ENVIRONMENTAL IMPACT STUDY

60 Irwin Lane
Hastings Highlands
June 2025

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

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June 3, 2025
RS# 2025-028

Diane Jared & Doug Conroy

Via email: dianejared@gmail.com, dougconroy2025@gmail.com

***SUBJECT*: Environmental Impact Study, 60 Irwin Lane, Baptiste Lake, Municipality of Hasting Highlands, Hastings County**

Dear Diane and Doug,

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

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REPORT SUMMARY

Type of Study Environmental Impact Study		**Date** June 3, 2025
Project Manager Bev Wicks	**Legal Description** 60 Irwin Lane, Part Lot 20, Concession 5, Municipality of Hastings Highlands, County of Hastings	**Development Proposed** Removal of existing two (2) cottages and redevelopment with single larger dwelling.
	Approval Authorities Municipality of Hastings Highlands, County of Hastings	**Owner/Agent** Diane Jared and Doug Conroy / N/A

Report Summary

This Environmental Impact Study has been prepared as part of a permissions application to demolish two (2) cottages and rebuild a new larger dwelling within 30 metres of the high-water mark of Baptiste 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. Nearshore and Deepwater Fish habitat
2. Potential habitat of endangered and threatened species.
3. Deer Wintering 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 4** of this report (reiterated below).

RECOMMENDATIONS

Water Quality and Fish Habitat

To ensure that the adjacent waterbody is not negatively impacted by development activities on the proposed lot, RiverStone recommends the following measures:

- **All new development with the exception of the existing dock is to be set back a minimum of 12 m from Baptiste Lake (Figure 2).**
- **The location of the new septic bed is to be located greater than 30 m from the shoreline of Baptiste Lake.**
- **With the exception of a permeable path no wider than 2.0 m, the area between the proposed dwelling and shoreline of Baptiste Lake is to be left in an unmaintained condition with enhancements to vegetation added where needed with a naturalization plan as outlined below.**

- **A naturalization plan is to be prepared for the areas adjacent the shoreline as shown on Figure** 2 **to improve nutrient uptake and protect fish habitat.**

- **In the naturalized area a modest amenity space is to be identified and all structures including picnic tables, boat racks, docks or other objects are to be located in this area, and all existing vegetation is to be retained.**

- **A revegetation plan that enhances existing vegetation is to be prepared with the use of a mix of locally native tree, shrub, and groundcover species. A list of suitable species is provided below in Table 2 and Table 3. Following planting, these areas are to be left unmaintained, to restore the shoreline buffer.**

- **Shrubs and groundcover should be installed between 0.3 to 1.5 m apart depending on size (small-0.3 m, medium 0.8 m, and large 1.5 m).**

- **All installed woody plants (i.e., trees and shrubs) should be native to Hastings Highlands and suitable to site conditions (e.g., light regime, moisture regime, etc.). Table 2 below lists tree, shrub, and ground cover species native to Hastings Highlands.**

- **All installed shrubs are recommended to consist of potted material in 1-3 gallon pots.**

- **All woody plants should be installed such that the root crown/trunk flare is exposed above the soil surface to ensure proper oxygenation of the rooting zone (see Appendix 2 for Planting Guide).**

- **All installed woody plants should be watered (deep soaking) following installation.**

- **The optimal time for woody plant installations is the spring (i.e., May) or fall (i.e., mid-September to early-October).**

- **The shoreline buffer areas are to be planted so that seasonal maintenance is not required and will be left to fill in and naturalize through succession.**

- **Groundcover planting "pods" can be created between tree and shrub plantings to naturalize and fill in open areas and create a naturalized look to the property. Suggested species for the subject property are included in Table 3.**

- **The property owner is required to submit dated photographs of the shoreline buffer and riparian areas to the Township on a yearly basis, taken from the same locations, for a period of 5 years.**

- **Table 2 and Table 3 provide a Native Plant List of species selected for planting. These species should match the moisture regime and light level in the location of planting.**

Erosion and Hardened Surfaces

Mitigation regarding erosion and hardened surfaces, RiverStone recommends that:

- **Final development plans are to include eavestrough that directs rooftop leaders away from lake and into soakaway pits or infiltration trenches.**

- **Low Impact Development (LID) measures (permeable and limited pathways) where feasible, should be included in the development design to decrease any potential impact to the surrounding natural features.**

- **A single path to the water from the proposed structure is to be constructed of permeable materials (woodchips, pea gravel, permeable pavers or equivalent) that allow for infiltration of stormwater and prevent channelization.**

To ensure that water quality and fish habitat is not negatively impacted by stormwater runoff during construction activities (e.g., site clearing activities, construction and installation of erosion control measures), RiverStone recommends the following measures:

- **Machinery is to arrive on site in clean condition and is to be checked and maintained free of fluid leaks.**

- **Best Management practices should be utilized with all machinery and fill being imported to the site to ensure that material and tracks are free from invasive species (*Phragmites australis*, etc.).**

- **Before native soils are exposed, sediment and erosion control works, in the form of sediment fencing is to be installed between the proposed development and Baptiste Lake. These works are to be maintained in good working order until the exposed soils have become re-vegetated.**

- **The sediment fencing should be constructed of heavy fabric and solid posts and should be properly trenched to maintain its integrity during weather events.**

- **Additional sediment fencing and appropriate control measures (e.g., silt fence) be stockpiled on site so that any breach can be immediately repaired through construction of check dams.**

- **Regular inspection and monitoring will be necessary to ensure that the structural integrity and continued functioning of the sediment control measures is maintained (i.e., proper installation is not the only action necessary to satisfy the mitigation requirements).**

- **Inspections of sediment and erosion control measures be completed within 24 hours of the onset of a storm event.**

- **Sediment control measures be maintained in good working order until vegetation has been established on the exposed soils.**

- **Removal of non-biodegradable erosion and sediment control materials should occur once construction is complete, and the site is stabilized.**

As part of the impact analysis, the potential to cause serious harm to fish, including fish habitat, 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:

- **DFO should be notified immediately if a situation occurs or if there is imminent danger of an occurrence that could cause serious harm to fish. If there is an occurrence, corrective measures must be implemented. This may occur during construction or otherwise.**
- **All in-water habitat features, including aquatic vegetation, natural woody debris and boulders should be left in their current locations in the nearshore area.**

Endangered and Threatened Species

Endangered Bats

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:

- **Demolition of any structures or the removal of any trees is to occur in the fall, winter and early spring (from October 1 to April 1). This timeframe is outside of the maternal roosting period for endangered bats.**
- **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 as minimal as possible to avoid unnecessary tree removals and retain trees that are in poor health but do not represent a hazard.**
- **Consider the installation of bat nesting boxes in trees to aid with insect control and promote local bat populations.**

1 BACKGROUND

RiverStone Environmental Solutions Inc. (hereafter "RiverStone") was retained by Diane Jared and Doug Conroy to complete an Environmental Impact Study (EIS) for the property located at 60 Irwin Lane, with frontage on Baptiste Lake in the Municipality of Hasting Highlands. The legal description of the property is Part Lot 20, Concession 5, Geographic Township of Herschel, Municipality of Hastings Highlands, County of Hastings (hereafter "subject property") (**Figure 1**).

According to the Municipality of Hastings Highlands Zoning By-law 2004-35 (Office consolidation: February 2024) the subject property is zoned Limited Service Residential (LSR) (**Appendix 1**). It is RiverStone's understanding that the proposal is to demolish two existing structures on the property totalling 1270 sq ft and replace them with a single cottage with a larger footprint of 2,200 sq ft, plus a 900 sq ft deck. The proposed development is set back 12.7 m from Baptiste Lake, with a new septic system that will be located 30 m from the high water mark. The subject property is located within the west portion of Baptiste Lake, within the area that has been identified as at capacity for development.

Based on communications with Planning Staff at the Municipality of Hastings Highlands, the minor variance application requires the completion of an EIS to assess the potential impacts of the proposal. The EIS is scoped to include vegetation classification, and the assessment of species at risk, Deer Wintering Habitat and fish habitat.

This EIS is required to demonstrate how the re-building of the cottage 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 Municipality and County policies, as well as the Provincial Planning Statement.

2 APPROACH AND METHODS

The approach and methods used to complete this report are detailed in this section. Broadly speaking, this includes:

1. Identifying a study area in which to focus assessment efforts.
2. Gathering and reviewing background biophysical information for the study area, including existing natural feature mapping and records for species of conservation interest that are relevant to the study area.
3. Conducting a site investigation and targeted survey methods (where appropriate), as well as consulting with relevant agencies, to field-verify the presence or absence of relevant features, *e.g.*, woodlands, wetlands, habitat for endangered or threatened species, etc.
4. Determining the potential for negative impacts associated with implementation of the proposed development and ways that these negative impacts can be mitigated via avoidance, minimization, and/or compensation measures (as required).
5. Determining whether the proposed application addresses applicable municipal, provincial, and federal environmental policies.

