ENVIRONMENTAL IMPACT STUDY

Verreault Property
Hastings Highlands
September 2024

RIVERSTONE

ENVIRONMENTAL SOLUTIONS INC.

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

September 20, 2024
RS# 2024-038

Scott Verreault

***SUBJECT*: Environmental Impact Study, 147 Peelow Ave, Municipality of Hasting Highlands, Hastings County**

Dear Scott,

RiverStone Environmental Solutions Inc. is pleased to provide you with the attached report.

Please contact us if there are any questions regarding the report, or if further information is required.

Best regards,

RiverStone Environmental Solutions Inc.

Bev Wicks, Ph. D.
Principal / Senior Ecologist

Table of Contents

1 BACKGROUND 1
2 APPROACH AND METHODS 1
2.1 Identification of Study Area 1
2.2 Information Sources Used to Assess Site Conditions 2
2.3 Site Assessment Methods 3
2.3.1 Habitat-based Wildlife Assessment 3
2.3.2 Targeted Wildlife Assessment 3
2.3.3 Physical Assessment (Topography, Surficial Geology, & Drainage) 4
2.3.4 Vegetation Community Assessment 4
2.3.5 On-Site Investigations 4
2.4 Significant Natural Heritage Feature Assessment 4
2.4.1 Fish Habitat and Streams 5
2.4.2 Endangered and Threatened Species 6
2.5 Impact Assessment 6
2.6 Assessment of Conformance with Applicable Environmental Policies 6
3 NATURAL HERITAGEFEATURES AND FUNCTIONS 7
3.1 General Site Conditions 7
3.2 Terrain, Drainage, and Soils 7
3.3 Vegetation Communities 7
3.3.1 Terrestrial Vegetation Communities 8
3.3.2 Fish Habitat 8
4 SIGNIFICANT NATURAL HERITAGE FEATURES 8
4.1 Fish Habitat & Streams 9
4.2 Wetlands 9
4.3 Areas of Natural and Scientific Interest (Life Science) 9
4.4 Habitat of Endangered and Threatened Species 9
4.4.1 Endangered Bat Species (*Myotis lucifugus, M. septentrionalis, Perimyotis subflavus* - Endangered) 10
4.4.2 Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) 11
5 IMPACT ASSESSMENT AND RECOMMENDATIONS 11
5.1 Development Proposal 11

5.2 Impact Assessment 11
5.3 Water Quality and Fish Habitat 12
5.3.1 Fish Habitat 13
5.4 Endangered and Threatened Species 14
5.4.1 Endangered Bats 14
6 CONFORMANCE WITH APPLICABLE ENVIRONMENTAL POLICIES 15
6.1 Federal Fisheries Act (R.S.C., 1985, amended 2019-08-28) 15
6.2 Federal *Migratory Birds Convention Act, 1994* (MBCA) 16
6.3 Provincial *Endangered Species Act, 2007* (ESA) 16
6.4 Provincial Policy Statement, 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13. .. 17
6.5 Hastings County Official Plan (August 2018) 17
6.6 Municipality of Hastings Highlands Zoning By-law 2014-14 (Consolidated February 2024) 18
7 CONCLUSIONS 18
8 REFERENCES 19

List of Figures

Figure 1. Location of subject property 20
Figure 2. Existing Conditions, ... 21
Figure 3. Proposed Development and Recommendations 25

List of Appendices

Appendix 1. Select Photos from Site Visit
Appendix 2. Assessment of Habitat of Endangered and Threatened Species
Appendix 3. Site Plan

ENVIRONMENTAL ASSESSMENT NON-TECHNICAL SUMMARY

Type of Study		**Date**
Combined Environmental Impact Study/Site Evaluation Report		September 20, 2024
Project Manager	**Legal Description**	**Development Proposed**
Bev Wicks	147 Peelow Ave, Part of Lot 22, Concession 9, Geographic Township of Monteagle Municipality of Hastings Highlands, County of Hastings	Re-development of a deck and installation of a septic system.
	Approval Authorities	**Owner/Agent**
	Municipality of Hastings Highlands, County of Hastings	Scott Verreault

Report Summary

This Environmental Impact Study/Site Evaluation Report has been prepared as part of a development application to add an addition of an existing cottage within 30 metres of the high-water mark of Bartlett Lake. During the onsite review of existing conditions, it was determined that the subject property contained or were adjacent to the following natural heritage features:

1. Potential habitat of endangered and threatened species, and
2. Fish Habitat

Potential impacts of the proposed application on the identified natural heritage features and species of conservation interest were evaluated. Potential negative impacts resulting from the proposed development can be mitigated using the recommendations contained within **Section 5** of this report (reiterated below).

RECOMMENDATIONS

Water Quality and Fish Habitat

Alteration Within Shoreline Buffer

- **Consider omitting the deck on the southwest side of the property with a proposed location of 7.1m from the lake unless a slope stability study is conducted.**

- **Vegetation within the shoreline buffer must be maintained in its natural state, except for the existing stairs/pathways to the shoreline. No additional vegetation or trees should be removed within the buffer unless they are a safety hazard (assessed by an ISA certified arborist) and debris from clearing or materials to be used in construction will not be placed within the buffer.**

- **A Site Plan Agreement or similar instrument that restricts vegetation removal, site alteration and/or disturbance outside of the development envelope as shown on Figure 3 should be required prior to lot development.**

- **No additional vegetation or trees outside of the development envelope should be removed unless they are a safety hazard (assessed by an ISA certified arborist) and debris from clearing or materials to be used in construction will be placed within the existing amenity area and/or driveway.**

Fish Habitat

- **Before native soils are exposed, sediment and erosion control works, in the form of sediment fencing, should be installed outside of the development envelope and upslope and as far as possible from the Bartlett Lake shoreline. These works should be maintained in good working order until the exposed soils have become revegetated.**
- **The sediment fencing should be constructed of heavy fabric and solid posts and should be properly trenched to maintain its integrity during weather events.**
- **During construction, the on-site supervisor should be responsible for daily inspections of the sediment and erosion control measures, and immediately complete any repairs required, until such time as the disturbed areas have been fully stabilized.**
- **A Site Plan Agreement be prepared that includes location, materials and extent of all hardened surfaces, and location and detail of sediment and erosion control fencing.**
- **DFO should be notified immediately if a situation occurs or if there is imminent danger of HADD. If there is an occurrence, corrective measures must be implemented. This may occur during construction or otherwise.**

Septic System

- **The proposed septic system should be designed by a licenced professional and installed according to any permit issued by the municipality.**
- **The installation of the septic system must be completed must by a licenced installer.**
- **If a full septic system is required and not just a holding tank then any imported soils used for leaching bed construction should be silt free, fine to medium grained non-calcareous soils, having a high concentration of iron and aluminum and low concentration of calcium carbonate. Native soils removed for the placement of the re-constructed dwelling may also be used should they meet all criteria noted above and those for septic use as noted in the Ontario Building Code.**

<u>Endangered and Threatened Species</u>

Endangered Bats

- **Although not anticipated, if tree removal is necessary trees should only be removed from October 1st to April 1st.**
- **If tree clearing or demolition must occur between April 1 and October 1, a qualified professional should complete a combination of snag surveys and acoustic monitoring, with technical guidance from the MECP, for the area where tree clearing is proposed.**

- **Limit any tree clearing to condensed development envelope, avoid unnecessary tree removals, and retain trees that are in poor health but do not represent a hazard.**

1 BACKGROUND

RiverStone Environmental Solutions Inc. (hereafter "RiverStone") was retained by Scott Verreault to complete an Environmental Impact Study (EIS)/Site Evaluation Report for the property located at 147 Peelow Ave with frontage on Bartlett Lake in the Municipality of Hasting Highlands. The legal description of the property is Part Lot 22, Concession 9, Geographic Township of Monteagle, Municipality of Hastings Highlands, County of Hastings (hereafter "subject property") (**Figure 1**).

According to the Municipality of Hastings Highlands Zoning By-law 2004-35 (December 2020) the subject property is zoned Waterfront Residential (WR). It is RiverStone's understanding that the proposal is to redevelop an existing unattached deck and to install a septic system as part of an order to remedy. Based on communications with Planning Staff at the Municipality of Hastings Highlands, the minor variance application for the deck requires the completion of an EIS to assess the potential impacts of the proposal on identified natural heritage features. The EIS is scoped to an assessment of existing vegetation, classification, species at risk, fish habitat, water quality, and steep slopes. RiverStone has interpreted "species of concern" to include both endangered and threatened species.

This EIS is required to demonstrate how the proposed development can occur while still protecting the components of the natural environment that require protection and provide mitigation measures to minimize impacts to natural features and the ecological functions. RiverStone has prepared this EIS as scoped above, to address the requirements outlined in the County of Hastings Official Plan policies, as well as the Provincial Policy Statement.

2 APPROACH AND METHODS

The general approach used to complete this study involved the following:

1. Identify a study area in which to focus assessment efforts (subject property and adjacent lands).

2. Assemble and review background biophysical information for the subject property and adjacent lands, to become familiar with any previously identified significant natural heritage feature (SNHF) and records of species at risk (SAR) prior to the site investigation.

3. Conduct a site investigation to field-verify the presence or absence of SNHFs, confirm the biophysical features and functions identified during background information gathering, and to collect additional field data (e.g., habitat information, etc.) that will assist with completing the report.

4. Determine the potential for negative impacts associated with implementation of the proposed development and provide recommendations on how identified negative impacts can be avoided, mitigated, minimized, and/or compensated (as necessary).

5. Provide an assessment of consistency and conformity of the proposed development plan with applicable municipal, provincial, and federal environmental policies.

2.1 Identification of Study Area

The focus of this assessment is the portion of the subject property on which development is proposed (see **Figure 1** and **Figure 2**). Informally, the study area also incorporates a minimum 120 m radius around the limits of the proposed development, a measure that is intended to ensure appropriate consideration for natural heritage features and functions of adjacent lands, consistent with direction in

the Natural Heritage Reference Manual (NHRM) under the Provincial Policy Statement (PPS). The study area may also include consideration for adjacent privately-owned lands; however, assessment of such areas is informal and limited to a desktop review.

