Scoped Environmental Impact Study
245 Church St.
Town of Penetanguishene
March 2022

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

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March 17, 2022
RS# 2021-142

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SUBJECT: Environmental Impact Study – 245 Church Street, Town of Penetanguishene County of Simcoe

Dear Ashlyn,

RiverStone Environmental Solutions Inc. is pleased to provide you with the attached Scoped Environmental Impact Study.

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

Best regards,

RiverStone Environmental Solutions Inc.

Report prepared by:

Al Shaw, M.Sc.
Senior Ecologist / Principal

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Ecologist

NON-TECHNICAL SUMMARY

Type of Study Scoped Environmental Impact Study		**Date** March 17, 2022
Project Manager Al Shaw	**Civic Address** 245 Church St.	**Development Proposed** Plan of Subdivision
	Planning Authority Town of Penetanguishene	**Client / Agent** Koenig Development / Ashlyn Kennedy (EcoVue)

Report Summary

This study has been prepared to assess natural heritage constraints associated with a property described as 245 Church St. in the Town of Penetanguishene. It is our understanding that the proponent is preparing an application to development a small subdivision on an existing lot of record. The subject property is situated in a residential area but contains natural heritage features representing potential constraints to development. It is our understanding that the Town requires that an Environmental Impact Study be prepared to assess potential impacts of the proposed activities on applicable natural heritage features. Based on both a desktop assessment and on-site investigation, RiverStone has determined that:

1. A portion of the subject property is located within one or more natural heritage features, including an area designated as significant woodland.
2. Development of the subdivision would inherently result in a loss of vegetation/woodland cover within the identified significant woodland feature; however, there is no expectation that activities would result in a negative impact to the overall function of this feature.
3. Further discussion is provided in this report to assess the functionality of on-site features and provide recommendations for mitigation where feasible and applicable.

Based on our assessment, it is RiverStone's opinion that the proposed works can be implemented without resulting in negative impacts to the integrity and function of identified significant natural heritage features. It is our opinion that the development can be carried out in a manner that meets the intent of applicable policies, regulations, and bylaws for the protection of natural heritage features.

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1 BACKGROUND

RiverStone Environmental Solutions Inc. (hereafter, "RiverStone") was retained by Koenig Development to complete a scoped Environmental Impact Study (EIS) as part of an application for subdivision on a property described as 245 Church St., Town of Penetanguishene (hereafter, "subject property"; **Figure 1**). The subject property is approximately 2.2 ha in size and contains no existing structures. The proposed plan of subdivision would result in the creation of 29 parcels, accessed via extension of existing Oxley Dr. from the north.

As per Schedule A to the Township Zoning Bylaw, the subject property is presently zoned Deferred Development – D. It is our understanding that this zone represents a form of a 'hold' mechanism until a more appropriate zone can be assigned. Schedule A to the Town Official Plan (OP; 2019) designates the subject property as part of a broader 'Neighborhood Area', while Schedule B1 assigns an overlay of 'Environmental Protection' (EP) to portions of the subject property. It is assumed that the EP overlay has been assigned to reflect a woodland feature that comprises portions of the parcel and adjacent lands.

This EIS has been prepared to inform the Town's review of the plan of subdivision and other supporting applications, with consideration for potential impacts to significant natural heritage features that may result from the development. Based on RiverStone's background review, our assessment has generally been scoped to focus on the woodland feature associated with the subject property and general habitat features that may be associated with this woodland, including potential significant wildlife habitat and/or habitat for threatened or endangered species protected under the provincial *Endangered Species Act* (ESA). RiverStone's assessment is intended to fulfill the requirements of Section 3.10.8 of the Town of Penetanguishene Official Plan (November 2018).

2 APPROACH AND METHODS

The approach and methods used to carry out this study are detailed in this section and include the following:

1. Gathering background biophysical information for the study area to become familiar with existing natural heritage feature mapping and records of features and species of conservation interest prior to the site investigation.

2. Conducting an on-site investigation to field-verify the presence or absence of natural heritage features identified during background information gathering, and to identify any additional significant features (if present).

3. Determining whether implementation of the proposed development plan will result in adverse impacts to natural heritage features, and to identify ways in which such negative impacts can be mitigated via avoidance, minimization, and/or compensation measures.

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

2.1 Background Information Review

Background biophysical information pertaining to the study area was collected from a variety of sources. These include:

- **Town of Penetanguishene Zoning Bylaw (2019)**
- **Town of Penetanguishene Official Plan (2018)**
- **Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) Natural Heritage Areas and Natural Heritage Information Centre (NHIC)** database regarding information on occurrences of SAR and provincially tracked species (squares: 17NK8460, 17NK8560); accessed Mar 7, 2022, at: http://www.giscoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US).
- **Species at Risk (SAR) range maps** (accessed Mar 2022 at: http://www.ontario.ca/environment-and-energy/species-risk-ontario-list).
- **Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005** (Cadman et al. 2007) (accessed at: http://www.birdsontario.org/atlas/squareinfo.jsp).
- **Ontario Reptile and Amphibian Atlas** (accessed at: http://www.ontarioinsects.org/herpatlas/herp_online.html).
- **Distribution of Aquatic Species at Risk** mapping generated by Fisheries and Oceans Canada in 2015 (accessed at: http://www.conservation-ontario.on.ca/what-we-do/watershed-stewardship/aquatic-species-at-risk).
- **Atlas of the Mammals of Ontario** (Dobbyn 1994).
- **Current and historical aerial photographs.**

2.2 Existing Conditions Assessment

2.2.1 *Site Investigation*

The results of the background review outlined in **Section 2.1** informed the scoping of site investigations carried out by a RiverStone Ecologist (see **Table 1**). Site investigations were focused on characterizing and delineating natural heritage features that are considered relevant under the policy context, including woodlands, wildlife habitat, and potential habitat for threatened or endangered species. Overall, the on-site data collection effort was considered appropriate given the location and scale of the proposed development plan. Where applicable, discrete feature boundaries were delineated with a high-accuracy GPS receiver, and all relevant features were photographed and catalogued for inclusion in this report (**Appendix 1**). Existing conditions, as characterized during our on-site investigation, are described in **Section 3**.

Table 1. Site investigations and primary tasks.

Date	Primary Task(s)	Staff
June 24, 2021	General ecological site assessment; ELC and vegetation survey; general SAR habitat assessment and Butternut survey; general SWH assessment; breeding bird point count survey #1.	M. Francis
July 6, 2021	Breeding bird point count #2; supplementary ecological site assessment.	M. Francis

2.2.2 *Habitat-based Wildlife Assessment*

RiverStone's primary approach to site assessment is habitat-based. We first focus on evaluating the potential for significant features and species within an area of interest, prior to undertaking any targeted assessments or surveys. An area is considered potential habitat if it satisfies several criteria, usually specific to a species, but occasionally characteristic of a broader group (*e.g*., several species of turtles use sandy shorelines for nesting, several species of bats use cavity trees as day roosts and maternity sites, etc.).

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

2.2.3 *Targeted Wildlife Assessment*

Where appropriate, RiverStone explores further species-specific assessments in accordance with applicable standard methods and protocols. Targeted survey efforts may be undertaken due to one or more triggers, such as a specific request from an approval authority, an existing record for a species of interest, or a limitation to a habitat-based assessment (*e.g*., limited property access). For this study, targeted survey methodologies were employed for the following groups of wildlife.

2.2.3.1 Breeding Birds

Breeding bird surveys were conducted in 2021 in accordance with the Ontario Breeding Bird Atlas (OBBA) protocol (Bird Studies Canada et al. 2001). Surveys were conducted within the appropriate season (May 24–July 10), time of day (between dawn and 5 hours after dawn), and weather conditions (no rain, wind speed ≤3 on the Beaufort Wind Scale). A total of two point-count stations were surveyed in 2021 (**Figure 2**) with each survey event occurring for a minimum duration of 10 minutes at each station. The purpose of this exercise was two-fold: to identify the presence of potential endangered or threatened bird species, and/or to identify species which may indicate the presence of SWH associated with one or more vegetation communities.

2.2.4 *Topography, Surficial Geology, & Drainage Assessment*

The geophysical setting of the subject property was determined using topographic mapping, soils mapping, aerial photography, and descriptions gathered through on-site investigations. Drainage features (where present) are identified through the review of background mapping resources and/or delineated in the field.

2.2.5 *Vegetation Community Assessment*

Vegetation communities on the subject property were delineated according to Ecological Land Classification (ELC) community tables (Lee et al. 1998). Vegetation communities were delineated via aerial photo interpretation and subsequently confirmed and refined in the field. Wetland boundaries (where present) were delineated in accordance with the "50% wetland vegetation rule" as directed by the Ontario Wetland Evaluation System (OWES).

2.3 Significant Natural Heritage Feature Assessment

Provincial and local planning policies employ varying terms for natural heritage features and designations that have recognized 'statuses' within the relevant planning jurisdiction. This report refers to relevant features as 'significant natural heritage features' (SNHF), consistent with the terminology of Ontario's Provincial Policy Statement (PPS). RiverStone conducted a review of the background information sources identified in **Section 2.1** to determine if relevant SNHF have been identified in association with the subject property by the province and/or local planning authority. Based on our background review, SNHF that may be present within the subject property or adjacent lands (*i.e.*, within 120 m), include the following:

- Wetlands
- Area of Natural and Scientific Interest
- Significant Woodlands
- Significant Wildlife Habitat
- Habitat of Endangered and Threatened Species

RiverStone assesses the potential presence of SNHF in accordance with provincial guidance documents, including the *Natural Heritage Reference Manual (NHRM) for the Natural Heritage Policies of the Provincial Policy Statement* (NDMNRF 2010) and the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (NDMNRF 2015). The potential presence/absence of habitat for endangered and/or threatened species was assessed using a combination of the background information review outlined in **Section 2.1** and the habitat-based approach outlined in **Section 2.2.1**.

2.4 Impact Assessment and Mitigation Measures

To carry out a defensible assessment of development suitability and potential development impacts, RiverStone employs the following approach:

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

In instances where the potential for negative impacts to natural heritage features exists, mitigation measures are offered to avoid, minimize, and/or compensate for such impacts. RiverStone's impact assessment and recommended mitigation measures are provided in **Section 5**.

2.5 Assessment of Conformance with Applicable Environmental Policies

There are several relevant environmental policies (*e.g.*, statutes, regulations, plans, guidance documents, etc.) that may apply to the study area and proposed development, which are listed below. An assessment of the proposed development's consistency and conformity with these environmental policies is offered in **Section 6**.