2.1 Identification of Study Area

The focus of this assessment is the subject property on which development is proposed (see **Figure 1** and **Figure 2**). 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 Planning 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 A – Land Use Designations
  - 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
- **Ministry of the Environment, Conservation and Parks (MECP) information request** for occurrences of species at risk in and adjacent to the subject property.
- **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: 18TQ6498 accessed April 4, 2025 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 April 2025)
- **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: 18TTR60 accessed at April 4, 2025, 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: 18TR60; accessed April 4, 2025, at https://www.ontarioinsects.org/herp/).
- **iNaturalist Mapping and Online Database** regarding citizen scientist observations documented in the vicinity of the subject lands accessed April 4, 2025, at https://inaturalist.ca/projects/nhic-rare-species-of-ontario
- **Atlas of the Mammals of Ontario** (Dobbyn 1994) regarding mammal records within and adjacent to the subject property.

- **Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2** (Henson and Brodribb (2005) regarding terrestrial biodiversity within Ecodistrict 5E-9 Algonquin Park.
- **Great Lakes Conservation Blueprint for Aquatic Biodiversity, Volume 2** (Phair et al. (2005) regarding aquatic biodiversity within the Upper Madawaska Watershed 2KD.
- **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 **Section 2.3**)

2.3 Site Investigation Methods

The results of background information gathering outlined above in **Section 2.2** helped direct on-site data collection activities associated with a site investigation completed on April 16, 2025. The site investigation focused on characterizing: 1) topography and drainage, 2) vegetation communities and vascular plants, 3) potential features of conservation interest, 4) potential habitat for species at risk (SAR), and 5) fish habitat. Representative site photos taken during this investigation and provided by the client (summer conditions) are assembled in **Appendix 2**. Overall, the level of effort expended on-site was deemed appropriate to document the features and functions given the location and scale of the proposed development.

2.3.1 Habitat-based Approach

RiverStone's primary approach to site assessment is habitat-based. This means that our field investigations first focus on evaluating the potential for features within an area of interest to function as habitat for species considered potentially present, rather than searching for live specimens. 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 turtles of conservation interest use sandy shorelines for nesting, numerous fish species use areas of aquatic vegetation for nursery habitat). Physical attributes of a site that can be used as indicators of its potential to function as habitat for a species include structural characteristics (e.g., physical dimensions of rock fragments or trees, water depth), ecological community (e.g., meadow marsh, rock barren, coldwater stream), and structural connectivity to other habitat features required by the 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), published and 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.

2.3.2 Physical Assessment (Topography, Surficial Geology and Drainage)

Geology is a significant factor in the formation of soil, the physical characteristics of a watershed, and ultimately surface water quality. The bedrock and overlying deposits influence surface runoff and infiltration, directly influencing the nutrient balance of receiving water bodies. Knowledge of the existing terrain in and surrounding the subject property is important in understanding how a property and its associated natural environment will respond to development pressures. The geophysical setting of this property was determined using topographic mapping, soils mapping, geological mapping, aerial photography, and the on-site investigation. Drainage features were identified through the review of background mapping resources and/or delineated in the field if present.

2.3.3 Vegetation Communities

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.

2.3.4 Significant Wildlife Habitat

The *Provincial Planning Statement*, (*2024*) protects SWH from development and site alteration unless it can be demonstrated that no negative impacts on the feature or its function will occur. As outlined in the *SWH Technical Guide* (OMNR 2000) and supporting *Ecoregion Criteria Schedules* (OMNRF 2015a, 2015b, 2015c), SWH is composed of four principal components:

1. Seasonal Concentration Areas of Animals;
2. Rare Vegetation Communities or Specialized Habitats;
3. Habitat of Species of Conservation Concern; and
4. Animal Movement Corridors.

The process for identifying SWH is outlined in s. 9.2.3 of the *Natural Heritage Reference Manual* (OMNR 2010). **Step 1** considers the nature of the development application proposed and involves the assembly of background ecological information for the subject property and adjacent lands. If the application triggers a need to protect SWH (*e.g.*, a change in land use that requires approval under the *Planning Act*), a more thorough investigation of potential SWH features on the subject property or adjacent lands must occur. Any confirmed SWH for the subject property and adjacent lands as identified in relevant planning documents or by the NDMNRF should be noted at this stage ("Adjacent" can include proximate parts of the mainland where there could be a connection between features important to a species of concern).

Where a need to protect SWH is triggered, **Step 2** involves undertaking a more thorough analysis of features, functions, and habitats on the subject property *via* ELC (see **Section 3.3**). The list of ELC Ecosite codes generated for the subject property is compared to those codes considered candidate SWH in the relevant Ecoregion Criterion Schedule (*i.e.,* 5E) in **Step 3**. Where a positive match between an ELC Ecosite and candidate SWH exists, the area is considered candidate SWH.

In **Step 4**, two options are available for candidate SWH:

1. the area may be protected without further study, or
2. the area may be evaluated to ascertain whether confirmed SWH is present. Evaluation may involve generating more detailed maps of vegetation cover or conducting surveys of the wildlife population within the candidate SWH including reproductive, feeding, and movement patterns.

If the area is confirmed SWH, the final step in the process (**Step 5**) is the completion of an impact assessment to demonstrate that no negative impacts to the confirmed SWH or its function will occur. The impact assessment process is assisted by SWH Mitigation Support Tool (OMNRF 2014).

RiverStone employed the approach as outlined above (*i.e.,* **Steps 1-5**) in assessing the potential for SWH to exist on the subject property. During pre-development consultation and background screening it was determined that Stratum 1 deer wintering habitat was mapped covering the subject property (**Figure 1**). The assessment of the subject property and additional discussion related to Stratum 1 deer wintering habitat is in **Section 3.5.2.**

2.3.5 Water Quality and Fish Habitat

Our field approach for fish habitat is also habitat-based. That is, we do not conduct site visits to observe fish use of the shoreline habitat over their entire life cycle to conclude whether the habitat is used or is significant. Instead, we typically conduct a site visit during the time of year when habitat features are visible. While the site visit was completed during early spring, photographs from the client provided input to the shoreline conditions. It is RiverStone's opinion that information gathered during the site assessment and photos provided by the client provided sufficient information to characteristics and types (**Table 1**).

While some habitats are specifically used by individual species at key times in their life history (e.g., rocky wind-swept shoals exposed to wind used by lake trout for spawning), other habitats are used by several species at various important times in their development (e.g., aquatic vegetation is used by various species for spawning, nursery, and/or feeding habitat). Characteristics of the open water shoreline that relate to habitat use by fish include substrate type, slope / water depth, presence of woody debris / fallen trees and large boulders, aquatic vegetation, confluence with watercourses, and

exposure to the wind. During our assessment, these features are surveyed from land and/or the water, taking note of the key habitat features described above.

Existing information on Baptiste Lake was reviewed based on data published through the Ministry of Natural Resources (MNRF). The key habitat features, along with the state of the riparian vegetation, are documented and recorded during onsite assessments and compared with the specific and general habitat requirements of the fish that are known to occur, to establish the fish habitat type (**Table 1**). Where available, our classification is compared with that of the MNRF. For the subject property, mapping was not available from the MNRF for this section of shoreline.

Generally, where watercourses are encountered, they are assessed for several important characteristics, including the physical dimensions of the channel, substrates, invertebrates, thermal regime, groundwater sources and adjacent vegetation. These details allow the creek to be characterised and considered on the basis of requirements in the Township Official Plans. These requirements relate to the buffer width and vegetation retention requirements. Wetlands can also be considered habitat for fish where there is suitable open water.

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).

2.3.6 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). As described in **Section 2.3.1**, RiverStone's approach to site assessment is primarily habitat-based. The results of these assessments are provided in **Appendix 3**.

2.4 Impact Assessment and Mitigation Planning

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 existing biophysical features and functions on site based on the proposed development plan (from construction to post-completion), including both direct (e.g., vegetation clearance, etc.) and indirect (e.g., light pollution, encroachment post-development, etc.) impacts.

2. *Evaluate* the significance of predicted impacts to existing biophysical features and functions based on their spatial extent, magnitude, timing, frequency (how often), and duration (how long).
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 a reasonable potential exists for negative impacts to a significant feature with recognized status, opportunities to mitigate (avoid, minimize, compensate) and/or enhance such features are provided.

2.5 Assessment of Conformance with Applicable Environmental Policies

The relevant municipal and environmental policies that apply to the subject property and proposed development are listed below. Based on the results of the background information gathering, site investigation, impact assessment, and recommendations, RiverStone has advised the extent to which the proposed development conforms to all applicable environmental policies in **Section 5**.

- Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22, including:
    - Migratory Birds Regulations.
- *Provincial Planning Statement*, 2024, 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)
    - The Lakeshore Capacity Assessment Handbook (May 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 BIOPHYSICAL FEATURES AND FUNCTIONS

3.1 General Site Conditions

At the time of our site visit on April 16, 2025, development on the subject property to the west of Irwin Lane consisted of a main one (1) story cottage, a smaller one (1) story cottage, a one (1) story bunkie, woodshed, and dock. The existing structures are located in the south portion of the subject property with the north portion containing upland forest. The portion of the property to the east of Irwin Lane contained a dock and retaining wall along the shoreline. Both the east and west portions of the property are accessed via Irwin Lane. The property is bounded by Baptiste Lake to the east and west and to the north, south similar recreational properties. No watercourses or wetland features were noted on the subject property. Representative photographs taken during the site investigation are provided in **Appendix 2**.