2.2 Information Sources Used to Assess Site Conditions

Background biophysical information pertaining to the subject property and adjacent lands was collected from a variety of sources. This includes:

- **County of Hastings Official Plan (December 2017)** for natural features mapping including:
    - Schedule B – Natural Heritage Features and Areas
- **Municipality of Hasting Highlands Comprehensive Zoning By-law** (2004-035) (Consolidated February 2024) for applicable zoning and environmental protection areas mapping
- **MNRF Natural Areas Mapping and Natural Heritage Information Centre (NHIC) database** regarding information on occurrences of species at risk (SAR), provincially tracked species, and natural heritage features near the subject property (square: 18TR7506 and 18TR7606 accessed September 17, 2024 at https://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US)
- **Species at Risk in Ontario List** as provided by Ministry of the Environment, Conservation and Parks: https://www.ontario.ca/page/species-risk-ontario (last accessed July 2024)
- **Distribution of Fish Species at Risk** generated by Fisheries and Oceans Canada (accessed on September 15, 2024 at: http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html).
- **Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005** (Cadman et al. 2007) regarding birds that were documented to be breeding near the Site between 2001–2005 (square: 18TTR70 accessed at: http://www.birdsontario.org/atlas/squareinfo.jsp).
- **Ontario Reptile and Amphibian Atlas** database regarding records of reptiles and amphibians that have been observed within the vicinity of the subject property (square: 18TR70; accessed June 6, 2024, at https://www.ontarioinsects.org/herp/).
- **iNaturalist Mapping and Online Database** regarding citizen scientist observations documented in the vicinity of the subject lands accessed June, 2024 at: https://inaturalist.ca/projects/nhic-rare-species-of-ontario
- **Atlas of the Mammals of Ontario** (Dobbyn 1994) regarding mammals recorded near the subject property.
- **Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2** (Henson and Brodribb (2005) regarding terrestrial biodiversity within Ecodistrict 5E.
- **Great Lakes Conservation Blueprint for Aquatic Biodiversity, Volume 2** (Phair et al. (2005) regarding aquatic biodiversity.
- **Physiography of Southern Ontario** (Chapman and Putnam 2007) for information pertaining to the physiography and soils within and adjacent to the subject property.

- **Digital Ontario Base Maps** (OBMs; 1:10,000).
- **Historical and Current Aerial Photographs** of the subject property and adjacent lands.
- RiverStone's **in-house databases and reference collections**.
- On-site investigations by RiverStone staff (see **Section2.3**)

2.3 Site Assessment Methods

The sections below outline the various methods used to characterize and assess natural heritage features and associated functions within the subject property.

2.3.1 Habitat-based Wildlife Assessment

RiverStone's primary approach to site assessment is habitat-based. We first focus on evaluating the potential for natural heritage features and species within an area of interest, prior to undertaking any targeted assessments or surveys. An area is considered potential habitat if it satisfies several criteria, usually specific to a species, but occasionally characteristic of a broader group (*e.g*., several species of turtles use sandy shorelines for nesting, several species of bats use cavity trees as day roosts and maternity sites, etc.). If habitat features are demonstrably absent from a study area, then targeted surveys would not be considered warranted to further support conclusions of the assessment.

Physical attributes of a site that can be used to assess habitat function include structural characteristics (*e.g*., age and composition of forest canopy, water depth), ecological community (*e.g.*, meadow marsh, rock barren, coldwater stream), and structural connectivity to other habitat features required by a species of interest or indicator species. Species-specific habitat preferences and/or affinities are determined from status reports produced by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Cadman et al. (2007), unpublished documents, and direct experience.

Evidence for the presence of a species (or use of an area by a species) was determined from visual and/or auditory documentation (e.g., song, call) and/or observation of nests, tracks, burrows, browse, skins, and scats (where applicable). Significant natural heritage features (e.g., wildlife habitat, fish habitat, etc.) were delineated in the field with a high accuracy GPS. Features of interest were photographed, and all information collected was catalogued for future reference. Overall, the level of effort expended on-site was deemed appropriate to document natural features and functions with recognized status given the location and scale of the proposed development plan. Representative photographs taken during the site investigation are provided in **Appendix 1.**

2.3.2 Targeted Wildlife Assessment

Where appropriate, RiverStone explores further species-specific assessments in accordance with applicable standard methods and protocols. Targeted survey efforts may be undertaken due to one or more triggers, such as a specific request from an approval authority, an existing record for a species of interest, or a limitation to the habitat-based assessment (*e.g.*, limited property access). Given the timing of study initiation and schedule for application submission, targeted survey methodologies were not undertaken for any specific group of wildlife for this property. All potential habitat functions are estimated based on review of background information and expert and conservative interpretation of on-site habitat structure, as discussed above.

2.3.3 Physical Assessment (Topography, Surficial Geology, & Drainage)

The geophysical setting of this property was determined using topographic, soils, and geological mapping, aerial photography, and descriptions gathered through on-site investigations. Drainage features were identified through the review of background mapping resources and/or delineated in the field.

2.3.4 Vegetation Community Assessment

All natural vegetation communities within the Subject Property were mapped according to the Great Lakes-St. Lawrence (GLSL) Ecosite Fact Sheets (Wester *et al*. 2015), otherwise known as the "Provincial" ELC system. The GLSL Ecosite factsheets represent refinements and a synthesis of several different protocols for describing vegetation communities (primarily forests) within Ecoregions 4 and 5 previously prepared by MNRF in the 1990's. ELC defines ecological units or "Ecosites" based on a hierarchy of influence involving several physical factors including climate (temperature, precipitation), flooding, disturbance regimes, and substrate (depth, texture, moisture, nutrients). ELC provides a common language to describe vegetation communities, which in turn facilitates the identification of vegetation communities likely to support features or functions of conservation interest.

Each Ecosite code consists of three (3) components. The first component is a 1-digit geographic range code; all Ecosites within the GLSL geographic range begin with the letter "G". The second component is a 3-digit Ecosite number that corresponds to a specific vegetation community. The third component is a 1- or 2-digit vegetation cover modifier indicating whether the dominant vegetation is tall-treed (Tt), low-treed (Tl), shrub (S), not woody (N), or not vegetated (X). For example, "G153N" refers to a rock barren community that is dominated by non-woody vegetation occurring within the Great-Lakes St. Lawrence geographic range.

In our experience, the ELC classification key is not comprehensive and improvised classifications are occasionally used to describe communities, particularly for cultural, successional, or otherwise anthropogenic land cover. Vegetation communities were delineated via aerial photo interpretation and subsequently confirmed and refined in the field using a general wandering survey approach. The boundaries of any identified wetland boundaries were delineated in accordance with the "50% wetland vegetation rule" as directed by the Ontario Wetland Evaluation System (OWES), where feasible.

2.3.5 On-Site Investigations

The background information gathered as outlined in **Section 2.1** helped direct data collection during site investigations. The sites features were assessed on July 25, 2024, by a RiverStone Ecologist. Investigations were focused on collecting information pertaining to: (1) topography and drainage, (2) vegetation communities, (3) habitat for endangered and threatened species and (4) fish habitat. Representative site photos taken during this investigation are assembled in **Appendix 1** Overall, the level of effort expended on-site was deemed appropriate to document the features and functions with recognized status given the location and scale of the proposed development.

2.4 Significant Natural Heritage Feature Assessment

Provincial and local planning policies employ varying terms for natural heritage features and designations that have recognized 'statuses' within the applicable planning jurisdiction. Where relevant, this report employs the terminology of the Provincial Policy Statement (PPS) by referring to

features with recognized status as Significant Natural Heritage Features (SNHF). Additionally, natural heritage features which do not constitute SNHF under the PPS but are considered relevant in the local land use planning context are considered in this discussion. A list of SNHF (applicable to Ecoregion 5E and/or the Municipality of Hastings Highlands) that were reviewed as potentially being present on the subject property include the following:

- Fish Habitat & Streams
- Wetlands (including significant wetlands and coastal wetlands)
- Significant Areas of Natural and Scientific Interest
- Habitat of Endangered and Threatened Species

The listed applicable features are assessed in accordance with applicable technical guidance documents, including the following:

- *County of Hastings Official Plan (Approved August 3, 2018)*.
- *Natural Heritage Reference Manual (NHRM) for the Natural Heritage Policies of the Provincial Policy Statement* (MNRF 2010)

In addition to the above references, the potential presence/absence of relevant species of conservation interest, such as endangered and threatened species, are assessed using a combination of the background information review outlined in **Section2** and the habitat-based and targeted approach outlined in **Section 2.3.1**.

2.4.1 Fish Habitat and Streams

Potential fish habitat was also assessed in the field using a habitat-based approach, based on guidance protocols and established criteria provided by both the MNRF and DFO. Where determined to be present, fish habitat is assigned to one of three potential categories, Type 1, Type 2, or Type 3 as outlined in **Table 1** below. Fish habitat mapping, fisheries records, thermal regime, and the known fish community of a lake or watercourse are used in conjunction with site-specific field evaluation, to determine which 'type' of habitat is present in any portion of a waterbody.

Table 1. Classification of Fish Habitat Types

Classification Type	Description
Type 1	Habitats have high productive capacity, are rare, in space and/or time, are highly sensitive to development, or have a critical role in sustaining fisheries (*e.g.*, spawning and nursery areas for some species, and ground water discharge areas for summer and/or winter thermal refuges).
Type 2	Habitats are moderately sensitive to development and, although important to the fish population, are not considered critical (*e.g.*, feeding areas and open water habitats of lakes).
Type 3	Habitats have low productive capacity or are highly degraded, and do not currently contribute directly to fish productivity. They often have the potential to be improved significantly (*e.g.*, a portion of a waterbody, a channelized stream that has been highly altered physically).

2.4.2 Endangered and Threatened Species

This report considers those species listed as endangered or threatened on the Ontario Species at Risk List (*O. Reg*. 230/08) that receive protection under s.9 and s.10 of the provincial *Endangered Species Act, 2007* (ESA). The ESA includes prohibitions against killing, harming, harassing, capturing, or taking a living member of a species listed as extirpated, endangered, or threatened on the SARO List and against damaging or destroying the habitat of a species listed as endangered or threatened on the SARO List, without an exemption or authorization. Seeking an ESA authorization or exemption is a proponent-led process to ensure proposed development does not contravene the ESA.