- Town of Penetanguishene Zoning Bylaw (2019)
- Town of Penetanguishene Official Plan (2018)
- Provincial Policy Statement, 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13
- Provincial *Endangered Species Act*, S.O. 2007, c. 6
- Federal *Fisheries Act*, R.S.C. 1985, c. F-14
- Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22

3 EXISTING CONDITIONS

3.1 General Site Conditions and Land-uses

The subject property contains no existing residence or other structures and is composed of mixed natural cover that is primarily cultural/anthropogenic in nature. Based on a review of historical aerial imagery (County of Simcoe Interactive Mapping), the property appears to have been used for agricultural purposes as of 1978. By 1989, the rear portion of the parcel had been planted in rows of trees to form a young coniferous plantation. Since that time, various sections of the property appear to have been actively maintained as mowed grass, while other areas have experienced various stages of succession. Dating back to at least the early 2000s, the subject property appears to have been used as an informal trail and dumping area for household refuse.

Land uses in the vicinity of the subject property are primarily mixed residential, with a variety of urban forest features and parks. The broader landscape includes various portions of the settlement area of Penetanguishene. Representative photos of site conditions are contained in **Appendix 1**.

3.2 Topography, Physiography, & Drainage

Topography across the subject property is described as flat to gently sloping, with a very moderate drop in elevation occurring from west to east across the parcel. No steep slopes or prominent landform features are present within or directly adjacent to the subject property. The Ontario Soil Survey classifies soils within the area of the subject property as a loamy sand, part of the Tioga series. Tioga series soils are generally deep, well-draining, and provide minimum potential for surface runoff. No drainage features were identified on the subject property through our background review or on-site investigation.

3.3 Wildlife Habitat

The combined results of RiverStone's background review and on-site assessment indicate that the subject property and adjacent lands are likely to provide habitat for a limited number of wildlife species. Given the settled nature of the adjacent landscape, any wildlife species present on the subject property and adjacent lands would be expected to be tolerant of urban environments. It is assumed that habitat exists directly on the subject property for a variety of generic species, such as Raccoon (*Procyon lotor lotor*) and Grey Squirrel (*Sciurus carolinensis*), etc., while slightly larger woodland patches on adjacent lands may support species such as White-tailed Deer (*Odocoileus virginianus*) and Coyote (*Canis latrans*). In general, the subject property and adjacent woodland patches are isolated on the landscape and would not be expected to provide any habitat for wide-ranging or area-sensitive mammals, or important wildlife corridors or linkages.

As discussed in **Section 2.2**, RiverStone undertook two targeted surveys to assess the diversity of breeding birds on the subject property. As would be expected in this setting, primarily urban-tolerant, generalist species were documented, including: Blue Jay (*Cyanocitta cristata*), Northern Cardinal (*Cardinalis cardinalis*), Song Sparrow (*Melospiza melodia*), Black-capped Chickadee (*Poecile atricapillus*), American Crow (*Corvus brachyrhynchos*), European Starling (*Sturnus vulgaris*), American Robin (*Turdus migratorius*), American Goldfinch (*Spinus tristis*), Northern Flicker (*Colaptes auratus*), Eastern Phoebe (*Sayornis phoebe*), Grey Catbird (*Dumetella carolinensis*), Red-breasted Nuthatch (*Sitta canadensis*), Chipping Sparrow (*Spizella passerina*), and Red-eyed Vireo (*Vireo olivaceus*).

In addition to the above, a search of the local area through the Natural Heritage Information Center (NHIC) database identifies element occurrences for several wildlife species of conservation concern, as discussed in further detail in this report. A discussion on wildlife species and/or habitat features that are relevant within the policy context, including individuals of species at risk, are provided in **Section 4** of this report within the context of SNHF.

3.4 Vegetation Communities

Existing vegetation communities within the subject property were assessed during the 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 in accordance with Lee et al (1998) is provided on **Figure 2.** The following sections provide descriptions for each of the vegetation communities identified on site.

3.4.1 *CUW1: Cultural Woodland*

This community occurs along the entrance laneway from Church St. and includes a low canopy of successional/cultural growth. Prominent species include Black Walnut (*Juglans nigra*), Black Locust (*Robinia pseudoacacia*), and Trembling Aspen (*Populus tremuloides*). Patches of dense Staghorn Sumac (*Rhus typhina*) and weedy meadow groundcover (see CUM1 below) occur along exposed edges.

3.4.2 *CUM1: Mineral Cultural Meadow*

This community encompasses a large area of the central portion of the subject property. It is assumed that the area was formerly maintained as an agricultural plot and/or manicured grass area. Dominant herbaceous cover includes a typical old field mix of pasture grasses (e.g., *Bromus inermis, Dactylis glomerata, Poa compressa*), Oxeye Daisy (*Leucanthemum vulgare*), Vetch (*Vicia sp*.), Goldenrod (*Solidago canadensis*), Clover (*Trifolium spp*.), Carrot (*Daucus carota*), etc. Isolated groupings of young shrubs and trees occur along fence lines, including Spruce (*Picea sp*.), Trembling Aspen, and Staghorn Sumac, while dense patches of invasive Black Locust are beginning to spread throughout the central portion of the meadow.

3.4.3 *CUTW1/CUT1: Mineral Cultural Woodland/Thicket*

The community contains a similar groundcover mix as the adjacent CUM1 community; however, with a shrub and low tree strata that has progressed to become partially dominant. A variety of woody species are present at varying heights, including: Staghorn Sumac, Raspberry (*Rubus idaeus*), Thicket Creeper (*Parthenocissus sp*.), Dogbane (*Apocynum androsaemifolium*), Manitoba Maple (*Acer*

negundo), Glossy Buckthorn (*Frangula alnus*), White Birch (*Betula papyrifera*), White Cedar (*Thuja occidentalis*), Aspen, Black Cherry (*Prunus serotina*), etc.

3.4.4 *CUT1/CUM1: Mineral Cultural Thicket/Meadow*

This community is a narrow strip of semi-open cover located between two adjacent cultural plantation communities. It represents another cultural mix, with groundcover components that are representative of cultural meadow, and successional shrub growth that is gaining dominance throughout. Abundant Raspberry and Blackberry (*Rubus spp*.) are present throughout this community, with regenerating shrub-height Sumac, Black Cherry, and Red Oak (*Quercus rubra*).

3.4.5 *CUP3(A & B): Coniferous Cultural Plantation*

This community is represented by two small patches of coniferous cultural plantation in the eastern portion of the subject property. CUP3(A) contains young to mid-aged Spruce in planted rows with pockets of Aspen present. Sparse associates of Red Oak, Sugar Maple (*Acer saccharum*), and White Ash (*Fraxinus americana*) are present throughout. Groundcover is sparse or absent, with variable patches of hardwood seedlings, colonial Aspen growth, Solomons Seal (*Maianthemum racemosum*), Poison Ivy (*Toxicodendron radicans*), Large-leaved Aster (*Eurybia macrophyllum*), and Glossy Buckthorn. CUP3(B) is separated from CUP3(A) by an open patch of meadow/thicket (see above) and is represented by a narrow strip, also containing row-planted Spruce with no prominent groundcover or associate species.

3.4.6 *FOD4: Dry – Fresh Deciduous Forest Ecosite*

This community occurs along the southern property boundary, and represents a broad hedgerow between the adjacent cultural meadow and manicured grass area on the property to the south. The canopy is dominated by a colony of Large-toothed Aspen (*Populus grandidentata*), with associates of Manitoba Maple and Sugar Maple. A sub-canopy/shrub layer is present, containing a mix of Manitoba Maple, Sumac, and Buckthorn. Groundcover includes a very similar mix of species as contained in adjacent CUW1/CUT1 discussed above.

3.4.7 *FOD2-4: Dry – Fresh Oak – Hardwood Deciduous Forest Type*

This community is represented by a narrow band of mature hardwoods that occurs along the north-eastern property boundary/fence line. This was presumably an old hedgerow, dominated by large individual Red Oak, with associates of Sugar Maple, White Ash, Basswood (*Tilia americana*), and Black Cherry. Groundcover is variable and includes hardwood regeneration, Poison Ivy, and ornamental garden species that have spread from areas of dumped yard waste.

4 SIGNIFICANT NATURAL HERITAGE FEATURE ASSESSMENT

4.1 Wetlands

RiverStone's on-site investigation did not document any wetland vegetation communities; however, based on available background mapping, a single wetland feature is mapped as occurring approximately 70 m south of the subject property cover (see **Figure 1**). This feature is considered 'unevaluated' and, to our knowledge, has not been ground-truthed to confirm its presence or extent. In RiverStone's experience, the provincial layer for unevaluated wetland features is frequently found to

be inaccurate following site-level review. In this scenario, based on interpretation of aerial imagery and soil classification mapping, it is possible that no wetland feature exists in this location. Notwithstanding, RiverStone did not have direct access to the area of mapped unevaluated wetland south of the subject property, and cannot confirm presence or absence.

For the purpose of conducting an EIS, unevaluated wetlands over 2 ha in size ('locally-significant features) within 120 m of a development proposal should be reviewed for development-related impacts. On this basis, RiverStone provides an assessment of potential impacts and to the mapped unevaluated wetland feature that may result from implementation of the development plan (**Section 5.2.1**).

4.2 Area of Natural and Scientific Interest

ANSIs are recognized and designated due to their unique representation of ecological, hydrological, and/or geological conditions on the landscape, and these features generally represent restrictive constraints to development under relevant provincial policy. Based on available background mapping, the nearest ANSI feature is located over 300 m east of the subject property, with existing development present within the intervening space. Due to the distance and functional separation between the subject property and the ANSI, the feature is not considered relevant to this assessment.

4.3 Significant Woodland

Significant woodlands represent areas of forested cover with recognized significant attributes, such as large contiguous blocks of woodland, woodlands with unique characteristics, and/or woodlands that support economic values, cultural values or other ecosystem services. It is generally the responsibility of the relevant planning authority to designate significant woodland on a comprehensive basis; however, where appropriate, site-specific designation and/or refinement of these features can also be undertaken using standardized criteria endorsed by the province and/or the planning authority.

