Breeding Habitat	Natural and Cultural Meadows WITH size 30+ha AND should have a history of longevity; present for at least 5 years *EXCLUDES Class 1 or 2 agricultural lands AND lands being actively used for row crops, intensive hay or pasture in the last 5 years*	Grasshopper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl, Upland Sandpiper, Vesper Sparrow Defining Criteria: nesting/breeding of 2+ listed species OR 1+ breeding Short-eared Owl SWH: contiguous ecosite field habitats	No	N/A	SWH Absent	No
Shrub/Early Successional Bird Breeding Habitat	Field habitats succeeding to Cultural Woodland, Cultural Savannah or Cultural Thicket WITH size of 10+ha AND should have a history of longevity; present for at least 5 years *EXCLUDES Class 1 or 2 agricultural lands AND lands being actively used for crops or pasture in the last 5 years*	Indicator Species: Brown Thrasher, Clay-coloured Sparrow Common Species: Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher Special Concern: Yellow-breasted Chat, Golden-winged Warbler Defining Criteria: 1+ indicator species AND 2+ listed common species OR 1+ breeding Yellow-breasted Chat or Golden-winged Warbler SWH: contiguous ecosite field/thicket habitats	No	N/A	SWH Absent	No
Terrestrial Crayfish *Canadian populations limited to SW Ontario	Meadow Marsh, Shallow Marsh, Thicket Swamp, Deciduous or Mixed Treed Swamp, or Cultural Meadow containing Meadow Marsh or Swamp inclusions	Chimney or Digger Crayfish (*Fallicambarus fodiens*), Devil or Meadow Crayfish (*Cambarus diogenes*) Defining Criteria: 1+ individuals of a listed species OR chimneys SWH: ecosite OR ecoelement of marsh/swamp habitat within a larger ecosite	No	N/A	SWH Absent	No

APPENDIX G: Significant Wildlife Habitat Screening - 6E

			SITE			ADJACENT LANDS
SWH Type	**Habitat Descriptions & Criteria for Candidate SWH**	**Listed Species & Defining Criteria for Confirmed SWH**	**Candidate SWH Criteria Present: Yes/No**	**Species or Defining Criteria Observations**	**Candidate/Confirmed /Absent SWH: Area to be Defined & Relevant Notes**	**Candidate or Confirmed SWH Potentially Present Based on Habitats and Field Observations: Yes/No**
Special Concern and Rare Wildlife Species	Any - varies by species; habitat needs to cover an important life stage component (e.g., nesting, foraging, or wintering habitat)	Species that are ranked S1-S3 by the NHIC and/or are provincially tracked Species with populations that are significantly declining or have a high percentage of their global population in Ontario Species listed as special concern under the ESA Species listed as threatened or endangered under SARA only Regionally or locally rare species, where lists are available Defining Criteria: no additional criteria SWH: finest scale that protects the habitat form and function	Yes	Eastern Wood-pewee, Eastern Whip-poor-will, Eastern Milksnake, Midland Painted Turtle, and Snapping Turtle observed on Site.	Confirmed (All Communities)	Yes -Candidate

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Animal Movement Corridors						
Amphibian Movement Corridors	Any terrestrial habitat associated with water; shorter corridors are more significant than longer ones *potential determined based on identification of Amphibian Breeding (Wetland) SWH (i.e., not Woodland)	American Toad, Blue-spotted Salamander, Bullfrog, Eastern Newt, Four-toed Salamander, Gray Treefrog, Green Frog, Mink Frog, Northern Leopard Frog, Pickerel Frog, Spotted Salamander, Western Chorus Frog Defining Criteria: allowing amphibians to travel between terrestrial and breeding habitat; several layers of native vegetation; ideally unbroken by roads, waterways, waterbodies, and development; ideally with gaps less than 20 m SWH: 15+m on both sides of a waterway/ecosite OR up to 200m wide in woodland habitats	Yes	Wetlands and adjacent forested communities on Site provide undisturbed corridor habitat to north of the Site.	Wetland communities (2, 3, 4, 5, 6) and upland forested communities(1, 7, 8). Corridor habitat to have at least 15m of vegetation on both sides of aquatic feature.	Yes - Candidate
Deer Movement Corridors	Any forested habitat; shorter corridors are more significant than longer ones; often associated with Stratum II Deer Wintering Areas; typically follow riparian areas, woodlots, areas of physical geography (ravines or ridges) *potential determined based on identification of Deer Wintering SWH	White-tailed Deer Defining Criteria: allowing movement to and from wintering areas; MNRF-identified deer wintering habitat will have corridors used by deer during spring and fall; should be unbroken by roads and residential areas SWH: Corridors should be 200+m wide including canopy gaps <20m OR 15+m riparian vegetation cover on both sides of a waterway	No	N/A	SWH Absent	No
Ecoregion 6E-14 Only:						
Mast Producing Areas	All Mixed and Deciduous Forest 30+ ha in size WITH mast-producing tree species (cherry, oak or beech)	Black Bear Defining Criteria: 50% cover by the following ecosites: FOM1-1, FOM2-1, FOM3-1, FOD1-1, FOD1-2, FOD2-1, FOD2-2, FOD2-3, FOD2-4, FOD4-1, FOD5-2, FOD5-3, FOD5-7, FOD6-5	No	N/A	SWH Absent	No
Sharp-tailed Grouse Lek	Bare, grassy or sparse shrubland (Meadow, Savannah or Thicket ecosites) AND typically >15 ha in size when shrub habitat is adjacent OR typically >30 ha when Deciduous Forest habitat is adjacent. Conifer trees not within 500 m.	Sharp-tailed Grouse Defining Criteria: Any site confirmed with Sharp-tailed Grouse courtship is SWH SWH: Field/meadow ecosite + 200 m radius where Shrub or Deciduous Forest habitat is present	No	N/A	SWH Absent	No