As described in **Section 2.3.1**, RiverStone's approach to site assessment is primarily habitat-based. The assessment included a thorough review of the available information, site visits, and assessment of findings. The results of these assessments are provided in **Appendix 3**.

2.5 Impact Assessment

To carry out a rigorous and defensible ecological assessment of potential impacts associated with the proposed development, RiverStone employs the following approach.

1. *Predict* impacts to features and species of conservation interest on the subject property and adjacent lands based on the proposed development plan (from construction to post-completion), including both direct (*e.g.*, vegetation clearance) and indirect (*e.g*., light pollution, encroachment post-development) impacts.
2. *Evaluate the significance* of predicted impacts to features and species of conservation interest based on their spatial extent, magnitude, timing, frequency, and duration.
3. *Assess the probability or likelihood* that the predicted impacts will occur at the level of significance expected (*e.g.*, high, medium, low probability).

In instances where the potential for negative impacts to features or species of conservation interest exist, ecologically meaningful mitigation measures are offered to avoid, minimize, and/or compensate for such impacts. RiverStone's impact assessment and recommended mitigation measures are provided in **Section 5.**

2.6 Assessment of Conformance with Applicable Environmental Policies

To assess whether the application is consistent or complies with the relevant municipal, provincial, and federal requirements with respect to the natural environment, the following policies (e.g., statutes, regulations, plans, guidance documents, etc.) that may be applicable to the proposed application were considered during both the field investigations and the impact analysis. An assessment of the proposed development's consistency and conformity with these policies is provided in **Section 6**.

- Federal *Fisheries Act*, R.S.C. 1985, c. F-14, amended on 2019-08-28 including:
    - *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations*, S.O.R/2013-191
    - Fish and Fish Habitat Protection Policy Statement (August 2019)
- Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22, including:
    - Migratory Birds Regulations.

- *Provincial Policy Statement*, 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13, including:
    - Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (OMNR 2010)
- Provincial *Endangered Species Act* (ESA), S.O. 2007, c. 6, including:
    - Ontario Regulation 230/08: Species at Risk in Ontario List
    - Ontario Regulation 242/08: "Exemption Regulation"
- County of Hastings *Official Plan* (December 19, 2017)
- Municipality of Hastings Highlands *Comprehensive Zoning By-law 2004-035* (Consolidated February 2024)

3 NATURAL HERITAGEFEATURES AND FUNCTIONS

3.1 General Site Conditions

At the time of our site visit on July 25, 2024, development on the subject property consisted of a driveway, a cottage with a deck, a storage shed, stairs to the shoreline, and a dock. There are also a set of what appear to be newly poured concrete footings in sauna tubes on the sloped area adjacent to the Bartlett Lake. The subject property is small narrow rectangular shaped with frontage on Bartlett Lake. The property is bound by Peelow Ave to the east, Barlett Lake to the west and similar properties to the north and south. No wetland or watercourse features were noted on the subject property. Representative photographs taken during the site investigation are provided in **Appendix 1**.

3.2 Terrain, Drainage, and Soils

The subject property is situated within the central portion of Ecodistrict 5E-11 (Bancroft). Soils on the subject property are the result of the advance and retreat of the last continental glaciation of North America. Soils in this region tend to be shallow; however, the depth to bedrock can vary considerably over short distances. In general, soils are stony, sandy, and acidic in nature. Areas of bare bedrock are common at higher elevations where the glacier was thinner and less morainal sediment was deposited. Areas of typically acidic bare bedrock and very shallow mineral material are more common in the south (Wester, et al, 2018). Prominent bedrock knobs and ridges are common in the region and dominate features in some areas. The Precambrian landform expression strongly influences the topographic patterns of the region as well as the local overland drainage characteristics.

Field observations of topography on site reveal that the property is relatively level (0-15%) from the road to the cottage and shed on site. From 1-2m under the cottage on the west side to the shoreline the property contains a steep slope (>40%) which is currently naturally vegetated. Steep slopes (>40%) were also visible on adjacent lands to the east of the subject property. Overland drainage is directed to the west towards Bartlett Lake (**Figure 2**).

3.3 Vegetation Communities

In general, the subject property contains a mix of upland mixedwood forest and anthropogenic areas. Ecological communities were characterized and delineated through a combination of field investigations and aerial photograph interpretation; these communities are described below and mapped on **Figure 2**. Each description includes a list of representative plant species within each

community. All species observed within the study area are considered common locally and provincially.

3.3.1 Terrestrial Vegetation Communities

G058Tt Dry to Fresh, Coarse: Maple Hardwood

The subject property is a small shoreline property with a that is naturally vegetated with a forest community dominated by Sugar Maple (*Acer saccharum*). The property contains mid-aged to mature aged forest with a dense understory that includes native shrubs and groundcover species. Additional trees noted in the canopy include Balsam Fir (*Abies balsamea*), White Birch (*Betula pendula*), White Ash (*Fraxinus americana*), and Elm sp. (Ulmus sp.). Understory species noted throughout the property include Large-leaf Wood Aster (*Eurybia macrophylla*), Northern Bracken Fern (*Pteridium aquilinum var. latiusculum*), Purple Crown-vetch (*Securigera varia*), Rose sp. (*Rosa sp.*), Spreading Dogbane (*Apocynum androsaemifolium*), Sumac sp. (*Rhus sp.*), Lance-leaved Tiger Lily (*Lilium lancifolium*), Lily sp. (*Lilium sp.*), and Red Raspberry (*Rubus idaeus*). Some planted Eastern White Cedar (*Thuja occidentalis*) were present as a hedgerow and landscaping trees.

3.3.2 Fish Habitat

The subject property has frontage on Bartlett Lake, which is a small lake. Information regarding the species assemblage present in the lake was not available through either a Ministry of Natural Resources (MNRF) fact sheet or through the MNRF fish on-line website suggesting that the lake has not been surveyed.

During our site assessment, we reviewed the entire shoreline of the property to determine the type of nearshore fish habitat present. Habitat characteristics are consistent across the frontage. The nearshore habitat features fronting the shoreline of the subject property consist of a mix of gravel and sand substrates. Onshore slopes are steep directly adjacent to the lake with abundance riparian vegetation consisting primarily consisted of juvenile White Birch, Red Raspberry, Large-leaved Aster, Purple Crown-Vetch, and Rose species. There were planted juvenile Eastern White Cedar adjacent to the cottage.

Small patches of submerged and emergent aquatic vegetation were noted in front the subject property including Tape Grass (*Vallisneria americana*), Watershield (*Brasenia schreberi*.) and Water Lily sp. (*Nymphaea sp*.) which did not appear to be limiting or rare in the aquatic ecosystem. As such, based on the conditions documented on site, the shoreline frontage is likely classified as Type 2 habitat providing general movement and foraging habitat for a variety of fish species.

Planning staff have noted that the Water Quality policies must be implemented to ensure no negative impacts to Bartlett Lake. The impact assessment and mitigation measures section, therefore, focuses on potential impacts to water quality related to the development on the subject property to development activities that decrease water quality; attributed to both increase in phosphorous and decreases in dissolved oxygen in deep water habitat.

4 SIGNIFICANT NATURAL HERITAGE FEATURES

Based on the biophysical information collected during background information gathering, and the summarized existing conditions of the subject property as described above, **Table 2** below identifies

all SNHFs that are present (or potentially present) within the study area. Although we have identified many natural heritage features across the property, only those that are afforded protection through municipal, provincial, and federal policy and law are considered significant and are discussed further. RiverStone's rationale for identifying such features is provided in the sections that follow.

Table 2. Summary of the Assessment of Significant Natural Heritage Features included in the scope of work and identified within the Study Area.

Significant Natural Heritage Feature	Presence/Absence within the Subject Property/Adjacent Lands
Fish Habitat & Streams	*Present*. See **Section 4.1**
Wetlands (Including PSWs)	*Absent*. See **Section 4.2**
Areas of Natural and Scientific Interest	*Absent*. See **Section 4.3**
Habitat of Endangered and Threatened Species	*Potentially Present.* See **Section 4.4**
Significant Wildlife Habitat	*Not assessed.*

Shaded rows denote significant natural heritage features that are present or have the potential to be present within the study area.

4.1 Fish Habitat & Streams

Barlett Lake has the capacity to provide fish habitat, although survey information for this lake was not available at the time of the report so the species-specific habitat requirements could not be assessed. It is likely that the nearshore area of the subject property provides general habitat to a variety of fish species. An assessment of potential impacts to the fish habitat that may result from implementation of the proposed development plan is provided in **Section 5.3.1**.

4.2 Wetlands

No provincially significant wetlands (PSW) are present within the study area. No further assessment undertaken.

4.3 Areas of Natural and Scientific Interest (Life Science)

It is the responsibility of the Ministry of Natural Resources and Forestry (MNRF) to designate and administer mapping for areas of natural and scientific interest (ANSIs). No ANSI features are mapped on site. No further assessment undertaken.

4.4 Habitat of Endangered and Threatened Species

To assess the potential presence of individuals and/or habitat for endangered and threatened species within the study area, RiverStone staff conducted the following:

- Review of the list of species designated as endangered and threatened in Ontario, as per Schedules 2 and 3 of Ontario Regulation 230/08 [(Species at Risk in Ontario List (SARO List)], located here: https://www.ontario.ca/laws/regulation/080230. In our experience, the potential presence of most provincially endangered and/or threatened species can be ruled out based on their limited geographical ranges in the province and/or a lack of specific habitat conditions which they require to carry out key life processes.

- Review of the NHIC database for existing records of element occurrences for endangered or threatened species (data squares 18TR7506, 18TR7606 and adjacent squares). Databases of iNaturalist, OBBA, and ORAA were also reviewed as of July 2024.
- On-site investigations undertaken in 2024, during which vegetation conditions were characterized for detailed habitat-based assessment.

Information from the above assessment process was used to inform a site-specific screening, as contained in **Appendix 3**. Through this screening twenty-seven (27) species were identified that have the potential to be present or use vegetation communities on the subject property or on adjacent lands based on existing records and range mapping. This list of species was reduced to four (4) species that had the potential to be present on the subject property based on habitat availability noted during our site assessments.

Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*), may occur on the property based on the presence of suitable forested habitat. Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) are habitat generalists and can be found in most areas of Ontario, but in small numbers. Each of these species are discussed below, and where relevant, potential development-related impacts to these species are discussed further in **Section** . **4.4**.