Approximately 1.57 ha of the subject property contains vegetation communities that are characterized as woodland (or part of a complex that includes woodland). As described in **Section 3.3**, large portions of these communities are representative of early-successional/cultural woodlands, some of which are complexed with 'thicket' vegetation cover. As per Schedule B1 of the Town OP, an EP overlay encompasses approximately 0.71 ha of woodland on the subject property, specifically associated with communities FOD2-4 and CUP3(A) (see **Figure 2**). These communities are loosely connected to a broader woodland feature that extends onto adjacent lands to the south. The entirety of this woodland feature, both on and off of the subject property, has a total contiguous area of 12-13 ha. It is our understanding that this woodland feature, and associated EP overlay, is recognized as an area of significant woodland. It is our further understanding that this designation is derived from a Natural Heritage Study Update undertaken in 2017 for the Town of Penetanguishene by the Severn Sound Environmental Association (SSEA).

RiverStone conducted a review of the SSEA study to understand the rationale for the assigned significant woodland designation. Map 2 of the Natural Heritage Study depicts the results of an analysis of significant woodland features within the Town (see **Appendix 2**). The majority of woodland cover within the municipality has been classified as significant woodland based on satisfying one or more criteria derived from the provincial Natural Heritage Reference Manual. As discussed in Section 4.1 of the SSEA study, the Town contains approximately 50% woodland cover by area, which means that the minimum size threshold for designating a woodland as significant would generally be

50 ha. Lower minimum area thresholds can be applied for various reasons, *e.g.*, woodlands that support connective linkages between other significant features. The woodland feature associated with the subject property is partially situated within a significant groundwater recharge area, meaning that it falls within a category described in the SSEA study as '*woodland >10 ha and <20 ha with groundwater protection functions*' minimum. On this basis, the feature has been designated as a significant woodland.

Through review of the above assessment, as well as RiverStone's own background review and on-site investigation, it is assumed that the primary importance of this woodland feature is reflective of its groundwater protection services, and not its ecological functions. Additionally, it is important to note that only portions of the subject woodland feature are contained within the significant groundwater recharge area overlay. RiverStone provides an assessment of potential impacts to relevant significant woodland functions that may result from implementation of the development plan (**Section 5.2**).

4.4 Significant Wildlife Habitat

SWH represents a range of habitat features that are recognized as providing specialized or otherwise important functions for various forms of wildlife. Designation of confirmed SWH is ultimately the responsibility of the relevant planning authority and, to our knowledge, no confirmed SWH features or functions have been identified within the subject property by the Town or other planning authority.

To ensure due diligence in this regard, RiverStone has reviewed applicable technical guidance for the identification of specific SWH features and functions as contained in the SWH Criteria Schedules for Ecoregion 6E (MNRF 2015). A preliminary assessment of the criteria schedules was undertaken to support this assessment (**Appendix 3**). Given the general lack of high-quality natural features, the subject property would not be expected to support most forms of SWH. Categories of SWH features/functions that may be expected to occur in the vicinity of the subject property are discussed below.

4.4.1 *Special Concern and Rare Wildlife Species*

RiverStone staff have conducted a review of the list of species designated as special concern in Ontario, as per Schedule 4 of Ontario Regulation 230/08, located here: https://www.ontario.ca/laws/regulation/080230. RiverStone further reviewed the NHIC database for existing records of element occurrences for special concern or rare species (data square: 17NK8460, 17NK8560). The NHIC database contains only one record for a special concern species within the overlapping data square: Snapping Turtle (*Chelydra serpentina*); however, the study area contains no features that would support habitat for this species.

In addition to the above, RiverStone acknowledges that almost all woodland features may represent potential habitat for one or more woodland bird species listed as special concern in Ontario, *e.g.*, Eastern Wood-pewee (*Contopus virens*) and Wood Thrush (*Hylocichla mustelina*). There are no local records for these species in the NHIC database; however, both species are commonly encountered in woodlands with suitable structure and vegetation characteristics. Based on our assessment, the small patch of woodland on the subject property does not appear conducive to supporting either of these species. It is noted that RiverStone undertook two breeding bird surveys as part of this study, which confirmed the absence of any special concern woodland bird species.

Based on the results of our assessment, there is no expectation that any special concern or rare wildlife species occur on the subject property.

4.5 Habitat of Endangered and Threatened Species

To assess the potential presence of individuals and/or habitat for endangered and threatened species within the subject property, RiverStone staff conducted a review of the list of species designated as endangered and threatened in Ontario, as per Schedules 2 and 3 of Ontario Regulation 230/08, located here: https://www.ontario.ca/laws/regulation/080230. In our experience, the potential presence of most provincially endangered and/or threatened species can be ruled out based on their limited geographical ranges in the province and/or a lack of specific habitat conditions that they require to carry out key life processes.

To support our assessment, RiverStone further reviewed the NHIC database for existing records of element occurrences for endangered or threatened species (data squares 17NK8460, 17NK8560), as well as the databases of the OBBA and ORAA. Background information review was followed by the on-site investigation, which documented vegetation conditions for further habitat-based assessment. It is noted that the on-site assessment did not document the presence of any readily-identifiable species that may be expected to occur in the general area, *e.g.*, Butternut.

The individual species discussed below were either identified through our background review or otherwise identified by staff as having the potential to be present within the subject property or adjacent lands. Where the likely or confirmed presence of an individual species and/or its habitat was supported by our field assessment and background review, these species are discussed further in the impact assessment in **Section 5.3**.

4.5.1 Bobolink *(Dolichonyx oryzivorous)*

NHIC's database contains a record of element occurrence for Bobolink for one of the 1 km grid squares associated with the subject property. In general, this species requires open grassland-type habitat conditions to carry out key life processes, and such conditions are absent within the subject property or adjacent lands. No further assessment undertaken.

4.5.2 Eastern Meadowlark *(Sturnella magna)*

NHIC's database contains a record of element occurrence for Eastern Meadowlark for one of the 1 km grid squares associated with the subject property. In general, this species requires open grassland-type habitat conditions to carry out key life processes, and such conditions are absent within the subject property or adjacent lands. No further assessment undertaken.

4.5.3 Endangered Bat Species *(Myotis lucifugus, M. septentrionalis, M. leibii, Perimyotis subflavus)*

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

Current direction from MECP prescribes that targeted surveys of treed habitats/snags for endangered bat species are not necessary if a project would involve removal of only a small number of potential maternity or day roost trees in treed habitats (or none at all). This approach assumes that other appropriate mitigation measures are employed to avoid impacts to individual bats (MECP 2021). Notwithstanding, during our on-site investigation, RiverStone staff conducted a general qualitative assessment of potential bat habitat. As would be expected in any treed area, individual dead-standing trees are present; however, no prominent concentrations or clusters of dead trees or cavity-bearing trees were observed. Importantly, the vast majority of treed vegetation communities are in an early state of succession, with the exception of the narrow band of mature hardwoods present along the north-eastern property boundary.

Notwithstanding the above, it is not possible to rule out the potential for individuals of endangered bat species to be present during the active season anywhere on the landscape where trees are present. Further discussion, including an assessment of potential impacts to individuals and habitat for these species (should they be present) resulting from implementation of the proposed development plan, is provided in **Section 5.3**.

4.5.4 Lake Sturgeon (Great Lakes - Upper St. Lawrence River population) *(Acipenser fulvescens pop. 3)*

NHIC's database contains a record of element occurrence for Lake Sturgeon for one of the 1 km grid squares associated with the subject property. Requisite habitat conditions (i.e., aquatic environments) are absent within the subject property or adjacent lands. No further assessment undertaken.

4.5.5 Massasauga *(Sistrurus catenatus)*

NHIC's database contains a record of element occurrence for Massasauga for the 1 km grid squares associated with the subject property. This species may be associated with a broad range of habitat types and is known to occur locally across the eastern Georgian Bay coast, and parts of southern Georgian Bay. Occurrences of Massasauga have experienced significant declines across the southern portion of its range; however, the Inaturalist database contains numerous current records of observations along the northern portions of the Penetanguishene peninsula and nearby islands (e.g., Beausoleil Island).

Massasaugas rely on a mix of cover throughout the active season, but generally require semi-open habitats such as wetlands, forest edges, and rock barrens for thermoregulation. This species is also fairly dependent on large tracts of natural cover, and individuals are highly susceptible to mortality by road kill. The woodland feature associated with the subject property is small and lacks the mix of habitat conditions that would be required to sustain a population of Massasauga. The feature is also isolated within an urban area and bordered by busy roadways and residential development.

Based on the above, it is assumed that the NHIC record associated with the subject property is related to either a historical observation, or an observation recorded elsewhere within the large (1 km^2) data square that overlaps the subject property. There is no expectation that the subject property and associated woodland feature is supporting habitat for this species, and no further assessment is undertaken in this regard.

5 IMPACT ASSESSMENT & MITIGATION PLANNING

Based on a concept plan drawing provided by the proponent (**Appendix 4, Figure 3**), the proposed plan of subdivision would involve the creation of 29 new lots from the existing subject property. The block would be accessed via extension of existing Oxley Dr. from the north, which provides access to a single cul-de-sac that would host the majority of the lots. A single parcel would continue to be accessed via the current property entrance on Church Street.

As discussed in **Section 4**, several SNHFs have been confirmed or have the potential to occur on the subject property and/or adjacent lands. The following sections outline the potential impacts to these features, providing recommended mitigation measures to avoid or minimize the potential for impacts where appropriate. RiverStone has also assessed the potential for impacts to other general natural features and functions that warrant consideration during implementation of the proposed development plan (*e.g.*, bird nests). The potential for negative impacts on these features is discussed below, and several recommendations are listed to support appropriate impact mitigation through the construction process. In assessing and identifying potential negative impacts to a natural heritage feature through a development process, it is important to understand how the PPS defines negative impacts. For most SNHFs protected under the PPS, negative impacts are defined as:

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

The NHRM provides more detailed guidance to practitioners in determining what constitutes a negative impact in the context of development and site alteration. Section 13.2 of the NHRM states the following:

> "*To determine negative impacts on a significant natural heritage feature or area, the cumulative negative impacts from development or site alteration activities (e.g., impacts that adversely affect the stability of the feature and its ability to continue) must be considered against the integrity of the feature. The current and future ecological functions of the natural feature or area as they relate to the surrounding natural heritage system (e.g., connectivity) must be considered as well. The PPS definition for "negative impacts" does not state that all impacts are negative, nor does it preclude the use of mitigation to prevent, modify or alleviate the impacts to the significant natural heritage feature or area*".