3.2 Terrain, Drainage, and Soils

The subject property is situated within the central portion of Ecodistrict 5E-9 (Algonquin Park). 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.

Topographic information available for the property, supplemented with field observations, reveal that the property is relatively level with 0-5% slopes through the property on the areas both to the east and west of Irwin Road with the exception of a 1.5 to 2.0 m tall steep slope at the shoreline along the west side. The shoreline along the east portion of the property contains a wood retaining wall. Contour lines on the subject property are included in **Figure 2**. Overland drainage is directed to the west towards Baptiste Lake.

3.3 Vegetation Communities

Existing vegetation communities within the subject property were assessed through a combination of background review and on-site investigation. A desktop exercise was undertaken to map vegetation community boundaries using background information sources and current aerial photographs; the mapped vegetation communities were then ground-truthed to a high level and refined where necessary during the site investigation. Vegetation community mapping with classifications generally based on Lee et al (1998) and descriptions are provided below. 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 Vegetation Communities

Due to the small size of the subject property, the extent of structures and the assumed historic use of the property, vegetation communities on the subject property are primarily anthropogenic with mid to mature trees creating a canopy. To the west of Irwin Lane, sections of the property have been left natural that provide a ground cover and shrub layer in some areas. Vegetation species present on the subject property include Eastern White Pine (*Pinus strobus*), American Basswood (*Tilia americana*), Eastern Hemlock (*Tsuga canadensis*), Red Maple (*Acer rubrum*), Black Cherry (*Prunus serotina*), Balsam Fir (*Abies* balsamea), Sugar Maple (*Acer saccharinum*), Eastern White Cedar (*Thuja occidentalis*).American Beech (*Fagus americana*), White Ash (*Fraxinus americana*), Striped Maple (*Acer pensylvanicum*), Tatarian Honeysuckle (*Lonicera tatarica*), Beaked Hazel (*Corylus cornuta*), Blueberry Species (*Vaccinium sp.*), and Meadowsweet Species (*Spiraea sp*.). The property to the east of Irwin Lane consists of large trees along the north and south property boundaries with the centre portion having been left to naturalize. Vegetation species present in this portion of the property include Eastern White Pine, White Spruce (*Picea glauca*), Sugar Maple, Red Maple and American Beech.

During the site assessment a rudimentary assessment of trees in close proximity to the existing and proposed structures was completed. The assessment was completed from the ground with general observations of the trees condition and structural integrity noted. It must be recognized that all trees (in

good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.

At the time of the site assessment, several of the trees showed conditions that may hinder the structure of the tree and cause failure or tree decline. These conditions included stem and trunk wounds, woodpecker damage, branch dieback, inclusion wood and seems. Trees noted on **Figure 2** are trees that should be considered for removal or corrective action by a certified climbing arborist. RiverStone also recommends that all Eastern White Pine trees on the property undergo dead wooding to reduce the risk of branch drop.

3.4 Fish Habitat

The subject property has frontage on Baptiste Lake, which is a large cold-water Lake Trout Lake, the western basin of which has been identified as at capacity for development. The fish community consists of several major fish species, including Lake Trout (*Salvelinus namaycush*), Black Crappie (*Pomoxis nigromaculatus*), Blue Gill (*Lepomis macrochirus*), Brown Bullhead (*Ameiurus nebulosus*), Burbot (*Lota lota*), Cisco (*Coregonus artedi*), Lake Whitefish (*Coregonus clupeaformis*), Largemouth Bass (*Micropterus salmoides*), Muskellunge (*Esox masquinongy*), Northern Pike (*Esox lucius*), Pumpkinseed (*Lepomis gibbosus*), Rock Bass (*Ambloplites rupestris*), Smallmouth Bass (*Micropterus dolomieu*), Walleye (*Stizostedion vitreum*), White Sucker (*Catostomus commersonii*), and Yellow Perch (*Perca flavescens*).

During our site assessment, we reviewed the entire shoreline of the property to determine the type of nearshore fish habitat present, given the expected fish community. Habitat characteristics are consistent across the frontage. The nearshore habitat features fronting the shoreline of the subject property observed through the ice consist of a mix of sand and cobble substrates with cobble along the base of the shoreline slope. Onshore slopes are gentle in the range of 0-5% in the area between the shoreline slope and cottage and throughout the property generally.

Riparian vegetation observed on site primarily consisted of grass with treed/vegetated areas consisting of Eastern Hemlock, Eastern White Pine, Eastern White Cedar, Beaked Hazel, Blueberry Species, and Meadow Sweat Species.

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, however, note that an assessment of aquatic vegetation and nearshore fish habitat was assessed in the use of in season photos provided by the client and not completed during the growing season (June 15-September 15).

Baptiste Lake supports a Lake Trout population. The impact assessment and mitigation measures section, therefore, focuses on potential impacts to water quality related to the development on the subject property. Lake Trout are sensitive to development activities that decrease water quality; attributed to both increase in phosphorous and decreases in dissolved oxygen in deep water habitat. The subject property is located in the west basin of Baptiste Lake which is currently classified as at capacity for development.

3.5 Wildlife Habitat

As noted above, RiverStone assessed the potential for the subject property and adjacent lands to contain habitat for endangered and threatened species (**Appendix 3**).

3.5.1 Endangered and Threatened Species

The results of RiverStone's desktop, habitat-based, and targeted assessments for endangered and threatened species and their habitat are provided in **Appendix 3**. The preliminary screening identified the potential for twenty-four (24) endangered or threatened species to be present on the subject property based on existing records and/or range maps. Based on the results of the onsite habitat assessment, RiverStone identified the potential for six (6) endangered species to be present on the subject property; these species include Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Silver-haired Bat (*Lasionycteris noctivagans*) and Tricoloured Bat (*Perimyotis subflavus*). An impact assessment is provided for these species in **Section 4.3**.

3.5.2 Deer Wintering Areas

MNRF mapping and Schedule B Natural Heritage Features of the County of Hastings Official Plan has identified Stratum 1 deer yard and wintering habitat covering the property, which is considered SWH. White-tailed Deer concentrate during the winter, after snow accumulates. Deer show a high fidelity to these gathering areas, returning each year. This specialized habitat is considered Significant Wildlife Habitat as deer rely on the thermal cover and food found in these wintering yards. To confirm that an area is being used for deer wintering, it requires suitable vegetation for both thermal cover and food (deciduous shrub, saplings and/or Eastern White Cedar and Eastern Hemlock) in addition to having a history of deer use. During field assessment, any signs of deer activity were recorded, as well as type and quantity of vegetation cover and the quality of habitat. Based on the species present and the current use of the subject property as a developed residential lot with high levels of human activity within, and on adjacent properties and the location being on a narrow peninsula, the subject property lacks the necessary features to function as deer habitat. It is therefore not suitable to function as a deer wintering area.

4 IMPACT ASSESSMENT AND RECOMMENDATIONS

4.1 Development Proposal

The current landowners are proposing to remove the two (2) existing cottages and replace the structure with one (1) permanent dwelling with a larger footprint. The proposed new development will be 12.7 m from the shoreline of Baptiste Lake. In addition to the new structures, a new septic system is proposed. The location of the septic bed is between the proposed structure and Irwin Lane and will be 30 m from the lake. **Figure 2** illustrates the proposed development with the proposed development plan located in **Appendix 4**. The proposed development has been summarized by the client as follows:

Existing development in 30 m setback

Existing cottage and deck – 1,020 sq ft

Small cabin and deck – 250 sq ft
Septic filed bed – 375 sq ft (approximately)

Existing development within 30 m of the shoreline – 1,625 sq feet

Proposed Development in 30 m setback

New House - 2,200 sq ft
New Deck – 900 sq ft

Proposed development within 30 m of the shoreline – 3, 100 sq ft

Noting that the new septic must be located behind 30 m high-water mark.