4.4.1 Endangered Bat Species (*Myotis lucifugus, M. septentrionalis, Perimyotis subflavus* - Endangered)

These species, assessed as a species guild (related species with similar habitat characteristics), include several bat species listed as endangered in Ontario. Bats are highly mobile; however, individuals and groups of the noted bat species are also recognized as having some degree of fidelity to suitable local sites for daily and seasonal 'roosting' activities. While some species (*i.e.*, *Myotis lucifugus*) exhibit a preference for roosting in anthropogenic structures, natural roosting sites are also important. Natural roosting sites are generally associated with mature forests containing a sufficient density of large trees in various stages of decay, otherwise known as 'snags'. Snags provide features such as cavities and/or loose bark, on which bats rely for shelter and thermoregulation throughout the active season.

Woodland cover within the study area is fairly extensive in the southern area of the subject property and while no formal quantitative evaluation of bat habitat was conducted to support this assessment, we estimate that there is potential for on-site trees/woodland to support roosting habitat for endangered bat species.

Current direction from MECP prescribes that targeted surveys of treed habitats/snags are not necessary to quantify the quality/extent of potential habitat for endangered bat species IF a project would involve removal of only a small number of potential maternity or day roost trees in treed habitats (or none at all). This approach assumes that other appropriate mitigation measures (*i.e.*, timing windows) are employed to avoid impacts to individuals of endangered bat species. For our assessment, it is RiverStone's opinion that potential significant habitat features for bats could occur and it is not possible to rule out the potential for *individuals* of endangered bat species (or other bat species) to be present during the active season in any individual trees (*i.e.*, through migration and regular daily movements). Further discussion, including an assessment of potential impacts to individuals of endangered bat species resulting from implementation of the proposed development, is provided in **Section 5.4.1**

4.4.2 Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*)

Suckley's Cuckoo Bumble Bee is a nest parasite of other Bumble Bee species and is reliant on host species' nests and workers to rear their young. They tend to parasitize species that build their nests within abandoned rodent burrows and overwinter in leaf litter near host nests. This species pollinates a variety of flowers and has the potential to be present within anthropogenic and upland forest areas of the subject property (COSEWIC, 2019). Anthropogenic areas provide opportunities for nectar foraging for Suckley's and other Bumble Bee species, while the adjacent upland forest may provide nesting habitat.

RiverStone's background review did not identify records for Suckley's Cuckoo Bumble Bee on the subject property or adjacent lands and Bumble Bees were not observed on-site. Suckley's Cuckoo Bumble Bee is also more common in western Ontario. The probability of the species being present on the subject property is quite low, and disturbance to anthropogenic and upland forest areas due to the proposed redevelopment will be minimal. RiverStone does not anticipate negative impacts to this species as a result of the proposed development.

5 IMPACT ASSESSMENT AND RECOMMENDATIONS

5.1 Development Proposal

The current landowners are proposing to redevelop an existing deck, install a new deck and to install a septic tank in a gravel area where a storage shed is currently located. **Figure 3** illustrates the proposed development.

5.2 Impact Assessment

RiverStone's impact assessment below is intended to inform a review of the proposal by the appropriate approval authority. Our assessment is based on a review of existing conditions at the time of site investigations, as illustrated on **Figure 2** and in the photographic record contained in **Appendix 1**. The primary purpose of this report is to assess impacts and support impact mitigation for all features that receive protections under applicable environmental planning policies and regulations that were to be included in this scope of work. The potential for negative impacts on identified NHF is discussed in the sections below, and several recommendations are listed to support a scenario of no net negative impacts. In assessing and identifying potential negative impacts through a development process, it is important to highlight how the PPS defines negative impacts, *i.e.*:

> "…*degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities*"

Importantly, as stated in Section 13.2 of the Natural Heritage Reference Manual (for Natural Heritage Policies of the PPS):

> *The PPS definition for "negative impacts" does not state that all impacts are negative, nor does it preclude the use of mitigation to prevent, modify or alleviate the impacts to the significant natural heritage feature or area*".

RiverStone's impact assessment is intended to be reflective of the above guidance, with consideration for the integrity and function of each feature, and in acknowledgement that not all development and

site alteration represents a negative impact. RiverStone's assessment is intended to inform a review of the above proposal by the appropriate approval authority.

5.3 Water Quality and Fish Habitat

In general, development and site alteration present a series of common potential impacts to water quality, and fish habitat. Mitigation planning for protection of all these features and functions involves similar actions, and so the impact assessment for these natural heritage features is provided under a single section. Negative impacts to fish habitat associated with Bartlett Lake resulting from proposed development have the potential to occur via the following processes:

- stormwater runoff during construction activities resulting in increase sediment and nutrient loading
- modification of drainage patterns or flow rates
- inappropriately located sewage treatment systems that increase nutrient (phosphorous) loading to waterbodies
- increased runoff due to an increase in the extent of hard surfaces (e.g., rooftops, patios, pathways)
- changes to terrestrial vegetation and structural features (e.g., removal of vegetation or soil, importation of aggregates) resulting in increased erosion and reduced nutrient uptake.
- construction of in-water structures (e.g., culverts, docks, bridges)
- changes to in-water structural features (e.g., substrates, woody debris, aquatic vegetation)

Although the land use changes during the construction process had the potential to have negative impacts on water quality, it is RiverStone's opinion that there is sufficient shoreline vegetation to offset any impacts from an increase in impervious surfaces caused by the installation of a new deck. The installation of a new septic tank should provide an improvement over existing conditions and is proposed in a location that is already cleared to accommodate a storage shed so additional vegetation removal is not anticipated. No negative impacts to Bartlett Lake are anticipated.

Alteration Within Shoreline Buffer

The following recommendations related to development and areas directly adjacent to Bartlett Lake including the existing cottage and shoreline amenity area:

- **Consider omitting the deck on the southwest side of the property with a proposed location of 7.1m from the lake unless a slope stability study is conducted.**

- **Vegetation within the shoreline buffer must be maintained in its natural state, except for the existing stairs/pathways to the shoreline. No additional vegetation or trees should be removed within the buffer unless they are a safety hazard (assessed by an ISA certified arborist) and debris from clearing or materials to be used in construction will not be placed within the buffer.**

- **A Site Plan Agreement or similar instrument that restricts vegetation removal, site alteration and/or disturbance outside of the development envelope as shown on Figure 3 should be required prior to lot development.**

- **No additional vegetation or trees outside of the development envelope should be removed unless they are a safety hazard (assessed by an ISA certified arborist) and debris from clearing**

or materials to be used in construction will be placed within the existing amenity area and/or driveway.

5.3.1 Fish Habitat

As part of the impact analysis, the potential to cause harmful alteration, disruption, or destruction of fish habitat (HADD), was assessed. Although the land use changes and construction practices that are proposed have the potential to have negative impacts on water quality, fish and fish habitat, it is RiverStone's opinion that the measures recommended above can mitigate potential negative impacts, so that there is no serious harm to fish in the open water feature.

To ensure that fish habitat is not negatively impacted by the proposed development and is in compliance with the *Fisheries Act*, RiverStone recommends the following measures:

- **Before native soils are exposed, sediment and erosion control works, in the form of sediment fencing, should be installed outside of the development envelope and upslope and as far as possible from the Bartlett Lake shoreline. These works should be maintained in good working order until the exposed soils have become revegetated.**
- **The sediment fencing should be constructed of heavy fabric and solid posts and should be properly trenched to maintain its integrity during weather events.**
- **During construction, the on-site supervisor should be responsible for daily inspections of the sediment and erosion control measures, and immediately complete any repairs required, until such time as the disturbed areas have been fully stabilized.**
- **A Site Plan Agreement be prepared that includes location, materials and extent of all hardened surfaces, and location and detail of sediment and erosion control fencing.**
- **DFO should be notified immediately if a situation occurs or if there is imminent danger of HADD. If there is an occurrence, corrective measures must be implemented. This may occur during construction or otherwise.**

Septic System

A new septic tank is required as part of the order to remedy. To mitigate sewage related impacts, the Ontario Building Code (OBC) identifies constraints to consider when locating Class IV septic tank/leaching bed systems. Physical characteristics of a site that can constrain the placement of these systems include soil conditions, slope conditions, and site drainage as well as minimum setbacks from watercourses, water bodies, and wells.

In section 5.4.4.2 the County of Hastings official plan states that "new septic systems are encouraged to be located as far back from the shoreline as is reasonable and possible, and shall be located a minimum of 30 meters s (100 feet) from the high water mark or in accordance with the setback requirements for cold water lakes if applicable. Where it is not physically possible (due to terrain features, lot depth or design features) to locate the leaching bed and mantle at such a distance, a lesser setback that is no less than 15 metres (50 feet) may be permitted in accordance with the approved recommendations of a Site Evaluation Report pursuant to Part A - Section 7.8.8 of this Plan. Septic systems using tertiary treatment technology may be required in this instance". There is not a suitable location for a new septic system that is 15m from the water due to the very small size of the subject

property. A proposed new tank will be 12.6 m from the lake shoreline which is the furthest point from the shoreline adjacent to the road given the size and shape of the subject property (**Figure 3.**, **Appendix 3**). Given the topography and steep slopes on site, the distance between the lake and septic tank has been maximized

It is determined that a new septic system rather than a septic tank is required, RiverStone recommends the following measures:

- **The proposed septic system should be designed by a licenced professional and installed according to any permit issued by the municipality.**
- **The installation of the septic system must be completed must by a licenced installer.**
- **If a full septic system is required and not just a holding tank then any imported soils used for leaching bed construction should be silt free, fine to medium grained non-calcareous soils, having a high concentration of iron and aluminum and low concentration of calcium carbonate. Native soils removed for the placement of the re-constructed dwelling may also be used should they meet all criteria noted above and those for septic use as noted in the Ontario Building Code.**

5.4 Endangered and Threatened Species

Appendix 2 presents our assessment of potential impacts on species and ecological communities of conservation interest. The results of our analysis suggest that Little Brown Myotis (*Myotis lucifugus*), the Tricolored Bat (*Perimyotis subflavus*), the Northern Myotis Bat (*Myotis septentrionalis*) and the Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) had the potential to use features found on the property.