RiverStone's impact assessment is intended to be reflective of the above guidance, with consideration for the integrity and function of the feature as a whole, and in acknowledgement that not all development and site alteration represents a negative impact. Ultimately, RiverStone's assessment is intended to inform a review of the above proposal by the appropriate approval authority. Our assessment is based on a review of existing conditions at the time of site investigation, as illustrated on **Figure 2** and in the photo record contained in **Appendix 1**. The concept plan depicted by RiverStone on **Figure 3** should not be considered survey grade (*i.e.*, for reference purpose only).

5.1 Wetlands

As discussed, an unevaluated wetland feature is mapped as near as 70 m to the south of the southern property boundary. Based on review of aerial imagery and other background materials (*e.g.*, soil and contour mapping), it is possible that no wetland is present in the mapped location; however, without further investigation, our assessment assumes the feature is present. In general, development and/or

site alteration activities that occur in proximity to wetlands have the potential to cause negative impacts via the following pathways:

- Alterations of surface water and/or groundwater contributions that may result during construction (e.g., dewatering, etc.), from increased coverage of impervious surfaces (e.g., roads, roofs, etc.), and/or modifications to existing topography or drainage;
- Increased sediment and/or nutrient loadings to features via runoff exiting the development area from construction to post-completion of the project. This may adversely affect water quality via increased turbidity, nutrient enrichment, contamination by toxic substances, changes in pH, etc.;
- Loss of habitat for wetland-dependent wildlife, as well as constructed-related impacts to such wildlife during the construction process; and,
- Increased human activity/encroachment within the wetland, which may result in soil compaction, dumping, vandalism, or other disturbances.

The intervening space between the subject property and mapped wetland is composed of grassed lawn and upland forest cover. These areas support well-draining soils, with no evidence of connecting surface drainage. If a wetland feature is present in the mapped location, there is assumed to be no functional hydrologic connection to areas of the subject property. The grade within and to the south of the subject property is relatively flat, meaning that the proposed development presents minimal risk to the wetland via sedimentation from runoff. Standard work site isolation measures are listed below to further reduce the potential for construction-related disturbance to off-site features.

It is also noted that the separation distance of 70 m would be more than sufficient to buffer the wetland feature from any anthropogenic stressors or influences associated with proposed development on the property. Moreover, given the existing landscape context, any wetland-dependent wildlife that may be associated with the mapped feature would be expected to be tolerant of urban settings. In general, there is no expectation that proposed development of the subject property would negatively impact or influence functions of the unevaluated wetland feature, should it exist as mapped.

5.2 Significant Woodlands

As discussed in **Section 4.3**, the woodland feature that encompasses most of the subject property is classified as a significant woodland as per the Town of Penetanguishene Natural Heritage Study (SSEA 2017). The policy overlay of EP on Schedule B1 of the Town's OP is assumed to be reflective of this designation. As per Map 2 of the Natural Heritage Study, the subject woodland feature falls into a category of significant woodland described as "*Woodland >10 ha and <20 ha with groundwater protection functions*". It is interpreted that designation of this feature as significant woodland is largely reflective of this specific ecosystem service (*i.e.*, groundwater recharge), and not necessarily its ecological functions. That is, if the feature was not located in a significant groundwater recharge area, it would not otherwise meet criteria to be considered significant. Therefore, an assessment of impacts would logically be focused on if/how proposed development may impact the associated significant groundwater recharge function.

From an ecological perspective, the broader woodland feature is relatively small in the regional and local context. The feature lacks interior woodland habitat and does not support linkages between other significant natural heritage features. For the portion of woodland contained within the subject property, most of the canopy cover is relatively young, having been established as plantation woodland approximately ~30 years ago (based on review of historical images on County of Simcoe Interactive

Map). It is also noted that, despite a narrow hedgerow connection along the south-eastern property corner, the small patch of woodland on the subject property is functionally isolated from the remainder of the broader woodland feature. Further review may even be warranted to determine if woodland on the subject property is sufficiently connected to the broader woodland feature to be considered contiguous.

As illustrated in the development concept plan (**Figure 3**, **Appendix 4**), the majority of woodland within the subject property would be removed to accommodate the proposed subdivision. This is primarily limited to removal of cultural woodland and plantation communities, as described in **Section 3.4**. A protection zone has been proposed that would promote retention of mature trees in the eastern portion of the lot (associated with community FOD2-4). On a functional level, and based on the assessment above, proposed removal of woodland cover on the subject property would not constitute a negative impact to important or sensitive ecological functions of the broader significant woodland. Proposed development would not reduce the extent of interior woodland, as the feature presently contains no such areas. Likewise, there would be no potential for loss of any wildlife movement corridors/linkages, as the feature does not presently support this function. Based on our assessment, no sensitive or significant wildlife habitat is likely to be present within the on-site portions of the woodland.

As previously discussed, the broader woodland feature associated with the subject property is designated as significant due to contributions to groundwater infiltration and local drinking water supplies. Importantly, it is noted that the portion of the woodland within the subject property does not actually appear to be contained within the delineated significant groundwater recharge area on Schedule B2 of the Town OP. Regardless, in order to demonstrate no net negative impacts to the key functions of the significant woodland feature, proposed development would be expected to remain consistent with any local and/or provincial policies related to source water protection. Assuming this can be accomplished, there is no expectation that proposed development would impact the function for which the significant woodland feature has been identified.

RiverStone provides the following mitigation recommendation(s) related to woodlands/significant woodlands:

- **Implement the tree preservation zone along the backs of lots 13-29 as per the development concept plan (Appendix 4).**
- **Implement applicable vegetation clearing timing windows as outlined in report sections below.**
- **Adhere to relevant local and/or provincial policies related to source water protection.**

5.3 Habitat of Endangered and Threatened Species

The potential for the subject property to support habitat for endangered and threatened species is highly limited. However, one or more forested ecosites on and adjacent to the subject property may be expected to support some level of seasonal bat activity, which may include bat species that are classified in Ontario as endangered. This conclusion would be drawn for any area containing tree cover, and is not the result of any specific features or attributes identified on the subject property.

Based on our assessment provided in **Section 4.5.3**, woodland communities within the subject property are generally lacking appropriate structure for supporting concentrations of bat habitat. Specifically,

woodland cover on site is mostly successional in nature, with the majority of trees observed to be relatively young and in good health, *i.e.*, lacking clusters of older, dead-standing or cavity-bearing trees. However, despite a lack of observed significant habitat features for bats, it would not be possible to state conclusively that individual bats will not be present on site during the active season. Therefore, mitigation measures are warranted to ensure that proposed development would not result in harm to bats, including individuals of endangered bat species.

For scenarios involving small-scale tree removal, current direction from MECP regarding impact avoidance for endangered bats includes strict adherence to vegetation removal timing windows. By limiting the timing window in which trees can be removed to outside of the active season for bats, development activities can avoid incidental harm to individuals of endangered bat species. Additionally, it is noted that some tree cover will be retained on site through a preservation zone (generally associated with FOD2-4 and FOD4). The trees within this retention zone are the most mature on the property, with the highest likelihood of hosting individual bats during the active season. The remainder of the woodland feature located south of the property on adjacent lands would also be expected to continue supporting this potential habitat function. Likewise, abundant suitable forested habitat is present on the broader landscape, meaning that habitat availability does not represent a limiting factor to local bat populations.

Assuming implementation of appropriate tree removal timing windows, there is no expectation that the proposal will result in any negative impacts to individuals of endangered bat species. Moreover, there is no expectation that proposed development would negatively impact the availability or function of potential local and regional habitat for bats. Recommendations are clarified as follows:

- **Any tree removals required to accommodate potential future development take place outside of the season in which endangered bats may be active, *i.e.*, April 1 – Sept 30.**

- **In the event that tree clearing must occur within the above-noted timing window, additional studies will need to be completed to confirm the presence or absence of SAR bats. These studies could include snag tree surveys and acoustic monitoring of the area where trees will be removed, by a qualified professional. Should SAR bats or bat habitat be detected, the MECP should be contacted to determine if a permit under ESA would be required to proceed.**

5.4 General Impact Assessment and Mitigation

It is RiverStone's general opinion that proposed development can be accomplished without adversely impacting the function or integrity of identified natural heritage features. However, it is acknowledged that implementation of the proposed development plan will inherently result in removal of vegetation and temporary construction disturbance. The following general measures are recommended in this regard:

- **Grading and other activities that cause disturbance outside of the building envelope should be minimized to the extent possible during any future construction period. All erosion and sediment control measures should be implemented as per management practises and as per specific measures listed under Section 5.1.**
- **In addition to noted tree removal timing windows related to bats, clearing of any vegetation should be restricted to times outside of the period April 15 to August 30. If development and site alteration must 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 the Migratory Birds Convention Act or Fish and Wildlife Conservation Act. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.

6 CONFORMANCE WITH APPLICABLE ENVIRONMENTAL POLICIES

The following sections summarize the relevant federal, provincial, and municipal environmental policies that are applicable to the proposed development application.

6.1 Federal *Migratory Birds Convention Act,* S.C. 1994, c. 22

Section 6 of the Migratory Birds Regulations under the *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance or destruction of nests, eggs, or nest shelters of a migratory bird. The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) extends the protection of bird nests and eggs to species that are not listed under the Migratory Birds Regulations (e.g., Corvids).

Restricting clearing of vegetation for any current or future proposed development to times outside of the period of April 1 to August 31 inclusive, will prevent contravention of Section 6 of the regulations. As previously noted, if vegetation removal must 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 the MBCA or FWCA. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.

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

The Provincial Policy 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 2020. 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:

2.1.4 Development and site alteration shall not be permitted in:

a) significant wetlands in Ecoregions 5E, 6E, and 7E1; and
b) significant coastal wetlands.

2.1.5 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.*

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

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

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

Based on the results of RiverStone's impact assessment, and contingent on the implementation of the recommendations outlined in **Section 5** of this report, it is RiverStone's opinion that the development as proposed is consistent with Sections 2.1.4 to 2.1.8 of the PPS.

6.3 Provincial *Endangered Species Act*, S.O. 2007, c. 6

The ESA protects designated endangered and threatened species in Ontario from being killed, harmed, or harassed (s. 9) or having their habitat damaged or destroyed (s. 10). **Section 4.5** identified one or more species that have the potential to occur within or adjacent to the subject property. **Section 5.3** provided a subsequent discussion of potential impacts to such species and associated habitat features, should those species be present within or adjacent to the subject property. Based on this assessment, and assuming full implementation of mitigation measures (where recommended), it is RiverStone's opinion that no endangered or threatened species or their habitat are expected to be negatively impacted by implementation of the proposed development. On this basis, there is no expectation that the proposed development will result in a contravention of the ESA. It is noted that this assessment does not represent 'clearance' with respect to ESA compliance. It remains a proponent's continued and sole responsibility to ensure that a project does not result in a contravention to the ESA.