4.2 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 near shore and deep-water fish habitat associated with Baptiste 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 have the potential to have negative impacts on water quality and deep-water fish habitat, it is RiverStone's opinion that the mitigation measures recommended below can reduce the risk of negative impacts to an acceptable level. To ensure that the adjacent waterbody is not negatively impacted by development activities on the proposed lot, RiverStone recommends the following measures:

- **All new development with the exception of the existing dock is to be set back a minimum of 12 m from Baptiste Lake (Figure 2).**

- **The location of the new septic bed is to be located greater than 30 m from the shoreline of Baptiste Lake.**

- **With the exception of a permeable path no wider than 2.0 m, the area between the proposed dwelling and shoreline of Baptiste Lake is to be left in an unmaintained condition with enhancements to vegetation added where needed with a naturalization plan as outlined below.**

- **A naturalization plan is to be prepared for the areas adjacent the shoreline as shown on Figure** 2 **to improve nutrient uptake and protect fish habitat.**

- **In the naturalized area a modest amenity space is to be identified and all structures including picnic tables, boat racks, docks or other objects are to be located in this area, and all existing vegetation is to be retained.**

- **A revegetation plan that enhances existing vegetation is to be prepared with the use of a mix of locally native tree, shrub, and groundcover species. A list of suitable species is provided below in Table 2 and Table 3. Following planting, these areas are to be left unmaintained, to restore the shoreline buffer.**
- **Shrubs and groundcover should be installed between 0.3 to 1.5 m apart depending on size (small-0.3 m, medium 0.8 m, and large 1.5 m).**
- **All installed woody plants (i.e., trees and shrubs) should be native to Hastings Highlands and suitable to site conditions (e.g., light regime, moisture regime, etc.). Table 2 below lists tree, shrub, and ground cover species native to Hastings Highlands.**
- **All installed shrubs are recommended to consist of potted material in 1-3 gallon pots.**
- **All woody plants should be installed such that the root crown/trunk flare is exposed above the soil surface to ensure proper oxygenation of the rooting zone (see Appendix 2 for Planting Guide).**
- **All installed woody plants should be watered (deep soaking) following installation.**
- **The optimal time for woody plant installations is the spring (i.e., May) or fall (i.e., mid-September to early-October).**
- **The shoreline buffer areas are to be planted so that seasonal maintenance is not required and will be left to fill in and naturalize through succession.**
- **Groundcover planting "pods" can be created between tree and shrub plantings to naturalize and fill in open areas and create a naturalized look to the property. Suggested species for the subject property are included in Table 3.**
- **The property owner is required to submit dated photographs of the shoreline buffer and riparian areas to the Township on a yearly basis, taken from the same locations, for a period of 5 years.**

Table 2. Native Plant List. Species selected for planting should match the moisture regime and light level in the location of planting (highlighted species are recommended for subject property).

Common Name	Scientific Name	Form	Moisture Regime – Light Level
Tree Species			
White Pine	*Pinus strobus*	Conifer Tree	Dry to Moist – shade-sun
Red Pine	*Pinus resinosa*	Conifer Tree	Dry to Fresh – sun

Common Name	Scientific Name	Form	Moisture Regime – Light Level
Eastern White Cedar	*Thuja occidentalis*	Conifer Tree	Fresh to Moist – shade to sun
Eastern Hemlock	*Tsuga canadensis*	Conifer Tree	Fresh to Moist – shade
White Spruce	*Picea glauca*	Conifer Tree	Dry to Fresh – sun
Balsam Fir	*Abies balsamea*	Conifer Tree	Fresh to Moist – shade
White Birch	*Betula papyrifera*	Deciduous Tree	Dry to Moist – sun
Red Maple	*Acer rubra*	Deciduous Tree	Dry to Moist – all
Yellow Birch	*Betula alleghaniensis*	Deciduous Tree	Fresh to Moist – shade
Sugar Maple	*Acer saccharinum*	Deciduous Tree	Dry to Moist – shade
Black Cherry	*Prunus serotina*	Deciduous Tree	Dry to Fresh – sun
Trembling Aspen	*Populus tremuloides*	Deciduous Tree	Dry to Fresh – sun
Shrub Species			
Nannyberry	*Viburnum lentago*	Shrub	Moist to Wet – all
Northern Wild Raisin	*Viburnum cassinoides*	Shrub	Moist to Wet – sun
Alternate-leaved Dogwood	*Cornus alternifolia*	Shrub	Fresh to Moist – shade
Common Ninebark	*Physocarpus opulifolius*	Shrub	Dry to Wet –all
Serviceberry	*Amelanchier spp*	Shrub	Dry to Fresh – all
Red-osier Dogwood	*Cornus stolonifera*	Shrub	Dry to Wet –all
Staghorn Sumac	*Rhus hirta*	Shrub	Dry to Fresh – all

Common Name	Scientific Name	Form	Moisture Regime – Light Level
Choke Cherry	*Prunus virginiana*	Shrub	Dry to Moist – sun
Common Elderberry	*Sambucus canadensis*	Shrub	Fresh to Moist – sun
Speckled Alder	*Alnus incana*	Shrub	Fresh to Moist – sun
Bush honeysuckle	*Diervilla lonicera*	Shrub	Dry to Fresh – all
Sweetgale	*Myrica gale*	Shrub	Damp to Moist – sun
Narrow-leaved Meadowsweet	*Spirea alba*	Shrub	Dry to Moist – any

Table 3. Recommended Native Groundcover Species

Common Name	Scientific Name
Ostrich Fern	*Matteuccia struthiopteris*
Interrupted Fern	*Osmunda claytoniana*
Spinulose Wood Fern	*Dryopteris carthusiana*
Canada Mayflower	*Maianthemum canadense*
Northern Starflower	*Trientalis borealis*
Fireweed	*Chamerion angustifolium*
Wild Sarsaparilla	*Aralia nudicaulis*
Bunchberry	*Cornus canadensis*

4.2.1 Erosion and Hardened Surfaces

Stormwater runoff from hard surfaces, particularly rooftops, extensive flagstone patios, stairways and walkways, have the potential to impact the water quality and deep-water fish habitat of Baptiste Lake in the long term. To address the potential for erosion and reduced nutrient uptake that results from soil coverage and hardened surfaces RiverStone would provide the following commentary. The potential for erosion can be reduced if concentrated flow from the rooftops is avoided by directing rooftop drainage through downspouts into in-ground infiltration chambers. Infiltration chambers are shallow excavations with perforated pipe cut in half, convex side up, covered with filter fabric and topped with stone to create underground reservoirs. The runoff gradually percolates through the chamber and into the surrounding soil. The chambers reduce the volume of overland runoff, can provide ground water

recharge, and are able to remove suspended solids and phosphorus. The flow from infiltration chambers should be directed away from the shoreline setback, toward vegetated portions of the lot to increase nutrient uptake. Eves-trough should not be piped directly to the lake. Regarding the above, RiverStone recommends that:

- **Final development plans are to include eavestrough that directs rooftop leaders away from lake and into soakaway pits or infiltration trenches.**

- **Low Impact Development (LID) measures (permeable and limited pathways) where feasible, should be included in the development design to decrease any potential impact to the surrounding natural features.**

- **A single path to the water from the proposed structure is to be constructed of permeable materials (woodchips, pea gravel, permeable pavers or equivalent) that allow for infiltration of stormwater and prevent channelization.**

To ensure that water quality and fish habitat is not negatively impacted by stormwater runoff during construction activities (e.g., site clearing activities, construction and installation of erosion control measures), RiverStone recommends the following measures:

- **Machinery is to arrive on site in clean condition and is to be checked and maintained free of fluid leaks.**

- **Best Management practices should be utilized with all machinery and fill being imported to the site to ensure that material and tracks are free from invasive species (*Phragmites australis,* etc.).**

- **Before native soils are exposed, sediment and erosion control works, in the form of sediment fencing is to be installed between the proposed development and Baptiste Lake. These works are to be maintained in good working order until the exposed soils have become re-vegetated.**

- **The sediment fencing should be constructed of heavy fabric and solid posts and should be properly trenched to maintain its integrity during weather events.**

- **Additional sediment fencing and appropriate control measures (e.g., silt fence) be stockpiled on site so that any breach can be immediately repaired through construction of check dams.**

- **Regular inspection and monitoring will be necessary to ensure that the structural integrity and continued functioning of the sediment control measures is maintained (i.e., proper installation is not the only action necessary to satisfy the mitigation requirements).**

- **Inspections of sediment and erosion control measures be completed within 24 hours of the onset of a storm event.**

- **Sediment control measures be maintained in good working order until vegetation has been established on the exposed soils.**

- **Removal of non-biodegradable erosion and sediment control materials should occur once construction is complete, and the site is stabilized.**

As part of the impact analysis, the potential to cause serious harm to fish, including fish habitat, 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:

- **DFO should be notified immediately if a situation occurs or if there is imminent danger of an occurrence that could cause serious harm to fish. If there is an occurrence, corrective measures must be implemented. This may occur during construction or otherwise.**
- **All in-water habitat features, including aquatic vegetation, natural woody debris and boulders should be left in their current locations in the nearshore area.**

4.3 Endangered and Threatened Species

Appendix 3 presents our assessment of potential impacts on species and ecological communities of conservation interest. The results of our analysis suggest that Eastern Red Bat, Hoary Bat, Little Brown Myotis, Northern Myotis, Silver-haired Bat and Tricoloured Bat have the potential to use features found on the property.

4.3.1 Endangered Bats

Potential habitat for endangered bats outlined above is located within trees and the structures located on the subject property. In the absence of detailed site-specific data, and based on RiverStone's professional experience, trees and the structures may be expected to support some level of seasonal bat activity, which may include endangered bat species. Trees present may 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).

Pregnant and lactating females will move from roost to roost each morning in responses to changes in thermal conditions and prey (insect) availability. Areas containing a high density of snags increases the chances of use by endangered bats as these areas provide a variety of microhabitat conditions. Changes within the forest community adjacent to maternal roosts have the potential to reduce the suitability of a given snag or cavity tree by changing the extent of shading by adjacent trees, which can result in changes to thermal conditions within the roost. Additionally, as roosting trees inherently exhibit some level of decay, removal of trees surrounding roosts may increase the potential for wind-throw of both the roost itself and surrounding trees, thereby damaging or destroying the habitat feature.