5.4.1 Endangered Bats

Potential habitat for three (3) endangered bats, (Little Brown Myotis, and Northern Myotis and Tricolored Bat, hereafter "endangered bats") is located across the subject property in the Maple forested communities, which contain both coniferous and deciduous species. In the absence of detailed site-specific data, and based on RiverStone's professional experience, forested ecosites throughout the subject property may be expected to support some level of seasonal bat activity, which may include endangered bat species. These communities contain snag trees that could support maternal roosting habitat for each of the endangered bats. As endangered species, individuals cannot legally be killed, harmed, or harassed as per Section 9 of Ontario's *Endangered Species Act* (ESA). RiverStone provides a simple mitigation approach below (*i.e.*, restrictive vegetation clearing windows) to ensure that individual endangered bats are not killed, harmed, or harassed through the development process (should they be present).

Habitat for endangered or special concern bats is prevalent throughout Hastings County. As a predominantly forested area, habitat for maternal roosting bats is not limited across the landscape. The primary reason for these species of bats being listed under the *ESA* is the prevalence of White-nose Syndrome, which is a fungus that infects bats as they hibernate over winter. This fungus grows on their muzzle, ears and wing-membranes, continually waking them from hibernation and causing dehydration, resulting in mortality.

Bats predictably depart maternity roosts for hibernacula sites in the fall of any given year, meaning that timing restrictions will reliably avoid any direct harm to individuals. Tree clearing, site alteration, and the construction of structures are all proposed as part of the development associated with the current application. To prevent impacts upon the habitat of endangered bats that may be utilizing the forest communities for maternal roosting habitat on the subject property, RiverStone recommends the following for future development:

- **Although not anticipated, if tree removal is necessary trees should only be removed from October 1st to April 1st.**
- **If tree clearing or demolition must occur between April 1 and October 1, a qualified professional should complete a combination of snag surveys and acoustic monitoring, with technical guidance from the MECP, for the area where tree clearing is proposed.**
- **Limit any tree clearing to condensed development envelope, avoid unnecessary tree removals, and retain trees that are in poor health but do not represent a hazard.**

With the implementation of the above-noted mitigation measures, it is RiverStone's opinion that the development plan will not result in adverse impacts to any endangered bat species or the availability of their habitat on the local landscape.

6 CONFORMANCE WITH APPLICABLE ENVIRONMENTAL POLICIES

The following commentary summarizes the municipal environmental legislation and policies that are relevant to the proposal being evaluated here and describes how the recommendations provided in this report will permit the proposed land-use changes to comply with these provisions.

6.1 Federal Fisheries Act (R.S.C., 1985, amended 2019-08-28)

The *Federal Fisheries Act* states that:

34.4 (1) No person shall carry on any work, undertaking or activity, other than fishing, that results in the death of fish.

35. (1) No person shall carry on any work, undertaking or activity that results in harmful alteration, disruption or destruction of fish habitat.

DFO further states that "under subsection 35(1) a person may carry on such works, undertakings or activities without contravening this prohibition, provided that they are carried on under the authority of one of the exceptions listed in subsection 35(2), and in accordance with the requirements of the appropriate exception. In most cases, this exception would be Ministerial authorizations granted to proponents in accordance with the *Authorizations Concerning Fish and Fish Habitat Protection Regulations."*

The recommendations included in this report will keep development and site alteration away from all fish habitat identified on the subject property and provides mitigation measures that address the potential for construction phase impacts. As such, it is the opinion of RiverStone that activities proposed on the property will not contravene the *Fisheries Act*, and that an Authorization under the Section 35(2) is not required. Should however, during this project, situations arise and lead to

occurrences that result in a HADD, persons responsible for the project have a "duty to notify" DFO, take corrective actions, and provide written reports under Section 38 of the *Act*.

6.2 Federal *Migratory Birds Convention Act, 1994* (MBCA)

Section 6 of the Migratory Birds Regulations under the MBCA makes it an offence to "disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird."

Restricting clearing of vegetation for the proposed development to times outside of the period April 1 to August 31, will prevent contravention of Section 6 of the regulations.

If site alteration is going to occur during this period, a nest survey should be conducted by a qualified avian biologist prior to commencement of construction activities to identify and locate active nests of migratory bird species covered by this Act. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.

6.3 Provincial *Endangered Species Act, 2007* (ESA)

The *Endangered Species Act, 2007* (ESA) came into effect June 30, 2008, and replaced the previous provincial *Endangered Species Act*. The following excerpt from the explanatory note provided with the Act summarizes the protection afforded to species:

> If a species is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species, the Bill prohibits killing, harming, harassing, capturing, taking, possessing, transporting, collecting, buying, selling, leasing, trading or offering to buy, sell, lease or trade a member of the species, or selling, leasing, trading or offering to sell, lease or trade anything that is represented to be a member of the species.

Protection afforded to habitats of species is described as follows:

> If a species is listed on the Species at Risk in Ontario List as an endangered or threatened species, the Bill prohibits damaging or destroying the habitat of the species. This prohibition also applies to an extirpated species if the species is prescribed by the regulations. The regulations may specifically prescribe an area as the habitat of a species but, if no habitat regulation is in force with respect to a species, "habitat" is defined to mean an area on which the species depends, directly or indirectly, to carry on its life processes. With respect to certain species that were classified before first reading of the Bill, the prohibition on damaging or destroying habitat does not apply until the earlier of the date a regulation prescribing the habitat of the species comes into force and the fifth anniversary of the date the requirement to establish the Species at Risk in Ontario List comes into existence.

Appendix 2 lists the species protected under provisions of the ESA that have the potential to occur on the subject property and/or the adjacent lands. As outlined in **Section 4.4**, the likelihood of contravening the ESA, should the proposed activities be implemented, can be reduced to an acceptable level by following RiverStone's recommended mitigation measures.

6.4 Provincial Policy Statement, 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13.

The significant natural features documented on the subject property include potential significant wildlife habitat. Based on this identified feature the following provisions from Section 2.1 of the 2020 PPS are relevant to this assessment:

> **2.1.6** *Development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial* and *federal requirements*.

As per **Section 3.3.2** fish habitat was identified along the shoreline of the subject property fronting onto Bartlett Lake. Adherence to the recommendations outlined in **Section 5.3** of this report will ensure there are no negative impacts to fish habitat.

> **2.1.7** *Development* and *site alteration* shall not be permitted in habitat of endangered species and threatened species, except in accordance with *provincial and federal requirements*.

The impact assessment provided in **Section 5** provides recommendations to avoid impacts to endangered and threatened species. Adherence to the recommendations outlined therein will ensure that these activities do not occur in areas that could be considered habitat of endangered or threatened species which is consistent with policy 2.1.7.

> **2.1.8** *Development* and *site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*.

The extent of the area evaluated for negative impacts on potentially significant natural heritage features as described in in **Section 5** and the associated appendices are more than sufficient to ensure that impacts on adjacent lands were appropriately assessed. Careful evaluation of the ecological function of the lands potentially affected by the permissible development and site alteration on the subject property indicates that the activities will be consistent with policy 2.1.8, as long as the recommended mitigation measures are followed.

6.5 Hastings County Official Plan (August 2018)

The Hastings Official Plan provides recommendations regarding the protection of the natural environment across Hastings County. Many of the recommendations parallel the requirements set out in the ESA and PPS; consequently, the preceding discussion of how a development on the subject property would comply with those requirements similarly applies to policies in the Hastings Official Plan.

Section 4.2.4. of the Official Plan outlines the policies related to fish habitat.

4.2.4.1 Fish habitat provides food, cover and conditions for successful reproduction and support of a species throughout its lifecycle. Lakes, rivers, streams, ponds, shoreline areas and many wetlands provide fish habitat. Intermittent and seasonally flooded areas can also provide important habitat for some fish species at certain times of the year. In addition, in-water structures such as logs, stumps and other woody debris, pools and riffle areas, riparian and aquatic vegetation and ground water

recharge/discharge areas also provide habitat. Habitat includes the watercourses that act as corridors that allow fish to move from one area to another.

4.2.4.3 New development and/or site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. New development and/or site alteration shall not be permitted on adjacent lands within 120 metres of fish habitat unless it has been determined in an approved Environmental Impact Statement (EIS) pursuant to Part A - Section 7.8.6 of this Plan that there will be no negative impacts on the natural features or its ecological functions.

4.2.4.6 The policies of Part A - Section 5.4.5 apply to development and/or site alteration along Waterfront areas and are intended to ensure sensitive development adjacent to fish habitat in the County will not negatively impact on natural features or their ecological functions.

Interpretation: The proposed development includes construction of a new deck within 30 m of Barlett Lake, which cannot be located elsewhere on site due to the location of the existing development and the small lot size. The recommended measures to reduce overland flow including the installation of a new septic system which is graded such that overland flow will not travel directly towards Barlett Lake will improve water quality and fish habitat compared to existing conditions prior to redevelopment.

6.6 Municipality of Hastings Highlands Zoning By-law 2014-14 (Consolidated February 2024)

The subject property is currently zoned Waterfront Residential with the current application for a minor variance to build a new deck and for the installation of a septic system required as part of an order to remedy that was posted on site at the time of the site visit.

Section 5.9 of the Zoning By-law outlines the requirements for “lands adjacent to waterbodies, watercourses, embankments, floodplains and environmentally sensitive lands”. Section 5.9.2 states that no building, structure, or septic tank installation including the weeping tile field (‘no development’) shall be located: i) within 30 metres (98.4 ft.) of the highwater mark of a waterbody or permanent watercourse.

Interpretation: A new septic system is required as part of the order to remedy. Given the constraints on the subject property including the limited lot size and the existing development, there are not alternative locations where the proposed development could be located.

7 CONCLUSIONS

Based upon the findings presented in this report and contingent upon the implementation of the recommendations made herein, it is our conclusion that the proposed development application on the subject property will have a very low likelihood of negatively impacting any identified natural heritage features and functions features protected under relevant municipal, provincial, or federal environmental policies as outlined. RiverStone is of the opinion that the proposed development is consistent with the relevant environmental legislation and policies. We suggest that the recommendations in this report be incorporated into the development and site plan agreement for the subject property. Finally, these conclusions are also dependent upon the recommended preventative measures being implemented through a development plan that is subsequently enforced with appropriate by-laws.