6.4 Town of Penetanguishene Official Plan (2018)

The Town OP designates the subject property as being contained within a Neighborhood Area, with an Environmental Protection Overlay (EPO) applicable to portions of the property. The Neighborhood Area designation is permissive of various forms of development; however, the EPO overlay triggers a further level of review and assessment (in the form of an EIS) in order to determine if development can be accomplished in a manner that is consistent with other natural heritage protection policies of the OP. These additional feature-specific policies contained in the Town's OP (Section 3.10) closely mirror natural heritage provisions of the PPS. The details contained in this report are intended to support the approval authority in their review of general conformity and consistency with Town policies; however, based on our assessment, it is RiverStone's opinion that the proposal can be implemented in a manner that is consistent with policies of both the PPS and the Town OP.

6.5 Town of Penetanguishene Zoning By-law (2019)

The Town of Penetanguishene Zoning By-law outlines the various provisions applicable for each zone with the Town boundaries. The zone assigned to the subject property is described as Deferred

Development. It is our understanding that this zone represents a form of a 'hold' mechanism until a more appropriate zone can be assigned. As such, re-zoning of the proposed new lot would be required to facilitate any future development. The information contained in this report may be used by the municipality to further determine any potential requirements for zoning by-law amendments.

7 CONCLUSIONS

In accordance with the requirements of the Town of Penetanguishene Official Plan, the preceding report provides the results of RiverStone's scoped EIS. This report includes details regarding existing physical and ecological conditions on the subject property, a description of the proposed development plan, an assessment of potential impacts to identified features, and a general assessment of consistency and conformity with relevant municipal, provincial, and federal environmental policies.

Based upon the findings presented in this report and contingent upon the implementation of and adherence to the recommendations made herein, it is our conclusion that proposed development can be accomplished without negative impacts to the functions of identified significant natural heritage features. We advise that the recommended mitigation measures outlined in **Section 5** be implemented through site plan control that is subsequently enforced with appropriate by-laws, as applicable.

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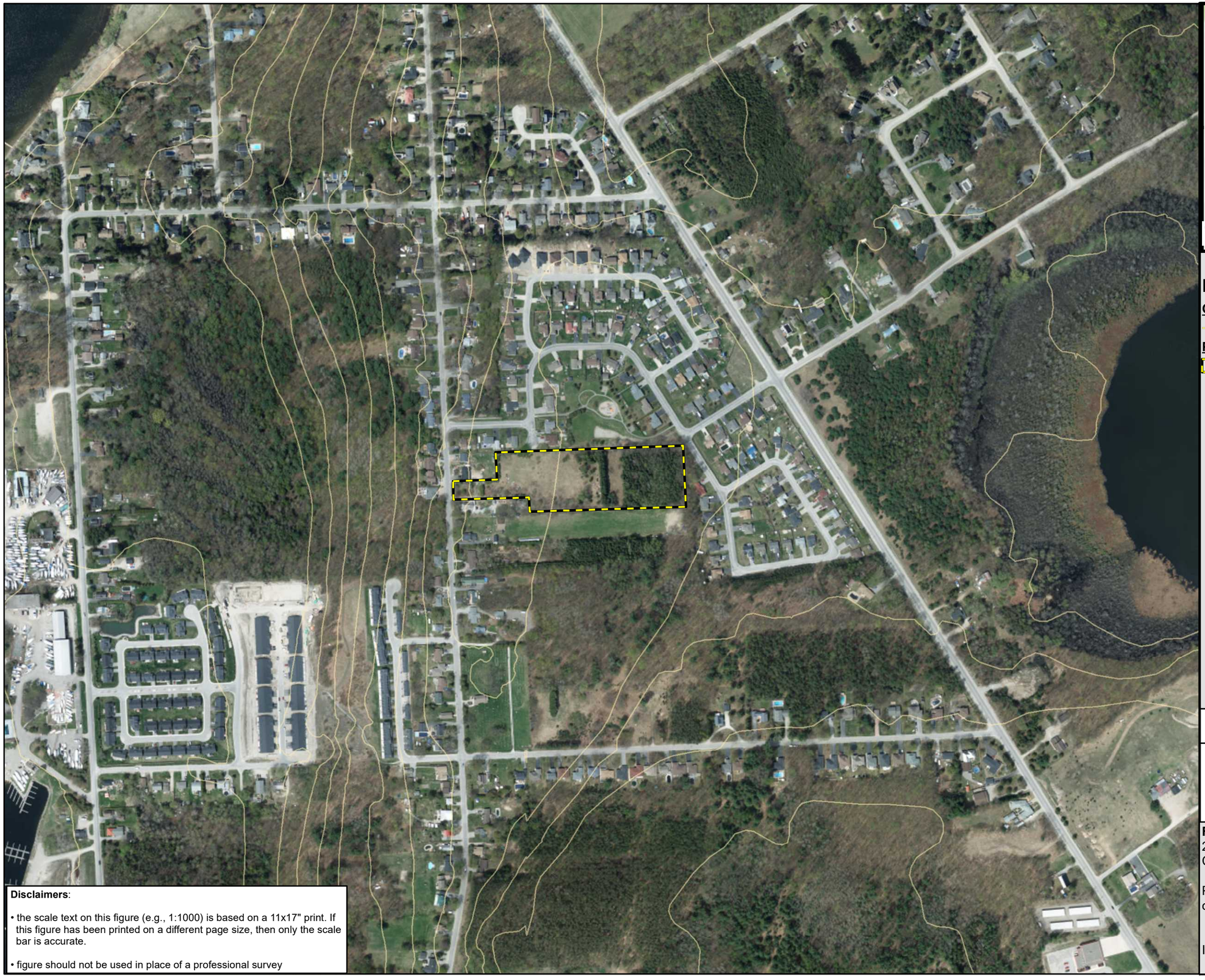

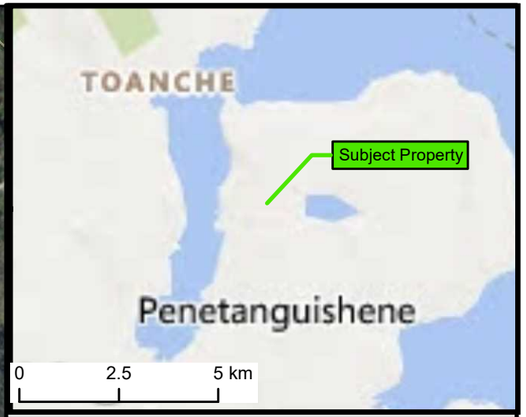

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Ontario Base Mapping (OBM)

5 m Contours

Planning Boundaries

Subject Property

N

Orthorectified aerial photo - spring 2018

Scale	RS Project No.	Date Last Updated	By
1:5,000	2021-142	Jul 26, 2021	JG

0 75 150 Metres

RIVERSTONE ENVIRONMENTAL SOLUTIONS INC

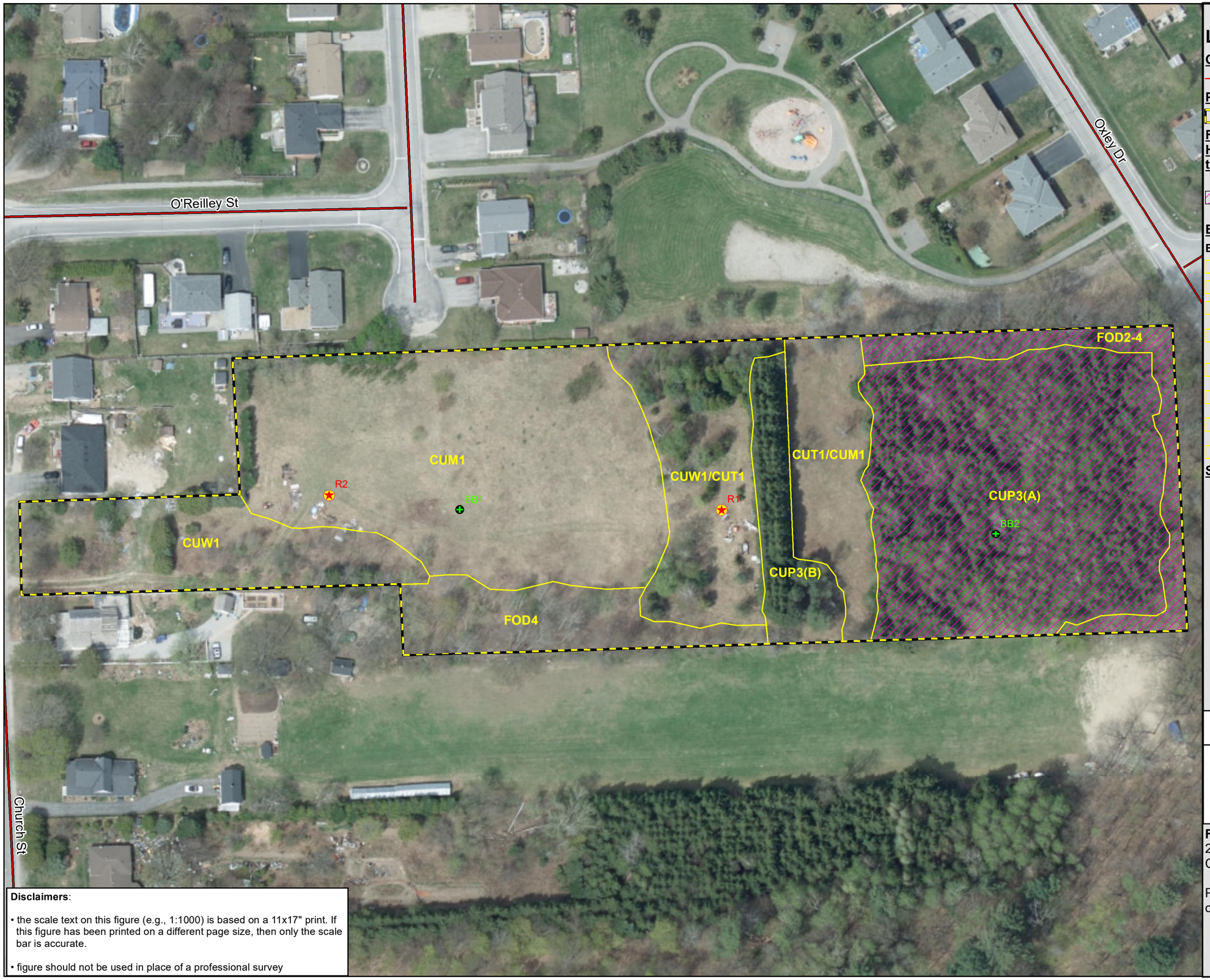
Figure 1. Location Of Subject Property
245 Church Street, Town of Penetanguishene, County of Simcoe