Habitat for endangered 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:

- **Demolition of any structures or the removal of any trees is to occur in the fall, winter and early spring (from October 1 to April 1). This timeframe is outside of the maternal roosting period for endangered bats.**

- **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 as minimal as possible to avoid unnecessary tree removals and retain trees that are in poor health but do not represent a hazard.**

- **Consider the installation of bat nesting boxes in trees to aid with insect control and promote local bat populations.**

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.

5 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.

5.1 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. 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 likely 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*.

5.2 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 development and 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.

5.3 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 or on the adjoining lands. As detailed therein, 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.

5.4 Provincial Planning Statement, 2024, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13.

The Provincial Planning Statement (PPS) is promulgated under the *Planning Act* and provides direction to municipalities on matters of provincial interest related to land-use planning. The PPS was updated in 2024. Municipal OP's must be consistent with the PPS. Key natural heritage-related provisions of the PPS, as assessed in this report, are listed below:

> **4.1.4** Development and site alteration shall not be permitted in:
>
> a) significant wetlands in Ecoregions 5E, 6E, and 7E1;
> b) significant coastal wetlands.
>
> **4.1.5** Development and site alteration shall not be permitted in:
>
> a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E[1];
> b) significant woodlands in Ecoregions 6E and 7E;
> c) significant valleylands in Ecoregions 6E and 7E;
> d) significant wildlife habitat;
> e) significant areas of natural and scientific interest; and
> f) coastal wetlands in Ecoregions 5E, 6E and 7E[1] that are not subject to policy 2.1.4(b)
>
> unless it has been demonstrated that there will be *no negative impacts on the natural features or their ecological functions.*
>
> **4.1.6** *Development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial* and *federal requirements.*

As per **Section 3.4** fish habitat was identified along the shoreline of the subject property fronting onto Baptiste Lake. Adherence to the recommendations outlined in **Section 4.2** of this report will ensure there are no negative impacts to fish habitat.

> **4.1.7** *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 4** 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 4.1.7.

> **4.1.8** *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 4** 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 4.1.8, as long as the recommended mitigation measures are followed.

5.5 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.

4.2.5 Lakes Managed for Lake Trout

4.2.5.1 The County acknowledges the importance of cold water bodies in sustaining salmonoid fish species, such as lake trout, and the sensitivity to physical, thermal Hastings County Official Plan – December 2017 Prepared by the Hastings County Planning Department 81 and chemical changes to such waterbodies. Cold water bodies are less common than other water habitats and are relatively reliant on groundwater discharge/recharge, undisturbed shoreline areas and other naturally occurring dynamics that maintain water quality, base flows and temperatures. Lake trout have two basic water quality requirements, low water temperatures and high levels of dissolved oxygen. Phosphorus loading that tends to promote growth of plants and algae is the key pollutant that can most jeopardize the two key noted water quality requirements.

4.2.5.2 The County and Member Municipalities shall permit development to take place adjacent to lakes managed for lake trout and their associated streams only in a manner that has no adverse effects on habitat essential to the maintenance of a healthy lake trout fishery.

Interpretation: The proposed development will increase the footprint within the 30 m setback of Baptiste Lake however the proposed septic is greater than 30 m from Baptiste Lake. The recommended

re-vegetation will improve nearshore fish habitat compared to existing conditions prior to redevelopment.

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

The subject property is currently zoned Limited Service Residential (LSR)), with the current application to remove two (2) existing non-conforming cottages and replace them with a single dwelling with a larger footprint.

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 proposed development and is to be located greater than 30 m from Baptiste Lake. The proposed structure will replace the two (2) existing cottages with a single dwelling within the 30 m setback.

6 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 significant 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 agreement for the subject property. Finally, these conclusions are also dependent upon the recommended preventative measures being implemented through the development plan that is subsequently enforced with appropriate by-laws.

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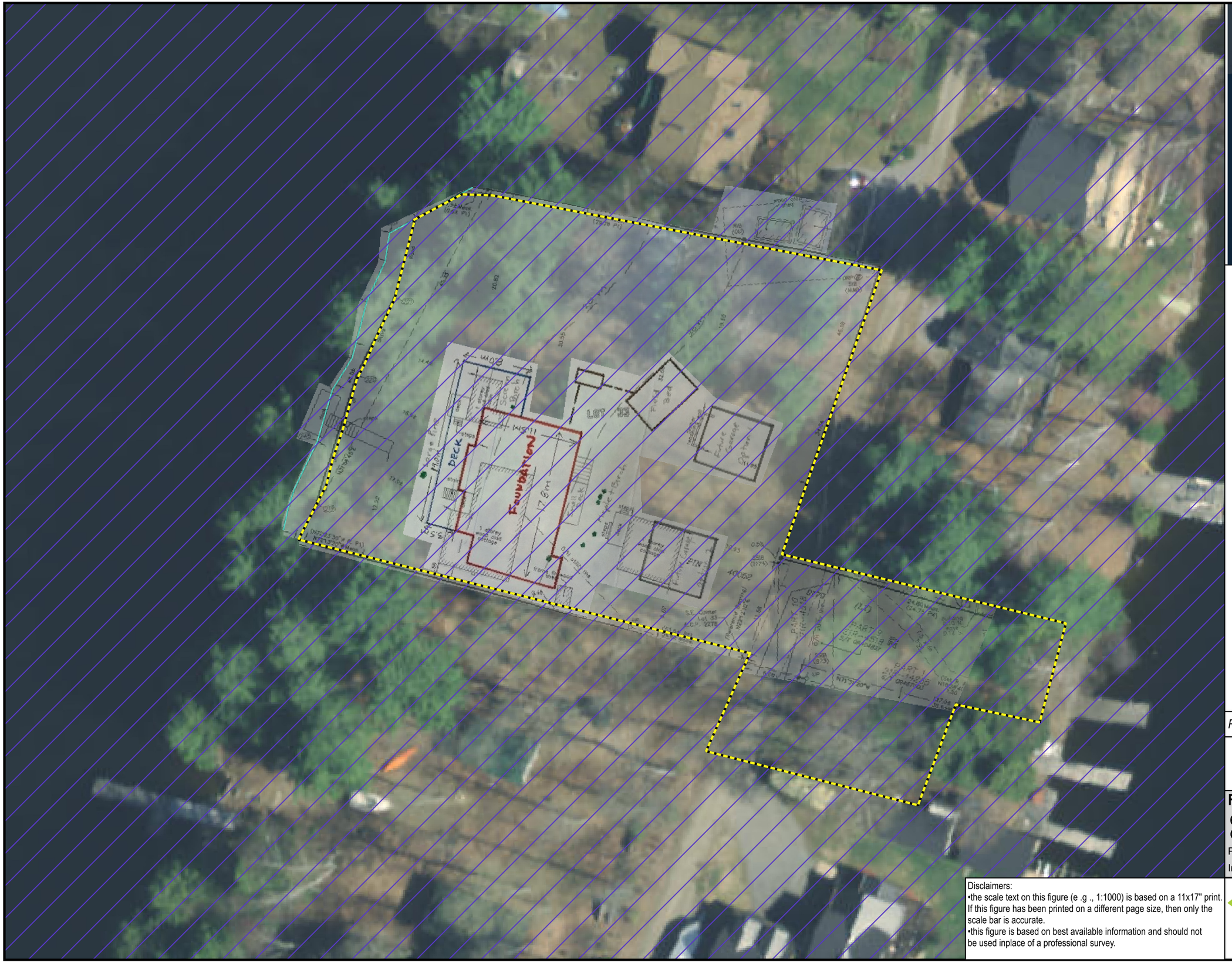

Legend

Planning Boundaries

Property Boundary

Natural Heritage Features - Identified by Province

Wildlife_Values_Area

Deer Wintering Habitat

Orthorectified Aerial Photograph 2018

RS Project No. 2025-028	May 16, 2025	By: ET

0 10 20 m

Scale 1:400

Figure 1. Location of Subject Property

60 Irwin Lane, Municipality of Hastings Highlands, County of Hastings

Prepared for: Diane Jared & Doug Conroy

Inset: Generalized 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.