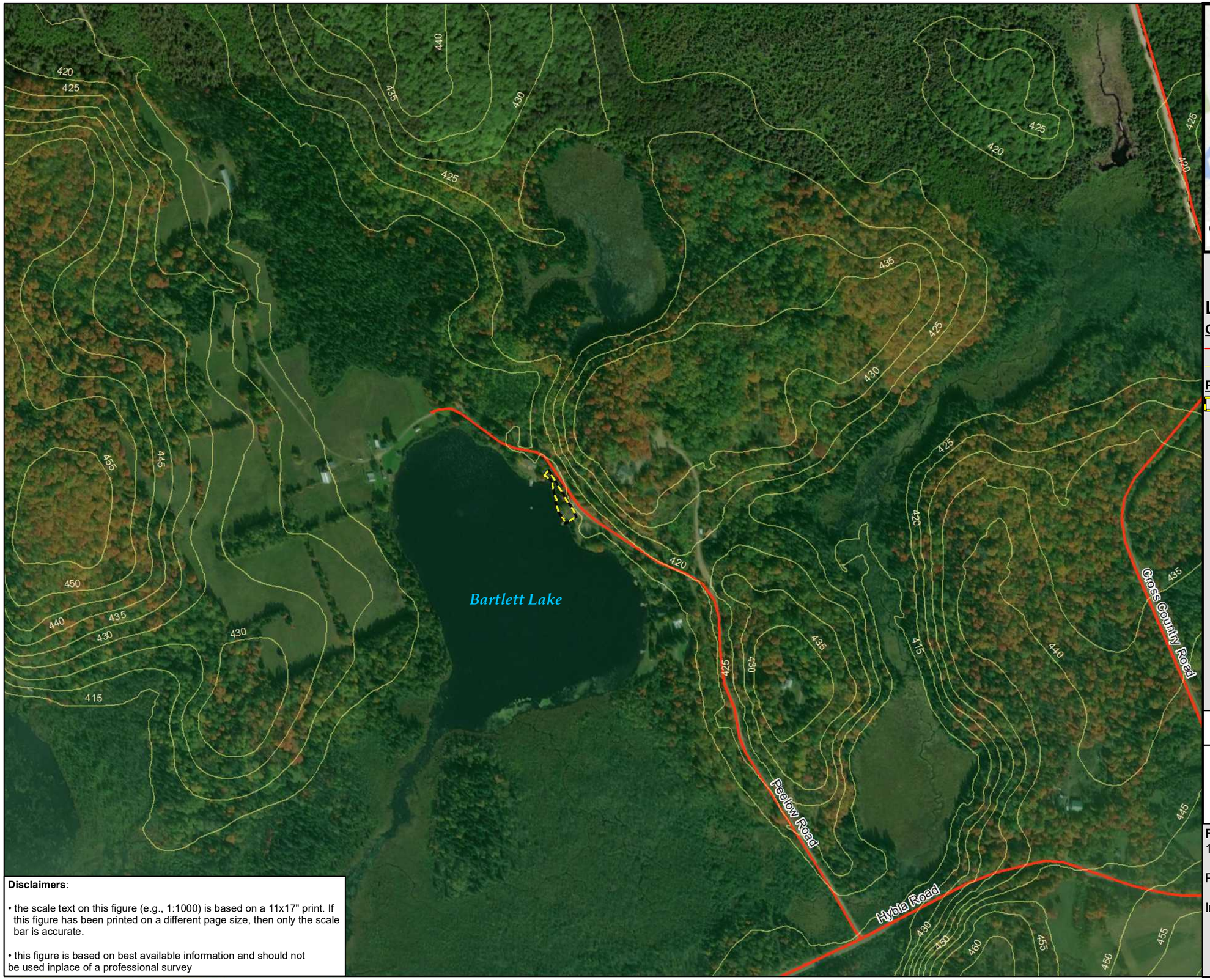
8 REFERENCES

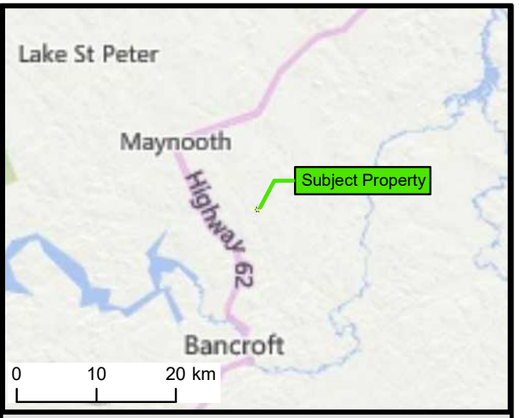
Cadman, M. D., D. A. Sutherland, G. G. Beck, D. Lepage, and A. R. Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001–2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, Ontario Nature, Toronto.

Henson, B. L. and K. E. Brodribb. 2005. Great lakes conservation blueprint for terrestrial biodiversity, volume 2: ecodistrict summaries. 344 pp.

OMNR. 2010. Natural heritage reference manual for natural heritage policies of the provincial policy statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.

Wester, M., P. Uhlig, W. Bakowsky, and E. Banton. 2009. Great Lakes-St. Lawrence Ecosite Fact Sheets (third draft)





N

Legend

Ontario Base Mapping (OBM)

- Roads
- 5 m Contours

Planning Boundaries

- Subject Property

Orthorectified aerial photo - spring 2018

Scale	RS Project No.	Date Last Updated	By
1:5,000	2024-038	Aug 21, 2024	JG

0 75 150 Metres

RIVERSTONE ENVIRONMENTAL SOLUTIONS INC.

Figure 1. Location of Subject Property
147 Peelow Ave, Municipality of Hastings Highlands

Prepared for: Scott Verreault

Inset: General Location of Subject Property

Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- this figure is based on best available information and should not be used inplace of a professional survey

Legend

Ontario Base Mapping (OBM)
- Roads
- 5 m Contours

Planning Boundaries
- Subject Property

Features Taken from Existing Survey
- Water's Edge (June 14, 2024)
- Dwelling
- Deck
- Shed (To Be Removed)
- Dock
- Path

Natural Heritage Features - Identified by RiverStone
- Direction of Overland Flow
- Type 2 Fish Habitat

Ecological Communities
- ANTH - Anthropogenic
- G058Tt - Dry to Fresh, Coarse: Maple Hardwood

N

Orthorectified aerial photo - spring 2018

Scale	RS Project No.	Date Last Updated	By
1:350	2024-038	Aug 21, 2024	JG

0 5 10 Metres

RiverStone Environmental Solutions Inc.

Figure 2. Existing Conditions
147 Peelow Ave, Municipality of Hastings Highlands

Prepared for: Scott Verreault

Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- this figure is based on best available information and should not be used inplace of a professional survey

Legend

N

Ontario Base Mapping (OBM)
- Roads
- 5 m Contours

Planning Boundaries
- Subject Property

Features Taken from Existing Survey
- Water's Edge (June 14, 2024)
- Dwelling
- Deck
- Dock
- Path

Natural Heritage Features - Identified by RiverStone
- Direction of Overland Flow
- Type 2 Fish Habitat

Development Setbacks Required by Relevant Approval Authorities
- 30 m Shoreline Setback (Hastings Highlands By-law 27.72)
- 30m Vegetation Buffer (Hastings Highlands By-law 5.9.3 iii)

Proposed Development and Site Alteration
- Deck
- Holding Tank

Drawing:
BISHOP GEYER SURVEYING INC.
SURVEYOR'S REAL PROPERTY REPORT
Date Drawn: JUNE 26,2024
W.O. 2024-64-S1
Rev. A

Orthorectified aerial photo - spring 2018

Scale	RS Project No.	Date Last Updated	By
1:350	2024-038	Sep 18, 2024	JG

0 5 10 Metres

RIVERSTONE ENVIRONMENTAL SOLUTIONS INC.

Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- this figure is based on best available information and should not be used inplace of a professional survey

Figure 3. Proposed Development
147 Peelow Ave, Municipality of Hastings Highlands

Prepared for: Scott Verreault

Appendix 1. Select Photos from Site Visit

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

Photo 1. Existing driveway, cottage, steep slopes and floating dock (July 25th, 2024).

Photo 2. Shed to be removed (July 25th, 2024))

.

Photo 3. Existing deck adjacent to cottage (July 25th, 2024).

Photo 4. Existing shoreline conditions, photo of cottage taken from road (July 25th, 2024).

Photo 5. View of cottage taken form the dock (July 25th, 2024)).

Photo 6. Existing shoreline conditions and access stairs (July 25th, 2024).

Photo 7. Existing vegetation in the northern area of the subject property (July 25, 2024).

Photo 8. View of subject property, stairs and dock (July 25, 2024).

Photo 9. Bartlett Lake and cement footings (July 25, 2024).

Photo10. View of vegetation including tree stump in front of cottage on subject property (July 25, 2024).