Prepared for: Koenig Developments
c/o Ashlyn Kennedy

Inset: General Location Of Subject Property

Disclaimers:

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



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Ontario Base Mapping (OBM)

- Roads

Planning Boundaries

- Subject Property

Features with Recognized High Natural Heritage Value - Identified by the Province or the Relevant Approval Authorities

- Significant Woodland (approximate - as derived from Schedule B1 - Town of Penetanguishene Official Plan)

Biophysical Features+Functions-RiverStone

Ecological Communities

- CUM1: Mineral Cultural Meadow
- CUP3(A): Coniferous Plantation
- CUP3(B): Coniferous Plantation
- CUW1/CUT1: Mineral Cultural Woodland/Mineral Cultural Thicket
- CUT1/CUM1: Mineral Cultural Thicket/Mineral Cultural Meadow
- CUW1: Mineral Cultural Woodland
- FOD2-4: Dry - Fresh Oak - Hardwood Deciduous Forest Type
- FOD4: Dry - Fresh Deciduous Forest Ecosite

Site Observations

- Breeding Bird Station
- Area Of Substantial Refuse

N

Orthorectified aerial photo - spring 2018

Scale	RS Project No.	Date Last Updated	By
1:1,000	2021-142	Jul 26, 2021	JG

0 10 20 Metres

Figure 2. Existing Conditions
245 Church Street, Town of Penetanguishene, County of Simcoe

Prepared for: Koenig Developments
c/o Ashlyn Kennedy

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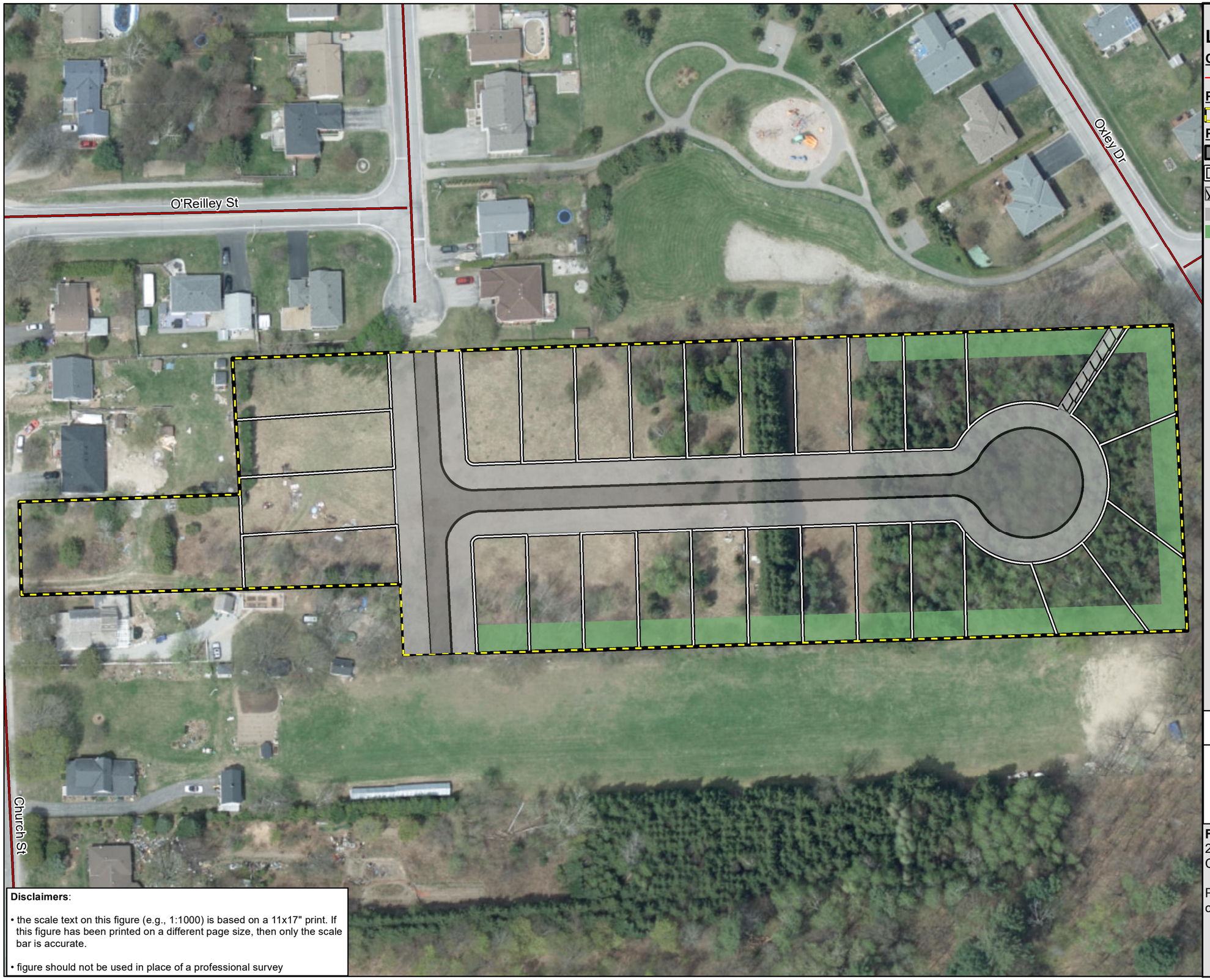

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Ontario Base Mapping (OBM)

- Roads

Planning Boundaries

- Subject Property

Proposed Development and Site Alteration

- Access Route
- Lot Line
- Pedestrian
- Right-Of-Way
- Tree Retention Zone

N

Orthorectified aerial photo - spring 2018

Scale	RS Project No.	Date Last Updated	By
1:1,000	2021-142	Jul 26, 2021	JG
0 10 20 Metres			

Figure 3. Development Plan
245 Church Street, Town of Penetanguishene,
County of Simcoe

Prepared for: Koenig Developments
c/o Ashlyn Kennedy

Disclaimers:

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Appendix 1. Select Photos from the Site Investigation

Photo 1. Entrance laneway; entering property facing east.

Photo 2. Cultural meadow community; facing north from entrance laneway.

Photo 3. Cultural meadow community; facing south toward narrow deciduous forest from interior of property.

Photo 4. Cultural meadow community; facing west toward hedgerow trees along property line.

Photo 5. Cultural meadow interior with early-successional growth of Black Locust.

Photo 6. Cultural woodland/cultural thicket community; facing east with spruce plantation in background.

Photo 7. Facing south from interior of narrow spruce plantation community (CUP3B).

Photo 8. Cultural woodland/cultural thicket complex; facing NW near northern property limit.

Photo 9. Narrow cultural thicket/cultural meadow complex between two areas of cultural plantation.

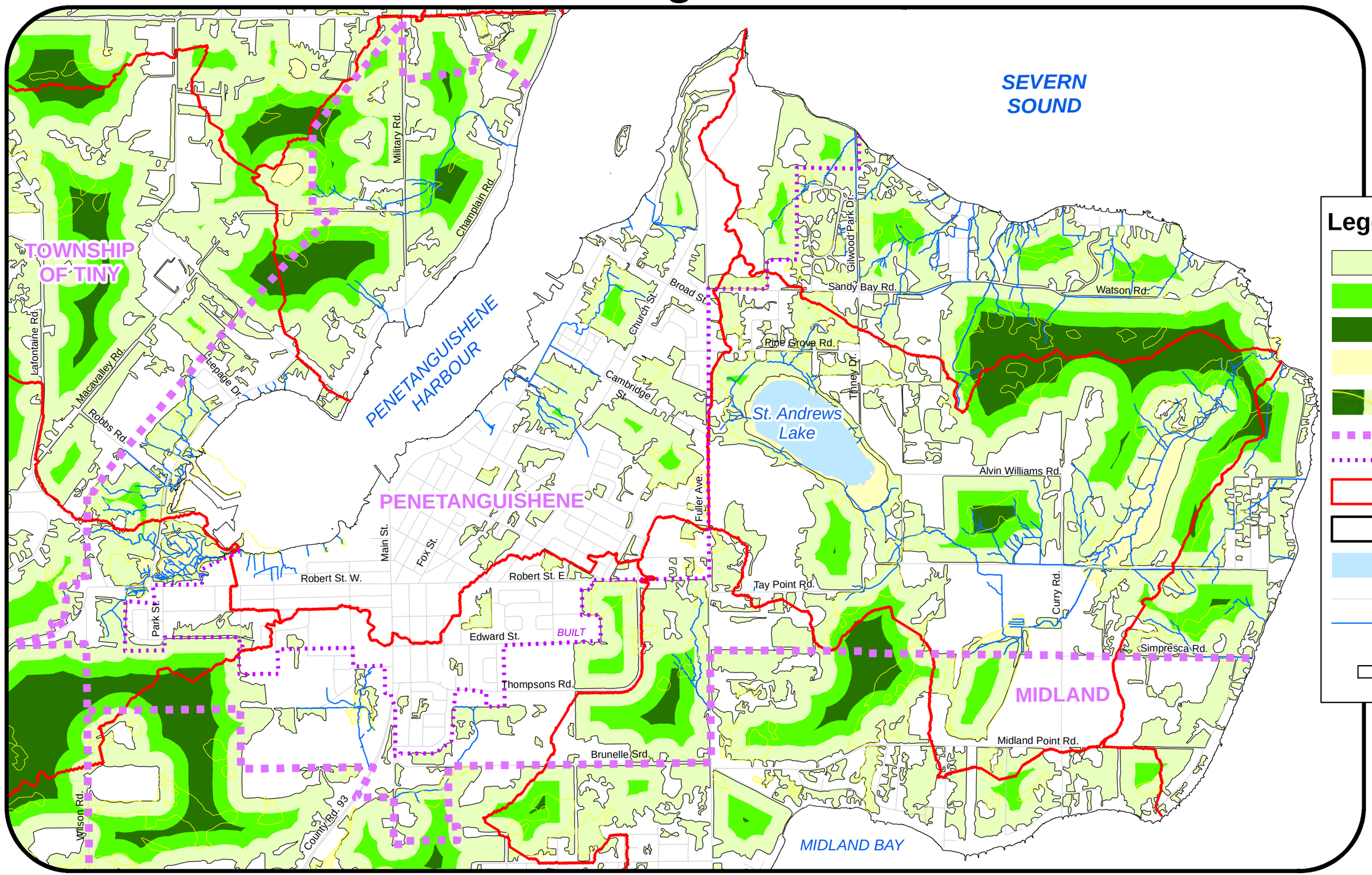
Photo 10. Eastern limit of cultural plantation; facing north along transition zone to narrow strip of mature deciduous forest/hedgerow.