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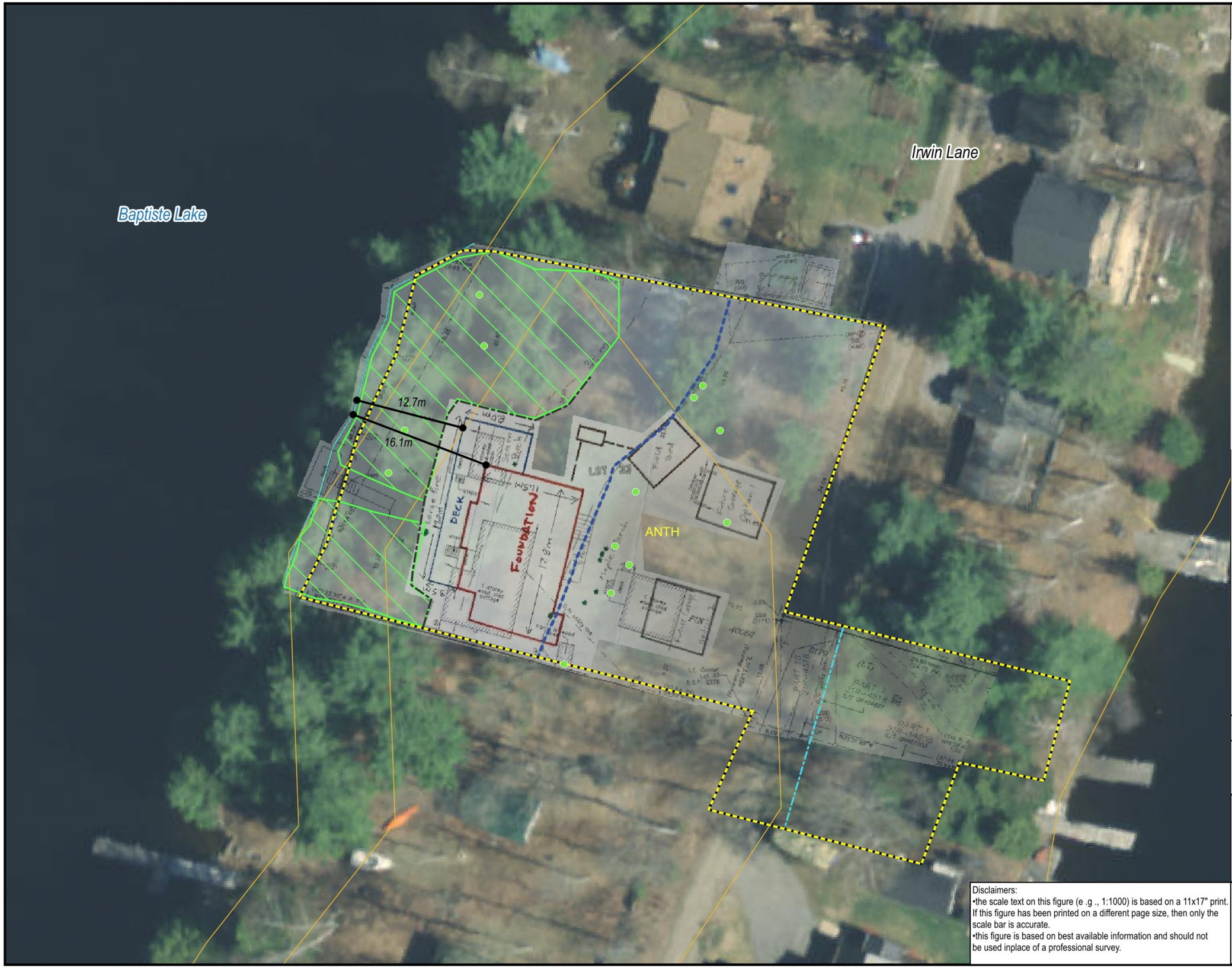

Legend

Planning Boundaries

- Property Boundary

Natural Heritage Features - Identified by Province (Geohub)

- 5m Contour Lines

Natural Heritage Features - Identified by RiverStone

- Lake Shoreline
- Trees With Defects to be Assessed

Ecological Land Classification (ELC)

- ANTH - Anthropogenic

Avoidance and Mitigation Measures

Recommended by RiverStone

- 30m Western Shoreline Buffer
- 30m Eastern Shoreline Buffer
- Area to be Naturalized
- Sediment and Erosion Control Fencing

Orthorectified Aerial Photograph 2013

RS Project No. 2025-028	April 21, 2025	By: ET

0 10 20 m

Scale: 1:400

Figure 2. Natural Heritage Features

60 Irwin Lane, Municipality of Hastings Highlands, County of Hastings

Prepared for: Diane Jared & Doug Conroy

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.

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Appendix 1. Applicable Policy Mapping

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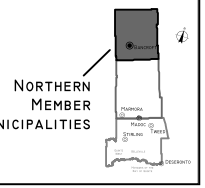
Hastings County Official Plan

Land Use Designations
OP-A Schedule



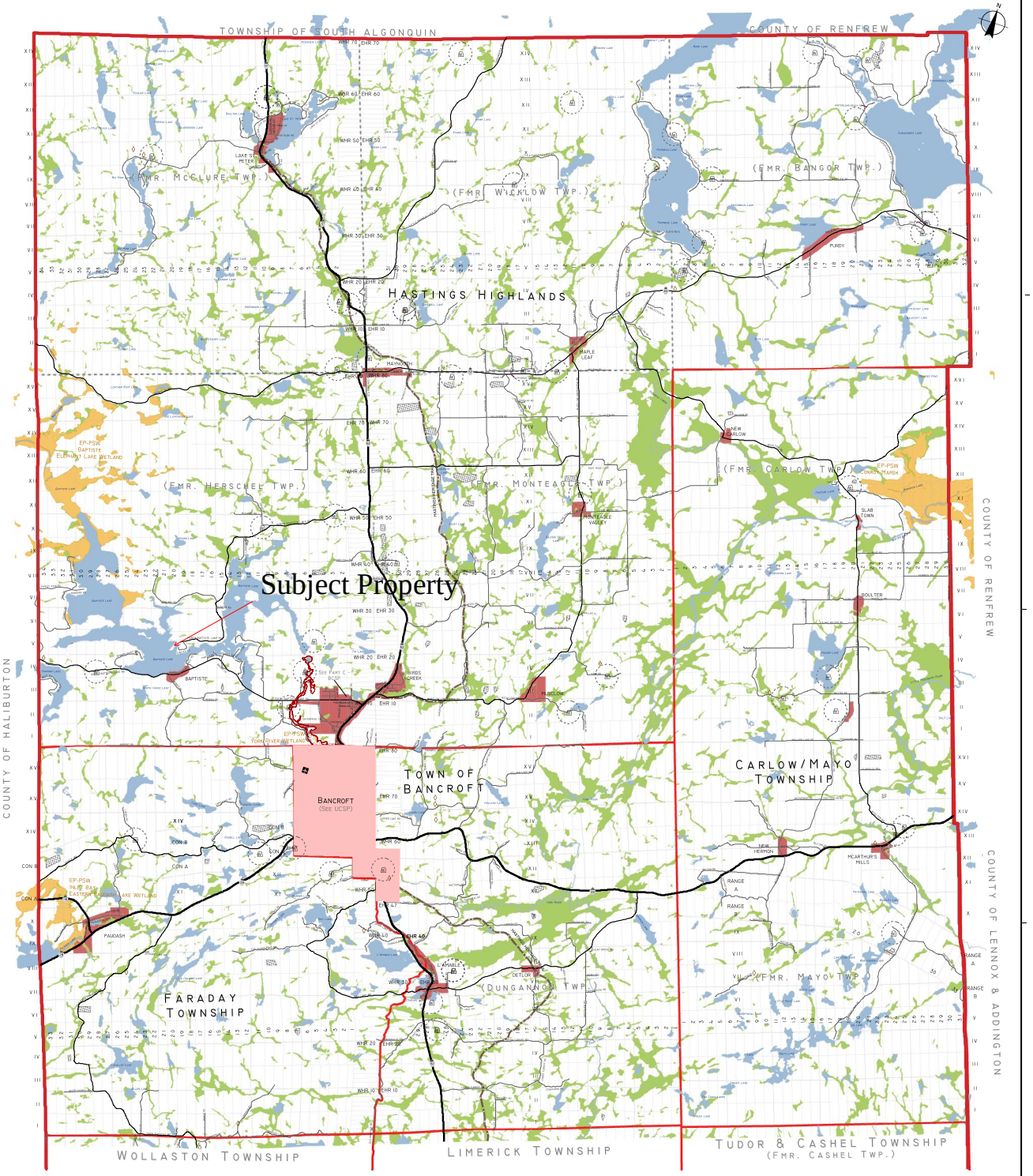
June 22, 2018

Land Use Designations
- Prime Agriculture
- Rural/Waterfront
- Environmental Protection
- Environmental Protection - Provincially Significant Wetland
- Extractive (Large Site)
- Extractive (Small Site)
- Urban
- Hamlet
- Waterbody
- Wellhead Protection Area
- Intake Protection Zone
- Issues Contributing Area
- Well Head Protection Area - E
- Waste Management
- Site Specific Policy Area (Large Site)
- Site Specific Policy Area (Small Site)
- Engineered Floodline

Geographic Features
- Non Official Plan Area
- Lot & Concession Line
- Geographic Township Boundary
- Municipal Boundary
- County Boundary

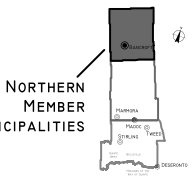
Infrastructure
- Highway (Prov. & Fmr. Provincial)
- Collector Road (Former County)
- Municipal Road
- Railway
- Hastings Heritage Trail
- TransCanada Trail
- Airfield

KILOMETRES



Hastings County Official Plan

Natural Heritage Features & Areas
OP-B Schedule



This is to certify that this map was adopted as Official Plan Schedule OP-B of the County of Hastings Official Plan 2017-0050. Plot Date: 12/18/2017 Signing Date: 12/19/2017

Jim Duffin, Clerk of Hastings County

Rodney Cooney, Warden of Hastings County

This schedule forms a part of the County of Hastings Official Plan and must be read in conjunction with the written text. Visit www.hastingscounty.com for the full Official Plan. Please refer to secondary plan schedules for detailed mapping of urban areas. Some special policy areas may also have detailed maps within the text.