Appendix 2. Assessment of Habitat of Endangered and Threatened Species

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

Species	ESA Status	General Description of Habitat and Range	Is the study area within the current known range of the species.	Do applicable databases contain records for this species within or adjacent to the study area.	Is suitable habitat present within the study area.	Is suitable habitat present within lands adjacent to the study area.	Discussion of relevance to proposal
American Ginseng (*Panax quinquefolius*)	END	American Ginseng requires well-drained but moist acidic to neutral soils overlying limestone or marble bedrock. They are obligate understory plants found in undisturbed mature deciduous and mixed forests, and occasionally in coniferous forests and swamps.	YES	NO	NO	NO	Suitable habitat is present on the local and regional landscape; however, the forest community present does not provide the potential to provide habitat. No species were observed during site assessments using a wandering transect. No further assessment undertaken.
Bank Swallow (*Riparia riparia*)	THR	The Bank Swallow is a small aerial insectivore bird that nests colonially in burrows they excavate within banks. Colonies will nest in bluffs, riverbanks, aggregate pits, roadside embankments, and topsoil piles near open habitat that provides a steady source of insects. Colony sites must also be near roosting areas in wetland, reed, or cane beds.	YES	YES, OBBA	NO	NO	The OBBA contains a possible breeding record for the associated 10km2 data square. No local records are present in NHIC or iNaturalist. No suitable habitat was observed on the subject property. No further assessment undertaken.
Black Ash (*Fraxinus nigra*)	END	The Black Ash grows everywhere in Ontario except the Far North. These trees require moisture, and are commonly found in northern swampy woodlands, from eastern Manitoba, throughout Ontario, and as far east as Newfoundland.	YES	NO	NO	NO	Suitable habitat is present on the local and regional landscape; however, the forest community present does not provide the potential to provide habitat. No species were observed during site assessments using a wandering transect. No further assessment undertaken.
Blanding's Turtle (*Emydoidea blandingii*)	THR	Blanding's Turtle are semi-aquatic and use wetland habitats with shallow water and abundant vegetation. Their habitat includes a broad range of wetlands, forest clearings, and meadows. They breed in aquatic habitat and nest in open natural and anthropogenic upland areas.	YES	NO	NO	NO	Suitable wetland habitat with appropriate water depths and water plants was not present to support this speciesNo further assessment provided.
Bobolink (*Dolichonyx oryzivorus*)	THR	Nests and forages in meadows, grasslands, hayfields, and pastureland. Fields must have 25% or less woody plant cover. They typically require large fields (>4ha) and avoid small, fragmented habitats. They also avoid habitat within 75 m of a forest edge.	YES	YES, OBBA	NO	NO	The OBBA contains a possible breeding record for the associated 10 km2 data square and suitable habitat may be present on the local and regional landscape. No local records are present in NHIC or iNaturalist and the subject property does not contain hayfield or pastureland that would provide suitable breeding habitat. No further assessment provided.
Butternut (*Juglans cinerea*)	END	Butternut is shade intolerant and grows in rich, moist, well-drained loams often along streambanks. Butternut is also found in well-drained gravel sites. It is often found at forest edges where it can access abundant sunlight.	YES	NO	NO	POSSIBLE	While suitable habitat may be present where soil depths are deeper, this species was not observed during the site investigation. No further development is proposed for the property and adjacent lands will not be impacted. No further assessment provided.
Cerulean Warbler (*Setophaga cerulea*)	THR	Found in two small breeding clusters in the Carolinian Forest and the Frontenac Axis. They breed in hilly, mature deciduous forests with a preference for oak and/or maple dominated forests with swampy bottomlands. They are area and edge-sensitive and require large continuous tracts of forest.	YES	NO	NO	NO	While deciduous species are present on the subject property, the property does not contain the large continuous tract of forest habitat required to support Cerulean Warbler. No further assessment undertaken.

[1]Highlighted species are present on or are likely to be present on the subject property.

Species	ESA Status	General Description of Habitat and Range	Is the study area within the current known range of the species.	Do applicable databases contain records for this species within or adjacent to the study area.	Is suitable habitat present within the study area.	Is suitable habitat present within lands adjacent to the study area.	Discussion of relevance to proposal
Chimney Swift (*Chaetura pelagica*)	THR	The Chimney Swift historically nested and roosted in large hollow trees, rock walls, and other vertical surfaces. They now use human-made structures like uncapped chimneys and have high site fidelity to nesting chimneys. 95% of nests are within 1 km of a waterbody.	YES	NO	NO	NO	No local records are present in NHIC or iNaturalist and the subject property does not contain vertical structures or surfaces that would provide suitable habitat. No further assessment provided.
Eastern Hog-nosed Snake (*Heterodon platirhinos*)	THR	Eastern Hog-nosed snakes require a mosaic of habitats with sandy, well-drained soil and open vegetation close to water with a supply of American Toads. Their Ontario distribution is limited by climate and soil to the French River/Lake Nipissing and Carolinian areas.	YES	NO	NO	POSSIBLE	Suitable habitat is present on the local and regional landscape; however, the forest community present does not provide the potential to provide habitat. No species were observed during site assessments. No further assessment undertaken.
Eastern Meadowlark (*Sturnella magna*)	THR	Nests and forages in meadows, grasslands, shrubby fields, hayfields and pastureland. Prefers habitat with >80% grass cover. Needs a minimum of 5 ha of continuous habitat.	YES	NO	NO	NO	The subject property or adjacent lands do not contain meadows or grasslands that would provide suitable breeding habitat. No further assessment provided.
Eastern Prairie White-fringed Orchid (*Platanthera leucophaea*)	END	The Eastern Prairie Fringed Orchid grows in open fens and wet prairies within southern Ontario. They require high sun exposure as well as high moisture. Populations are sparse, with most locations well documented.	YES	NO	NO	NO	Suitable habitat is present on the local and regional landscape; however, the forest community present does not provide the potential to provide habitat. No species were observed during site assessments. No further assessment undertaken.
Eastern Small-footed Myotis (*Myotis leibii*)	END	Eastern Small-footed Myotis overwinter in caves and mines in Ontario and do not disperse far from their hibernacula during the summer. They can be found roosting in rocky habitats singly or in groups but will also use human structures as day roosts. They are aerial insectivores and forage in forests, rocky habitats, and ponds.	YES	YES	NO	NO	The assessment area and adjacent lands lack rocky habitat with table rocks or talus and anthropogenic structures that would support this species. This species is not anticipated to use the subject property or adjacent lands. No further assessemnt provided.
Eastern Whip-poor-will (*Antrostomus vociferus*)	THR	The Eastern Whip-poor-will forages in open natural and anthropogenic habitats and nests in semi open forests and forest edges with well-drained soils and moderate vegetation cover. Habitat immediately at the nest will be a short herbaceous plant, shrub, or sapling providing cover and shade with nearby perches for adults.	YES	NO	NO	POSSIBLE	Suitable habitat may be present on the local and regional landscape. The assessment area does not contains rock barren habitat. This species is not anticipated to use the assessment area. No further assessemnt provided.

[1]Highlighted species are present on or are likely to be present on the subject property.

Species	ESA Status	General Description of Habitat and Range	Is the study area within the current known range of the species.	Do applicable databases contain records for this species within or adjacent to the study area.	Is suitable habitat present within the study area.	Is suitable habitat present within lands adjacent to the study area.	Discussion of relevance to proposal
Lake Sturgeon (*Acipenser fulvescens*)	END/THR	Lake Sturgeon need large continuous habitats in river and lake systems to provide for spawning, larval, juvenile, sub-adult, and adult habitat. Spawning takes place in shallow fast flowing headwaters where a natural or man-made barrier occurs. Spawning substrates are gravel, rock, hardpan, or sand. Larval and juvenile fish use clayey substrate habitats and older fish inhabit deep pools.	YES	NO	NO	NO	The subject property does not contain river or lake habitat suitable for Lake Sturgeon.
Least Bittern (*Ixobrychus exilis*)	THR	Breeds in large marshes within Southern Ontario. Creates nest platforms from tall, dense emergent vegetation within 10m of water and prefers Typha spp. Will use other emergent vegetation. Needs 200 ha of wetland for nesting and foraging but does not need to be continuous wetland. Prefers complexes of smaller wetlands. Will avoid marshes surrounded by >30% forest cover or containing large trees.	YES	NO	NO	NO	No local records are present in NHIC or iNaturalist and the subject property does not contain wetland habitat with emergent vegetation that would be suitable for this species. No further assessment provided.
Lesser Yellowlegs (*Tringa flavipes*)	THR	Lesser Yellowlegs migrate through southern Ontario, stopping in wetlands, flooded fields, river and lake shorelines, and sewage lagoons. They prefer marshes dominated by Softstem Bulrush and Smooth Cordgrass. During migration they form flocks ranging from a few dozen to several thousand birds. They may form mixed flocks with Greater Yellowlegs and Solitary Sandpiper.	YES	NO	NO	NO	There are no OBBA, NHIC, or iNaturalist database records for this species within the respective data squares and the subject property does not contain wetland communities dominated by softstem bulrush and smooth cordgrass that would be suitable habitat for this species. No further assessment provided.
Little Brown Myotis (*Myotis lucifugus*)	END	Their hibernacula are within caves and abandoned mines, wells, and tunnels. Maternity colonies are within a few kilometers of hibernacula within snag trees, rock crevices, exfoliating tree bark, and anthropogenic structures. Roosts and swarming sites are in similar areas around the hibernacula.	YES	YES	YES	YES	The assessment area contains wooded habitat containing trees appropriate for roosting by this species. While no development is currently proposed for the subject property in the wooded area if tree removal is required it could result in the removal of potential habitat. Further assessment provided in report.
Loggerhead Shrike (*Lanius ludovicianus*)	END	The Loggerhead Shrike forages in open grasslands and edge habitats. They require scattered trees and bushes in their habitat for perches and nest sites, and vegetation with large thorns or barbed wire to impale prey. Breeding habitat is exceedingly rare in Ontario, and most extant habitat is well documented.	YES	NO	NO	NO	No local records are present in NHIC or iNaturalist and the subject property does not contain grassland or edge habitat that would be suitable for this species. No further assessment provided.
Northern Myotis/Northern Long-eared Bat (*Myotis septentrionalis*)	END	Northern Myotis are found below the tree line in Canada and are mostly absent from the prairies. They use live and dead trees near water in forest habitats when active and migrate to caves and abandoned mines for hibernation.	YES	YES	YES	YES	The assessment area contains wooded habitat containing trees appropriate for roosting by this species. While no development is currently proposed for the subject property in the wooded area if tree removal is required it could result in the removal of potential habitat. Further assessment provided in report.
Ogden's Pondweed (*Potamogeton ogdenii*)	END	Ogden's Pondweed is an annual, submerged aquatic plant with threadlike rigid stems and no rhizome. They are found only in Hastings County in Ontario. They grow in clear, slow moving water within streams, beaver ponds, and lakes. They prefer alkaline water.	YES	YES	POSSIBLE	POSSIBLE	The subject property is located within the range for this species and there is a record in NHIC for this species within the respective data squares were noted. No in waterwork is proposed as part of the deveopment and therefore no impacts are anticipated. No further assessment provided.

[1]Highlighted species are present on or are likely to be present on the subject property.