Photo 11. One of several dumping sites noted throughout the property.

Photo 12. Interior of CUP3A community.

Appendix 2. Town of Penetanguishene Natural Heritage Study – Map 2

MAP 2A - Town of Penetanguishene - Woodland Habitat



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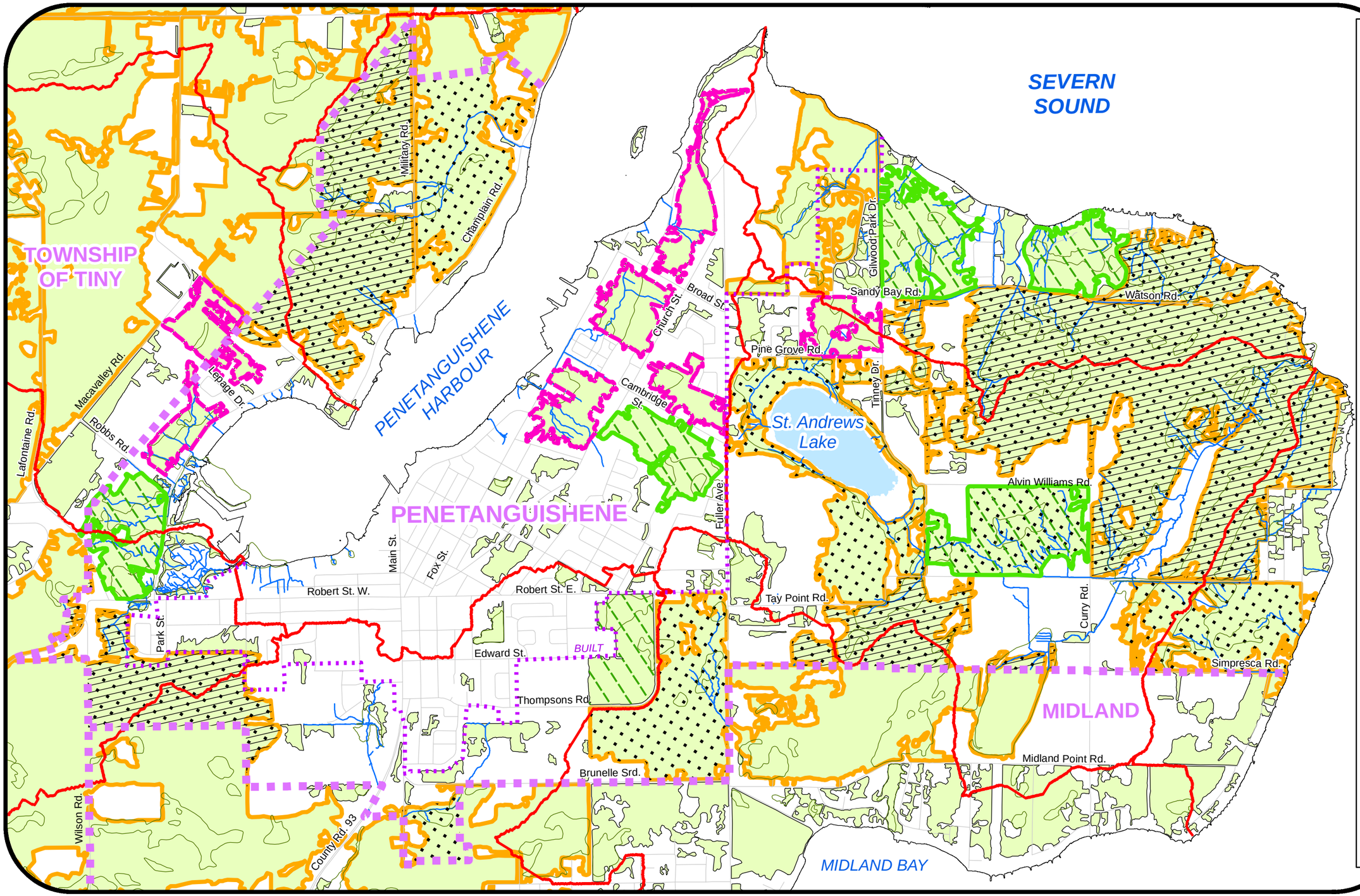
- Wooded Area
- 100 m Woodland Interior
- 200 m Woodland Interior
- Wetland
- Wetland Boundary Over Woodland (yellow line)
- Municipal Borders
- Built Boundaries
- Watershed
- Shoreline (Severn Sound)
- Inland Lake/ Open Water
- Road
- Watercourse

500 M

Produced for the Town of Penetanguishene by the Severn Sound Environmental Association with data supplied in part from the County of Simcoe, the Ontario Ministry of Natural Resources (© Queen's Printer 2017) and under License with members of the Ontario Geospatial Data Exchange, 2017. 2012 and 2016 Ortho-photo based data © County of Simcoe, 2017. Drainage feature data have been interpreted from various sources, under data sharing agreements. While every effort has been made to accurately depict the drainage feature data, errors may exist. Any party relying on this information does so at their own risk.

MAP 2B - Town of Penetanguishene - Significant Woodland Habitat



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Wooded Area

Significant Woodlands

- Wooded Area >50 ha in size
- Woodland with > 8 ha of 100 m Interior Forest
- Woodland >20 ha and <50 ha within 30 m of significant natural feature or fish habitat
- Woodland >20 ha and <50 ha linking 2 or more significant natural features
- Woodland >10 ha and <20 ha with groundwater protection functions

Candidate Significant Wildlife Habitat - Woodlands

- Woodland with > 10 ha of 200 m Interior Forest

- Wetland
- Municipal Borders
- Built Boundary
- Watershed
- Shoreline (Severn Sound)
- Inland Lake/ Open Water
- Road
- Watercourse

500 M

Appendix 3. Significant Wildlife Habitat Assessment

Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Seasonal Concentration Areas of Animals			
Waterfowl Stopover and Staging Areas (Terrestrial)	Fields with sheet water during Spring (mid March to May) Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterflow, these are not considered SWH unless they have spring sheet water available.	CUM1 , CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Waterfowl Stopover and Staging Areas (Aquatic)	Ponds, marshes, lakes, bays, coastal inlest, and watercourses used during migration. Sewage treatment Ponds and storm water Ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. These habitats have an abundance food supply (mostly aquatic invertebrates and vegetation in shallow water)	MAS1 , MAS2, MAS3, SAS1, SAM1, SAF1 , SWD1 , SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Shorebird Migratory Stopover Areas	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH.	BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1 , MAM2, MAM3, MAM4, MAM5	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Raptor Wintering Areas	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites (hawk/owl) need to be >20 ha with a combination of forest and upland. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting.	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Bat Hibernacula	Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Active mine sites are not SWH. The locations of bat hibernacula are relatively poorly known.	Bat Hibernacula may be found in these ecosites: CCR1, CCR2, CCA1, CCA2. (Note: buildings are not considered to be SWH).	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Bat Maternity Colonies	Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Maternity roosts are not found in caves and mines in Ontario Maternity colonies located in Mature (dominant trees > 80yrs old) deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees Female Bats prefer wildlife trees (snags) in early stages of decay, class 1-3 . Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD, FOM, SWD, SWM.	Conditions within on-site woodlands are generally not considered suitable to support significant maternity roosting functions. Woodlands on the subject property contain primarily immature trees, and densely-stocked coniferous plantation, with no concentrations of dead or cavity-bearing trees observed. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Turtle Wintering Areas	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO. Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as overwintering habitat.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Reptile Hibernaculum	For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice and Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1, FOC3.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	Any site or areas with exposed soil banks, sandy hills, borrow pits, steep slopes, and sand piles that are undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Colonially - Nesting Bird Breeding Habitat Breeding Habitat (Tree/Shrubs)	Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. Most nests in trees are 11 to 15 m from ground, near the top of the tree.	SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7, FET1.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Colonially - Nesting Bird Breeding Habitat (Ground)	Nesting colonies of gulls and terns are on islands or peninsulas (natural or artificial) associated with open water, marshy areas, lake or large river (two-lined on a 1;50,000 NTS map). Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6, MAS1 – 3, CUM, CUT, CUS	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Migratory Butterfly Stopover Areas	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario. The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes.	Combination of ELC Community Series; need to have present one Community Series from each landclass: <u>Field:</u> CUM, CUT, CUS <u>Forest:</u> FOC, FOD, FOM, CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Landbird Migratory Stopover Areas	Woodlots need to be > 10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline of those woodlands <2 km from Lake Ontario are more significant. Sites have a variety of habitats; forest, grassland and wetland complexes. The largest sites are more significant. Woodlots and forest fragments are important habitats to migrating birds, these features location along the shore and located within 5 km of Lake Ontario are Candidate SWH.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Deer Yarding Areas	Deer wintering areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. The Core of a deer yard (Stratum I) is located within Stratum II and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. OMNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual". -Woodlots with high densities of deer due to artificial feeding are not significant.	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2, CUP3, FOD3, CUT	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Deer Winter Congregation Areas	Woodlots will typically be >100 ha in size. Woodlots <100 ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100 ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant.	All Forested Ecosites with these ELC Community Series; FOC , FOM, FOD, SWC, SWM, SWD . Conifer plantations much smaller than 50 ha may also be used.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Rare Vegetation Communities			
Cliffs and Talus Slopes	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Sand Barren	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	ELC Ecosites: SBO1, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always < 60%.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Alvar	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars may be complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2 Five Alvar Indicator Species: 1) Carex crawei, 2) Panicum philadelphicum, 3) Eleocharis compressa, 4) Scutellaria parvula, 5) Trichostema brachiatum These indicator species are very specific to Alvars within Ecoregion 6E	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Old Growth Forest	Old Growth forests are characterized by exhibiting the greatest number of old-growth characteristics, such as mature forest with large trees that has been undisturbed. Heavy mortality or turnover of overstorey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Forest Community Series: FOD, FOC, FOM, SWD, SWC, SWM	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Savannah	A Savannah is a tallgrass prairie habitat that has tree cover between 25–60%.	TPS1, TPS2, TPW1, TPW2, CUS2	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Tallgrass Prairie	Tallgrass Prairie is an open vegetation with less than < 25% tree cover, and dominated by prairie species, including grasses.	TPO1, TPO2	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Other Rare Vegetation Community	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M. The OMNRF/NHIC will have up to date listing for rare vegetation communities.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Specialized Habitats for Wildlife			
Waterfowl Nesting Area	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. Wood Ducks, Bufflehead, Common Goldeneye and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites.	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 Note: includes adjacency to provincially Significant Wetlands	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer. In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Turtle Nesting Areas	Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Seeps and Springs	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.	Seeps/Springs are areas where groundwater comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Amphibian Breeding Habitat (Woodland)	Presence of a wetland or pond >500 m^2 (about 25 m diameter) within or adjacent (within 120m) to a woodland (no minimum size). The wetland, lake or pond and surrounding forest, would be the Candidate SWH. Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