Produced by the County of Hastings Planning & Development Department. Data supplied, under license, by Members of the Ontario GeoSpatial Data Exchange and the County of Hastings. The County of Hastings disclaims all responsibility for errors, omissions or inaccuracies in this publication.

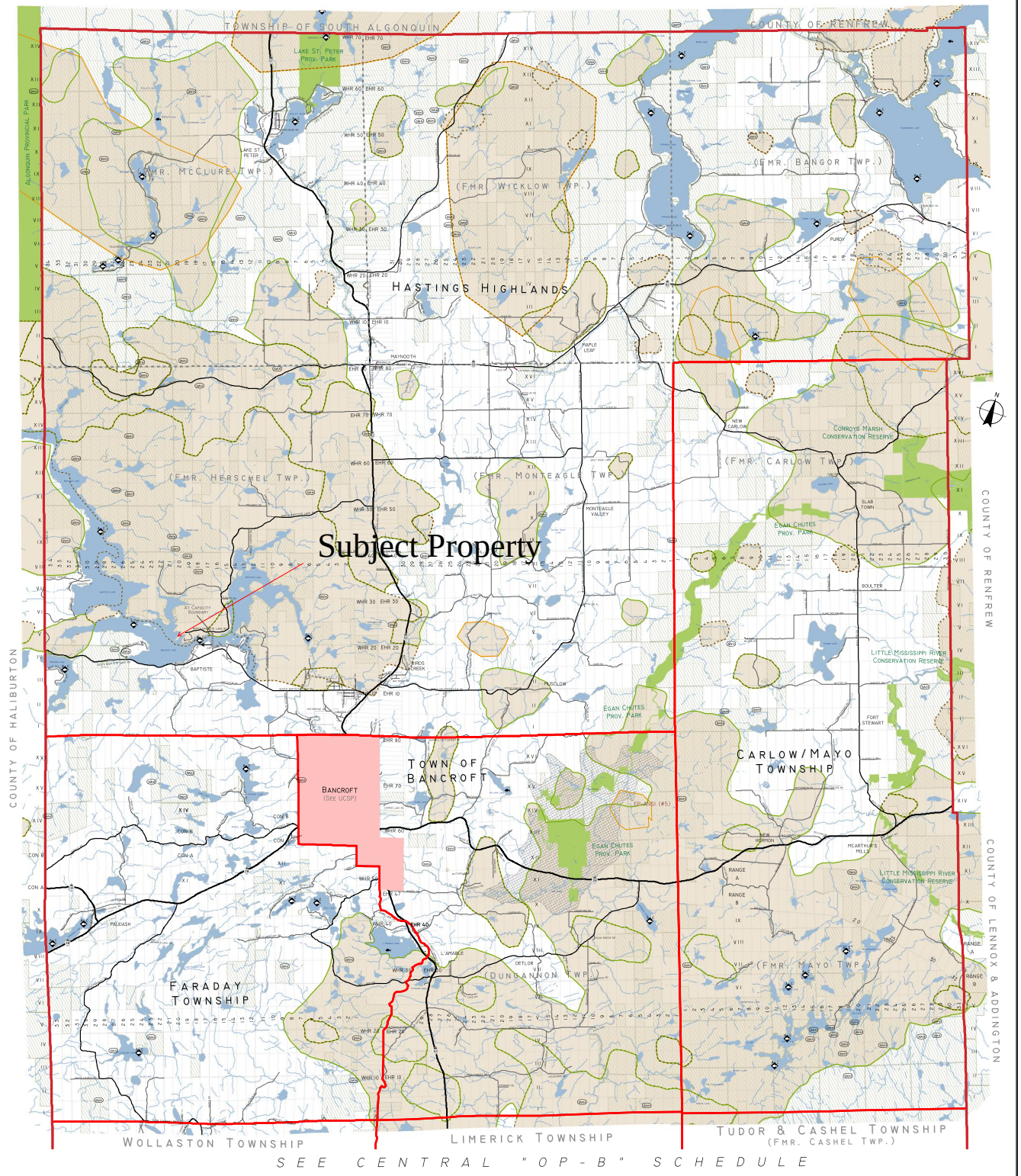
June 22, 2018

Natural Heritage Features
- Significant Woodland
- Areas of Natural or Scientific Interest (EP-ANSI)
- Areas of Natural & Scientific Interest (Small Site)
- Significant Valleyland
- Conservation Authority Land
- Provincial Parks & Conservation Reserves
- Crown Land

Significant Wildlife Habitat
- Deer Yard (Stratum 1)
- Deer Wintering Area (Stratum 2)
- Moose Early Wintering Area
- Significant Wildlife Habitat (Small Site)
- Lake Trout Lake At Capacity (LTL-AC)
- Lakes Managed for Lake Trout (LTL-C)

Geographic Features
- Stream/Creek
- Boundary of Ecoregion 6E (See 4.3.5)
- Watercourse & Waterbody
- Non Official Plan Area
- Urban Secondary Plan Area
- Lot & Concession Line
- Geographic Township Boundary
- Municipal Boundary
- County Boundary

Infrastructure
- Highway (Prov. & Fmr. Provincial)
- Collector Road (Former County)
- Municipal Road



Appendix 2. Select Photos from Site Visit

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Photo 1. Summer shoreline conditions of subject property (provided by client).

Photo 2. Shoreline frontage looking south on subject property (April 16, 2025).

Photo 3. Shoreline frontage looking north on subject property (April 16, 2025).

Photo 4. Vegetation conditions in front yard portion of subject property (April 16, 2025).

Photo 5. Vegetation conditions in front yard portion of subject property (April 16, 2025).

Photo 6. Vegetation conditions in back yard portion of subject property (April 16, 2025).

Photo 7. Vegetation conditions in back yard portion of subject property (April 16, 2025).

Photo 8. Vegetation conditions east of Irwin Road on subject property (April 16, 2025).

Photo 9. Existing main cottage to be removed (April 16, 2025).

Photo 10. Existing bunkie to be retained (April 16, 2025).

Photo 11. Existing cottage to be removed (April 16, 2025).

Appendix 3. Assessment of Habitat of Endangered and Threatened Species

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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 Eel (*Anguilla rostrata*)	END	The American Eel migrates up the St. Lawrence River into the Ottawa River and Lake Ontario. They are habitat generalists and use benthic habitats with stones, debris, and vegetation for cover. Their distribution has been severely limited by human development and damming rivers.	YES	NO	NO	NO	No local records are present within the NHIC, iNaturalist or DFP SAR data bases. The subject property and adjacent landscape are outside the known range for this species. No further assessment provided.
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	The subject property is a small lot that is highly disturbed with mature undisturbed deciduous forest is lacking. The subject property is unlikely to support this species and with upland adjacent lands similar to the subject property, it is not anticipated to be present on adjacent lands. 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	NO	NO	POSSIBLE	No local records are present within the NHIC, OBBA or iNaturalist data bases that cover the subject property and there is a lack of sand and gravel slopes along the shoreline or backlot area to provide suitable habitat. The proposed development is not anticipated to impact adjacent lands. 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
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	POSSIBLE	The subject property does not contain any wetland communities and this species was not observed during the site assessment. Proposed development on the subject property is not anticipated to impact adjacent lands. No further assessment provided.
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	YES, Herp Atlas	NO	POSSIBLE	While there is a record in the herp atlas square that covers the subject property, there is a lack of wetland habitat on the subject property to support overwintering and the property is densely shaded with conifer trees and does not provide suitable nesting habitat. The property does front Baptiste Lake that may provide habitat movement and foraging habitat and it is possible that Blanding's Turtle occur in the local area, however the proposed development is not anticipated to impact adjacent lands 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	YES	POSSIBLE	The subject property is a highly modified site and this species was not observed during the site assessment. Proposed development on the subject property is not anticipated to impact adjacent lands. 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
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	There are no records for this species in the OBBA, NHIC or iNaturalist databases that cover the subject property, and the subject property and adjacent lands are well outside the known range for this species. No further assessment undertaken.
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	YES	YES	While the subject property provides general habitat for this species, there are no records in the NHIC, Herp Atlas or iNaturalist data bases for squares covering the subject property. In addition the location of the property on a point of land and abundant development adjacent to the property with year round roads makes it unlikely that this species would be present. No further assessment is provided.
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	There are no local records within the OBBA, NHIC or iNaturalist for this species, and no suitable habitat is present on the subject property or adjacent lands. 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
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	No local records are present within the NHIC, or iNaturalist data bases. The subject property and adjacent lands do not contain open fens or wet prairies and the subject property and adjacent lands are well beyond known range. No further assessment provided.
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	NO	NO	POSSIBLE	The subject property lacks table rocks or talus slopes however anthropogenic structures that may support this species are present. Further assessment provided in report.
Eastern Red Bat (*Lasiurus borealis*)	END	The Eastern Red Bat is a long-distance migrant that hibernates in the southern United States. In Ontario, they roost in foliage of deciduous and coniferous trees of any age class and their diet is primarily moths.	YES	NO	YES	YES	The subject property contains wooded habitat with trees and a residential structure that provides potential roosting by this species. Both the structures and trees within the woodland community may provide potential habitat. Further assessment provided in the report.