Species	ESA Status	General Description of Habitat and Range	Is the study area within the current known range of the species.	Do applicable databases contain records for this species within or adjacent to the study area.	Is suitable habitat present within the study area.	Is suitable habitat present within lands adjacent to the study area.	Discussion of relevance to proposal
Red-Headed Woodpecker (*Melanerpes erythrocephalus*)	END	The Red-headed Woodpecker lives in open woodland and woodland edges and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, that the bird uses for nesting and perching. The Red-headed Woodpecker is found across southern Ontario, where it is widespread but rare.	YES	YES, OBBA	NO	NO	Records of occurrence for this species are within the 10km2 OBBA data square and this species can be found in many generic locations, the assessment area does not support any open areas with large numbers of dead-standing trees that would represent ideal habitat. In general, there is no expectation that the assessment area is supporting functional habitat for this species. No further assessment provided.
Short-eared Owl	THR	The Short-eared Owl breeds in northern Ontario and is found year-round in southern Ontario. They use open habitats (tundra, grassland, pasture) to nest on the ground and overwinter in open areas with nearby roosting trees. They shelter from inclement weather in conifers and emergent wetland vegetation.	YES	NO	NO	NO	There are no OBBA, NHIC, or iNaturalist database records for this species within the respective data squares and the subject property does not contain open habitats (tundra, grassland, pasture) that would be suitable for this species. No further assessment provided.
Shortnose Cisco (*Coregonus reighardi*)	END	The Shortnose Cisco is found in Lakes Ontario, Huron, and Michigan. Very little is known about their habitat requirements, but they are found at 22 to 92 m and spawn at depth in the spring. They feed on freshwater crustaceans in clear, cold water.	YES	NO	NO	NO	The subject property is not located within one of the Great Lakes where Shortnose Cisco has been found.
Small White Lady's-slipper (*Cypripedium candidum*)	END	Small White Lady's-slipper is found in Hastings County and on Walpole Island First Nation. They grow on moist, imperfectly drained, calcareous sandy loam to loam soils in remnant prairie or savannah, or in fens. They require periodic fire or grazing disturbance.	YES	NO	NO	POSSIBLE	There are no NHIC, or iNaturalist database records for this species within the respective data squares for the property. The subject property contains forested terrestrial habitat along the shoreline of Bartlett Lake which does not include calcareous sandy loam soil suitable for this species. No further assessment provided.
Spotted Turtle (*Clemmys guttata*)	END	The Spotted Turtle uses a mix of terrestrial and aquatic habitats. Aquatic habitats include wetlands, ponds, vernal pools, creeks, streams, sheltered bay edges, stormwater ponds, and man-made channels. Their terrestrial habitats are shorelines, rocky outcrops, upland forests, open fields, and meadows.	YES	NO	NO	NO	There are no NHIC, Herp Atlas, or iNaturalist database records for this species within the respective data squares for the property. The subject property contains a mix of terrestrial and aquatic habitats including shoreline; however, the combination of suitable aquatic and terrestrial habitat was absent and the range for this species is typcially found around Georgian Bay and isolated spots in southern Ontario.
Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*)	END	Suckley's Cuckoo Bumble Bee is a nest parasite of the Western Bumble Bee and Yellow-banded Bumble Bee. It is mainly a western species but has occasional records throughout Ontario. They are habitat generalists found in most areas Ontario, and generalist nectar foragers. The bees they parasitize tend to build nests in abandoned rodent burrows.	YES	NO	POSSIBLE	POSSIBLE	Burrowing rodents and host Bumble Bee species may potentially be present on the subject property or adjacent lands. Further discussion is provided in the report.
Tricolored Bat (*Perimyotis subflavus*)	END	The Tri-colored Bat have a scattered distribution and are found as far north as Sudbury. They are found in a variety of forested habitats They overwinter alone in caves and mines and roost in dead vegetation clumps and lichen in forested habitats near water.	YES	YES	YES	YES	The assessment area contains wooded habitat containing trees appropriate for roosting by this species. While no development is currently proposed for the subject property in the wooded area if tree removal is required it could result in the removal of potential habitat. Further assessment provided in report.

[1]Highlighted species are present on or are likely to be present on the subject property.

Appendix 3. Site Plan

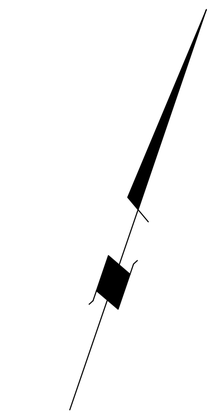
RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

SURVEYOR'S REAL PROPERTY REPORT
PART 1
PLAN OF SURVEY OF
PART OF LOT 22, CONCESSION 9
GEOGRAPHIC TOWNSHIP OF MONTEAGLE
MUNICIPALITY OF HASTINGS HIGHLANDS
COUNTY OF HASTINGS

SCALE 1 : 200 METRIC

5 2.5 0 5 10 15 METRES

RODNEY GEYER O.L.S.



INTEGRATION DATA

UTM GRID BEARINGS ARE DERIVED FROM OBSERVED REFERENCE ORP POINTS A AND B, USING THE SMARTNET NETWORK. HAVING A GRID BEARING OF N26°35'15"W REFERRED TO THE CENTRAL MERIDIAN UTM ZONE 18, NAD 83 (CSRS) (2010) (81°WEST LONGITUDE).

FOR BEARING COMPARISONS, A ROTATION OF 2°00'50" (CLOCKWISE) WAS APPLIED TO BEARINGS ON PLAN 21R–21064, AND PLAN 21R–18579.

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.000076172.

OBSERVED REFERENCE POINTS (ORPs) : UTM ZONE 17, NAD83 (CSRS) (2010). COORDINATES TO RURAL ACCURACY PER SECTION 14 (2) OF O.REG. 216/10.

POINT ID	NORTHING	EASTING	
ORP A	5006585.01	276297.59	
ORP B	5006679.92	276250.09	

CAUTION:
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

- ■ DENOTES SURVEY MONUMENT FOUND
- □ DENOTES SURVEY MONUMENT PLANTED
- ⊠ DENOTES WOOD STAKES
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- IBØ DENOTES 3/4" DIA. ROUND IRON BAR
- WIT DENOTES WITNESS
- (934) DENOTES GREG BISHOP SURVEYING and CONSULTING LTD.
- (934) DENOTES H.C. BISHOP O.L.S.
- (934) DENOTES BISHOP GEYER SURVEYING INC.
- (776) DENOTES M.J. McALPINE O.L.S.
- (1512) DENOTES P.A. MILLER O.L.S.
- (M) DENOTES MEASURED
- (P) DENOTES PLAN 21R–21064
- (P1) DENOTES PLAN 21R–18579
- NTS DENOTES NOT TO SCALE
- UP DENOTES UTILITY POLE
- OH DENOTES OVERHEAD WIRES
- HM DENOTES HYDRO METER
- EG DENOTES EDGE OF GRAVEL
- TS DENOTES TOP OF SLOPE
- BS DENOTES BOTTOM OF SLOPE
- SRW DENOTES STONE RETAINING WALL
- DE DENOTES DECK
- ST DENOTES STAIRS
- PDE DENOTES PROPOSED DECK
- PHT DENOTES PROPOSED HOLDING TANK
- CH DENOTES CEDAR HEDGE
- RAC DENOTES ROOF OVER AC FAN
- ○ DENOTES CONCRETE COLUMNS
- ES DENOTES EDGE OF SWAMPY AREA

NOTE:
THE PRESENT WATER'S EDGE OF BARTLETT LAKE SHOWN HEREON IS THE BEST AVAILABLE EVIDENCE OF THE WATER'S EDGE EXISTING AT THE TIME OF THE ORIGINAL SURVEY OF THE TOWNSHIP OF MONTEAGLE.

ELEVATION NOTE:
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM NETWORK RTK OBSERVATIONS [CGVD2013 DATUM].

A BENCHMARK HAS BEEN SET ON TOP OF THE SSIB AT SE CORNER WITH AN ELEVATION OF 415.77 METERS (CGVD2013).

UTILITY POLES TIES FROM "POINT B"	
BEARING	DISTANCE
N34°20'W	5.6
N29°42'E	23.9
N28°25'W	93.2
N28°32'W	93.9

PRESENT WATER'S EDGE TIES FROM "POINT A"	
BEARING	DISTANCE
S24°12'E	21.4
S24°42'E	18.9
S26°41'E	16.6
S24°18'E	15.6
S25°27'E	14.8
S24°04'E	14.2
S21°49'E	14.1
S22°14'E	12.5
S23°17'E	10.5
S24°15'E	8.3
S20°38'E	6.3
S14°06'E	4.4
S0°33'W	3.3
S5°31'W	1.2
S73°59'W	1.4
N59°40'W	2.3
N41°07'W	5.0
N29°57'W	7.6
N24°33'W	11.5
N20°52'W	14.2
N18°20'W	19.3
N11°48'W	21.5
N12°22'W	24.1
N12°59'W	31.8
N11°39'W	35.9
N12°06'W	39.8
N11°14'W	44.3
N12°11'W	50.1
N13°28'W	52.6
N15°27'W	54.9
N18°38'W	58.5
N22°23'W	59.3
N33°59'W	58.3

PART 2 - SURVEY REPORT

THIS PLAN WAS PREPARED FOR 2814321 ONTARIO INC.

PIN 40041 – 0115 (LT)

1. PLEASE NOTE THE LOCATION OF ALL BUILDINGS, DECKS, STAIRS, OVERHEAD TRANSMISSION LINES, EDGE OF GRAVEL DRIVEWAY, CEDAR HEDGES, STONE RETAINING WALL, AND CONCRETE COLUMNS.
2. REGISTERED EASEMENTS AND / OR RIGHT OF WAYS: N/A
3. THIS PLAN DOES NOT CERTIFY COMPLIANCE WITH ZONING BY-LAWS.

NOTE:
BUILDING TIES SHOWN HEREON ARE TO THE FRAME SIDING UNLESS NOTED OTHERWISE.

METRIC:
DISTANCES AND COORDINATES ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

THIS REPORT WAS PREPARED FOR 2814321 ONTARIO INC. AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES IN FUTURE TRANSACTIONS.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 14th DAY OF JUNE 2024

JUNE 26, 2024
DATE

RODNEY GEYER
ONTARIO LAND SURVEYOR

BISHOP GEYER SURVEYING INC.
ONTARIO LAND SURVEYOR
BOX 309, HALIBURTON, ONTARIO, K0M1S0
PHONE (705) 457 – 2811

CHECKED BY:	DRAWN BY:	REV. DATE	W.O.	REV.
RG	AW	JUNE 26, 2024	2024-64-S1	A

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-77830

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29(3)