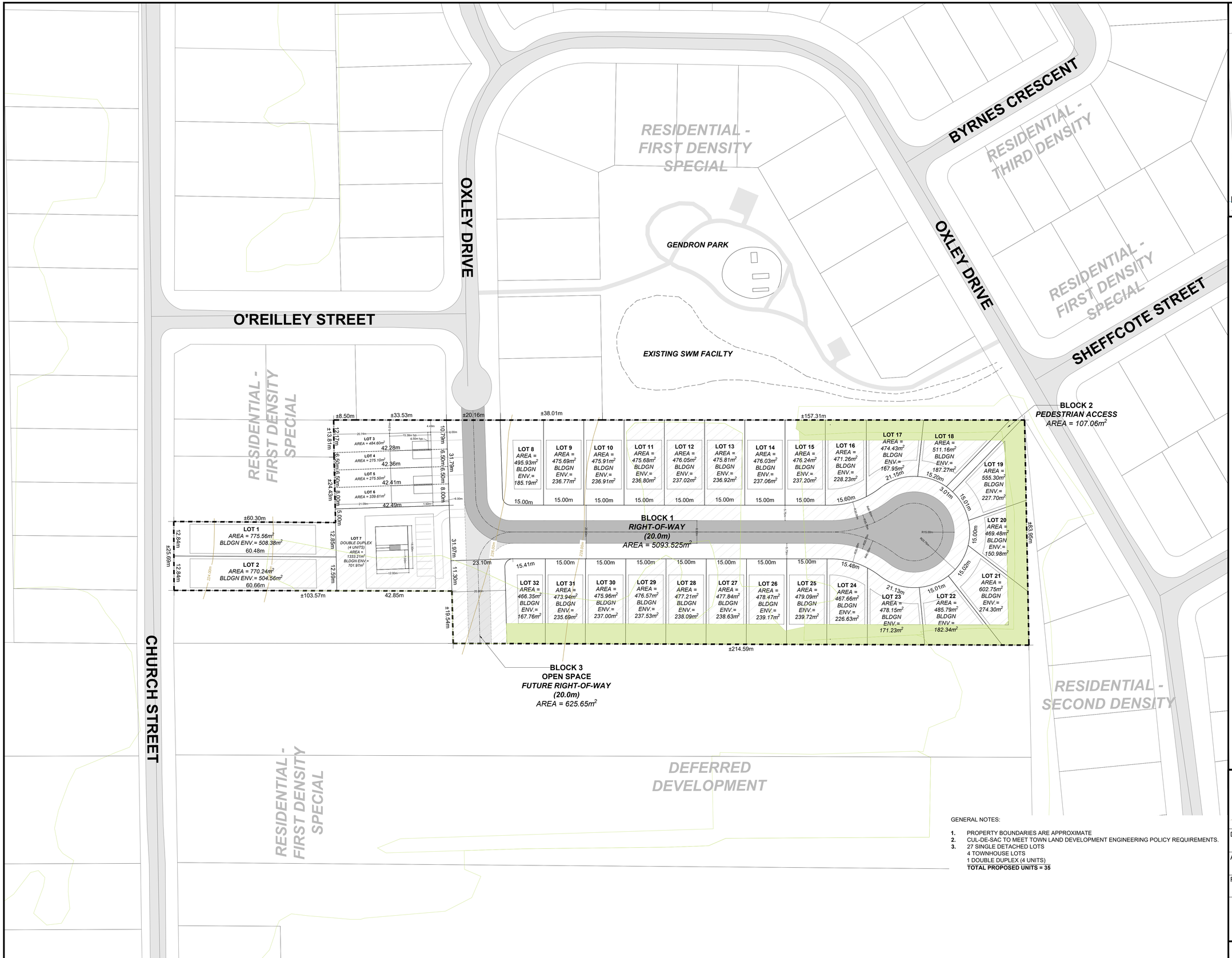
Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Amphibian Breeding Habitat (Wetlands)	Wetlands and pools (including vernal pools) >500 m^2 (about 25 m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation.	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Area-Sensitive Bird Breeding Habitat	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitat is at least 200 m from forest edge habitat.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)			
Marsh Bird Breeding Habitat	Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, FEO1, BOO1. For Green Heron: All SW, MA and CUM1 sites.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Open Country Bird Breeding Habitat	Large grassland areas (includes natural and cultural fields and meadows) >30 ha Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years). Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.	CUM1, CUM2	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Shrub/Early Successional Bird Breeding Habitat	Large field areas succeeding to shrub and thicket habitats >30 ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or livestock pasturing in the last 5 years). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or lightly grazed pasturelands.	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2. Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat	ELC Ecosites	Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from available information sources and on-site assessment indicate that candidate SHW might be present?
Terrestrial Crayfish	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM, CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Special Concern and Rare Wildlife Species	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or Provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	**The provincial NHIC database contains local records for special concern and/or rare wildlife species. See report for further discussion.**
Animal Movement Corridors			
Amphibian Movement Corridors	Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat –Wetland) of this Schedule.	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species (see above).	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.
Deer Movement Corridors	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH (see above). A deer wintering habitat identified by the OMNRF as SWH will have corridors that the deer use during fall migration and spring dispersion. Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).	Applicable criteria not met. Relevant features, biophysical parameters, and/or indicator species not identified through background review and/or site assessment. No further assessment undertaken.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Appendix 4. Development Concept Plan



- SUBJECT BOUNDARY
- EX. PARCEL
- EX. BUILDING
- EX. CONTOUR ELEVATION *(2.0m INTERVAL) (Retrieved from County GIS)*
- EX. WOODLAND TO REMAIN
- EX. WOODLAND TO BE REMOVED
- PR. LOT/BLOCK LINE
- PR. BUILDING ENVELOPE
- POTENTIAL BLDGN FOOTPRINT
- PR. RIGHT-OF-WAY CENTRELINE *(MIN. CL TURNING RADIUS = R12.0m)*

CONCEPT ZONING STATISTICS		
R3 - ZONE REGULATIONS - SINGLE DETACHED DWELLINGS	REQUIRED	PROPOSED
MIN. LOT FRONTAGE	15m	12.84m
MIN. LOT AREA	511 sq.m	MIN. 474.58 sq.m
MAX. LOT COVERAGE	35%	<35%
MIN. FRONT YARD SETBACK	6m	6.0m
MIN. SIDE YARD SETBACK	1m (w/ attached garage)	1.0m
MIN. EXT. SIDE YARD SETBACK	4.5m	4.5m
MIN. REAR YARD	7.5m	7.5m
MIN. GROUND FLOOR AREA	74 sq.m	>74 sq.m
MAX. HEIGHT	11m	<11.0m
MAX. ACC. BUILDING HEIGHT	4m	<4.0m
R3 - ZONE REGULATIONS - MAISONETTE AND ROW HOUSING DWELLINGS	REQUIRED	PROPOSED
MIN. LOT FRONTAGE	30m	31.79m
MIN. LOT AREA	230 sq.m/unit	333.30 sq.m/unit
MAX. LOT COVERAGE	35%	36.3%
MIN. FRONT YARD SETBACK	6m	6m
MIN. SIDE YARD SETBACK	2m plus 1m for each storey above the groundfloor on one side, and 6m on the other side.	1.5m on one side. 3.74m on the other
MIN. EXT. SIDE YARD SETBACK	4.5m	N/A
MIN. REAR YARD	7.5m	20.74m
MIN. GROSS FLOOR AREA PER DWELLING UNIT - *2 BEDROOM*	65 sq.m	>65 sq.m
MAX. HEIGHT	11m	<11.0m
MAX. ACC. BUILDING HEIGHT	4m	<4.0m
R3 - ZONE REGULATIONS - DOUBLE DUPLEX DWELLINGS	REQUIRED	PROPOSED
MIN. LOT FRONTAGE	21m	31.97m
MIN. LOT AREA	230 sq.m/unit	333.30 sq.m/unit
MAX. LOT COVERAGE	35%	14.33%
MIN. FRONT YARD SETBACK	6m	>6m
MIN. SIDE YARD SETBACK	1.0m on one side and 3.0m on the other	>1.0m on one side and >3.0m on the other
MIN. EXT. SIDE YARD SETBACK	4.5m	N/A
MIN. REAR YARD	11.0m	>11.0m
MIN. GROSS FLOOR AREA PER DWELLING UNIT - *2 BEDROOM*	65 sq.m	>65 sq.m
MAX. HEIGHT	11m	<11.0m
MAX. ACC. BUILDING HEIGHT	4m	<4.0m

GENERAL NOTES:

1. PROPERTY BOUNDARIES ARE APPROXIMATE
2. CUL-DE-SAC TO MEET TOWN LAND DEVELOPMENT ENGINEERING POLICY REQUIREMENTS.
3. 27 SINGLE DETACHED LOTS
   4 TOWNHOUSE LOTS
   1 DOUBLE DUPLEX (4 UNITS)
   TOTAL PROPOSED UNITS = 35

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DRAWN BY: MC	PROJECT No.: 21-2132
APPROVED BY:	HORIZ. SCALE: 1:600
REVISION DATE: AUGUST 12 2021	PLOT DATE: AUGUST 12 2021

CHURCH STREET SUBDIVISION

KOENIG DEVELOPMENTS LTD.

245 CHURCH STREET,
TOWN OF PENETANGUISHENE, ON

CONCEPT PLAN | **CP1**