[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
Hoary Bat (*Lasiurus cinereus*)	END	Hoary Bats are widely distributed across Ontario and migrate long distances between summer breeding habitat and winter range. They roost in foliage of deciduous or coniferous trees and forage in open areas often along forest edges.	YES	NO	YES	YES	The subject property contains wooded habitat with trees and a residential structure that provides potential roosting by this species. Both the structures and trees within the woodland community may provide potential habitat. Further assessment provided in the report.
Henslow's Sparrow (*Ammodramus henslowii*)	END	Henslow's Sparrows' current breeding habitat is generally limited to Prince Edward County and the Regional Municipality of Halton. Their habitat is open grasslands with dense vegetation at least 30 cm tall, thick standing dead material, <1% shrub cover, and intermediate moisture. They prefer larger, continuous grasslands and are sensitive to edge effects.	YES	NO	NO	NO	No local records are present within the NHIC, OBBA or iNaturalist data bases. The subject property and adjacent lands do not contain open grasslands with dense vegetation. No further assessment provided.
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 within the NHIC, OBBA or iNaturalist data bases, the subject property and adjacent lands do not contain large wetlands of dense emergent vegetation that would provide potential habitat for this species. 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
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	NO	YES	YES	The subject property contains wooded habitat with trees and a residential structure that provides potential roosting by this species. Both the structures and trees within the woodland community may provide potential habitat. Further assessment provided in the report.
Nine-spotted Lady Beetle (*Coccinella novemnotata*)	END	The Nine-spotted Lady Beetle is found in Southern Ontario and was last seen along the Great Lakes shorelines and may be extirpated. They are habitat generalists that use open habitats and feed on aphids.	YES	NO	POSSIBLE	POSSIBLE	This species is a found in a very small number of locations along along the great lakes in ontario and the property is outside the known range and may be extirpated. Habitats used include suburban gardens, parks, conifer and deciduous forest, grassland meadows and riparian areas. No records of occurrence for this species are present in the NHIC, or iNaturalist datatbasses. While tree removal is anticipated for development, general habitat for this species is anticipated to remain. No further assessment required.
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	NO	YES	YES	The subject property contains wooded habitat with trees and a residential structure that provides potential roosting by this species. Both the structures and trees within the woodland community may provide potential habitat. Further assessment provided in the report.

[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
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, NHIC	NO	POSSIBLE	Local records are present within the NHIC data bases for this species. While there are no streams, ponds or lakes on the subject property the property fronts onto Baptiste Lake. While the adjacent lake may provide habitat for this species, the proposed development is not anticipated to impact adjacent lands. No further assessment provided.
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	NO	NO	POSSIBLE	No records of occurrence for this species are present in the NHIC, OBBA or iNaturalist databases. The subject property is season residence with dense canopy of large trees that have bee maintained and dead trees removed. Suitable habitat for this species is lacking. The proposed development is not anticipated to impact adjacent lands. No further assessment undertaken.
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	No records of occurrence for this species are present in the NHIC, DFO or iNaturalist databases. The subject property and adjacent lands lack calcareous soils, prairie, savannahs or fens and therefore not present on the property or adjacent lands. 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
Silver-haired Bat (*Lasionycteris noctivagans*)	END	Silver-haired Bats roost primarily under bark and in the cavities of trees, making them reliant on habitats where large, decaying trees are available. They are found across Canada in the summer months and during fall migration. Some individuals overwinter in southern Ontario, but most migrate out of Canada annually.	YES	NO	YES	YES	The subject property contains wooded habitat with trees and a residential structure that provides potential roosting by this species. Both the structures and trees within the woodland community may provide potential habitat. Further assessment provided in the report.
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 is a lack of wetlands, vernal pools, creeks or strams on the subject property or adjacent Lands. Suitable habitat for this species is not present. No further assessment required.
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	NO	NO	YES	The subject property contains wooded habitat with trees and a residential structure that provides potential roosting by this species. Both the structures and trees within the woodland community may provide potential habitat. Further assessment provided in the report.

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

Appendix 4. Proposed Development Plan

RIVERSTONE
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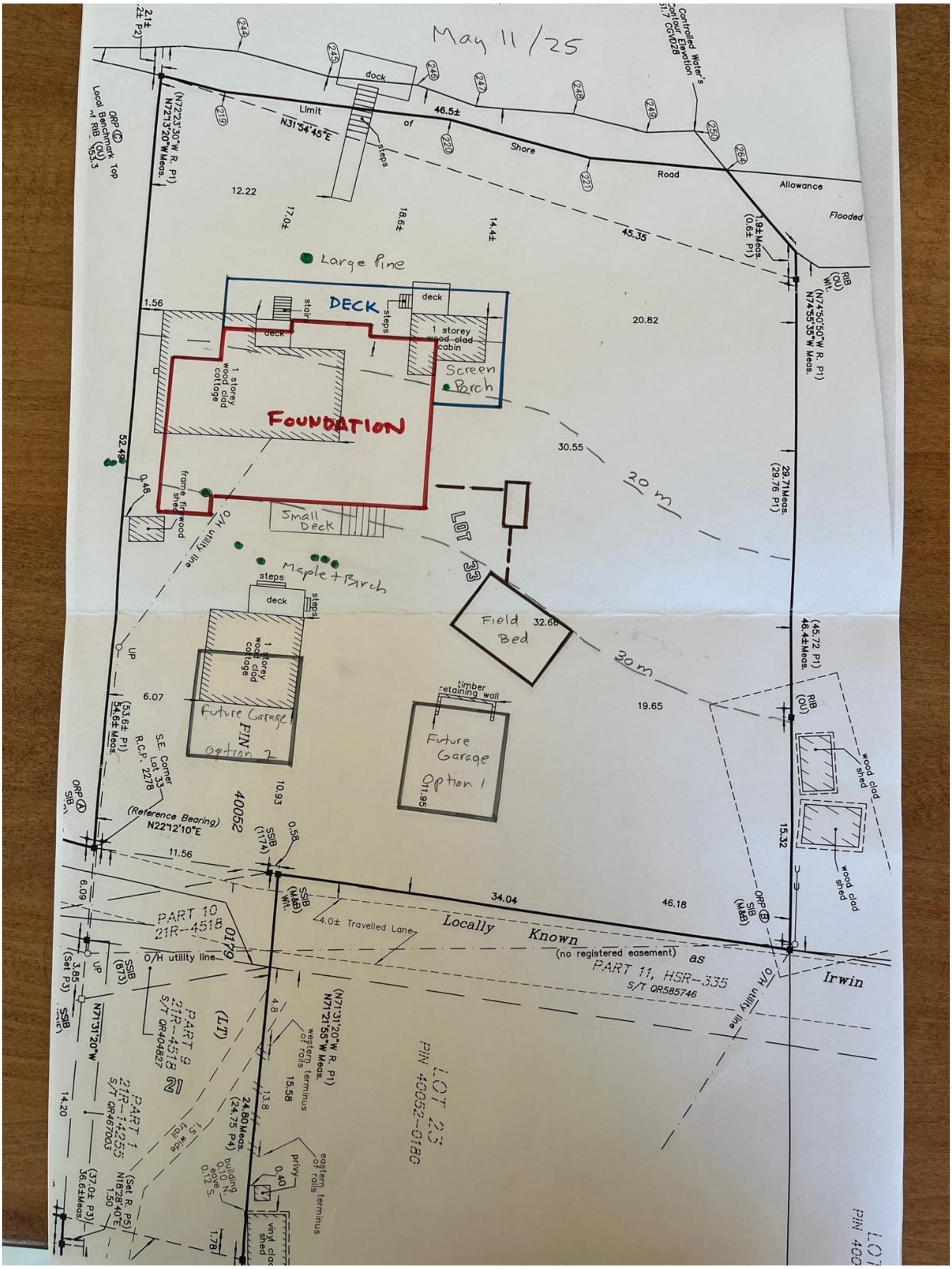

May 11/25
dock
Limit of Shore Road Allowance
N31°54'45"E
46.5±
steps
Flooded
Large Pine
DECK
deck
stairs
steps
1 storey wood clad cabin
Screen Porch
1 storey wood clad cottage
FOUNDATION
frame firewood shed
Small Deck
O/H utility line
20 m
30 m
LOT 33
Maple + Birch
Field Bed
1 storey wood clad cottage
Future Garage Option 2
timber retaining wall
Future Garage Option 1
wood clad shed
Locally Known (no registered easement) as Irwin
PART 11, HSR-335
4.0± Travelled Lane
PART 10 21R-4518
LOT 23
PIN 40052-0180

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