Environmental Impact Study- Gilwood Farms Inc.

Final Report

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Acronyms and Abbreviations

ANSI	Area of Natural and Scientific Interest
BBS	Breeding Bird Survey
bgs	below ground surface
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
DBH	Diameter (of a tree) at breast height
EIS	Environmental Impact Study
ELC	Ecological Land Classification
ha	hectare(s)
masl	meters above sea level
MECP	Ministry of Environment Conservation and Parks
MNRF	Ministry of Natural Resources and Forestry
NHS	Natural Heritage System
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
OARA	Ontario Amphibian and Reptile Atlas
OP	Official Plan
SAR	Species at Risk
SARA	Species at Risk Act (Canada)
SOCC	Species of Conservation Concern
SWH	Significant Wildlife Habitat
VaSL	Vasey Sandy Loam

1.0 INTRODUCTION

1.1 Background

1.1.1 Property Description

This Environmental Impact Study (EIS) report is in reference to the ~4 hectare (ha) property located at 1230 Sandy Bay Road in the Town of Penetanguishene, County of Simcoe. The property is legally known as Part Lot 14, Concession 3, Penetanguishene. The property is currently owned by Gilwood Farms Inc. For the purposes of this report, this land is referred to hereafter as the "Gilwood Property", or simply the "Property". The property location is depicted in Figure 1.

At present, the Property is largely occupied by woody vegetation with a long-standing single-family residence and associated infrastructure located in a small clearing in the southwest corner of the Property. In the Simcoe County Official Plan (OP), the land-use designation for the Property is "Rural". Under the Town of Penetanguishene OP, the Property is also primarily designated as "rural" with the exception of a small stream corridor across the north half of the Property that is zoned "Environmental Protection".

1.1.2 Environmental Constraints

The current understanding of potential environmental constraints of relevance to the Property is based in part on review of mapping of formal feature delineations available from several sources, including:

- the Simcoe County and Penetanguishene OPs and supporting on-line mapping resources,
- Natural Heritage mapping available from the Ministry of Natural Resources and Forestry (MNRF) or Land Information Ontario (LIO), and

Copies of relevant constraint maps are provided in Appendix A.

There are a few key features identified within or near the Property which could generally trigger the need for an EIS in the event that development of some form and extent was proposed for the Property. These are;

- the presence of Significant Woodlands, mapped as Environmental Protection Overlay in Schedule B1 of the Town OP, throughout almost the entirety of the Property,
- the presence of a small "unevaluated wetland" in the north half of the Property, as mapped by the County and MNRF, and

- the presence of a small watercourse, also as mapped by the County and MNRF, in the north half of the Property.

Any development proposed that extends within these features or is within their respective adjacent lands would be subject to a requirement for an EIS. In regard to Significant Wildlife Habitat (SWH) or critical habitat for Species at Risk (SAR), comprehensive mapping of these features has not been compiled, but their presence is a possibility to consider at any site at the outset of an EIS. The presence of forest cover throughout the majority of the Property generally increases the potential for SAR or SWH presence.

There are no Provincially Significant Wetlands (PSWs) or Areas of Natural and Scientific Interest (ANSIs) within 120 m of the Gilwood Property. The St. Andrews PSW complex lies about 320 m southwest of Property at the closest point, and there is no discernable hydrological connectivity between this wetland complex and the Property. The PSW complex also encompasses St. Andrews Lake (also known as Penetang Lake) which is about 700 m southwest of the Property. This lake also represents the closest ANSI to the Gilwood Property. In absence of any ANSI or PSW any closer than 300 m from the Property, there is no requirement to assess any potential impacts on such features.

1.1.3 Severance Proposal

The current owner is planning to submit an application for consent for a severance that would create five (5) new residential lots on the west half of the Property, with about half of the Property on the east side to be the retained parcel. One of the proposed new lots is currently occupied by the existing residence and associated infrastructure. All of the five new lots would eventually be the site of new single-family residential development.

1.1.4 EIS Rationale and Objectives

With the proposed severance, some of the newly created lots would overlap with the identified natural heritage features, and/or their adjacent lands. The confines of the new lots are such that eventual development would be expected to trigger one or more policies pertaining to natural heritage protection. This EIS has been undertaken with the overall objective of determining whether the proposed severance and subsequent residential development within the newly created lots can generally occur without adverse impacts on the relevant natural heritage features. The findings and recommendations of this EIS are provided as a basis for modifications to development plans if such modifications are warranted to mitigate potential adverse effects on natural heritage features. In absence of a final detailed Site Plan, the findings of the EIS are primarily focused on general severance feasibility. Additional assessment may be required in support of any subsequent planning applications.

1.2 Scope of Work

The scope and content of this EIS are site-specific and have been developed to address possible concerns related to the natural heritage features that have been identified for the Property.

The scope and content of this EIS were developed with the intent of being consistent with the requirements specified in Section 3.10.8 of the Penetanguishene OP (2018). The EIS is in support of an application for consent for only five residential lots, and a plan of subdivision is thus deemed not to be necessary. In the case of an application for consent for five lots of severance, the level of detail necessary to demonstrate conformity with relevant policies is less than typically required for higher level approvals (e.g. approval of a plan of subdivision). Accordingly, this EIS has been conducted as a "Scoped" EIS.

An initial review at the outset of this EIS determined that the proposed new lots encompass natural heritage features that could function as constraints to eventual residential development. In considering those constraints, the proposed layout of the new lots was subject to adjustment so that there would be some level of *a priori* reduction of risk of adverse effects on the various natural heritage features of interest. These proposed new lots occupy just under 2 ha on the west side of the Property, and are characterized as follows:

- Lots 1 and 2 overlap the small watercourse that traverses the Property,
- Lot 2 encompasses the unevaluated wetland which measures about 0.17 ha,
- portions of Lots 3 and 5 are within 30 m of the unevaluated wetland and the small watercourse, and
- all lots encompass areas that are mapped as Significant Woodland.

This EIS has been undertaken with a focus on the potential impacts of future development on the features and functions within and immediately adjacent to the proposed new lots. The coverage and level of detail of on-site surveillance are intended to allow focused assessment of the area of the new lots, and also to be able to consider the general natural environment throughout the rest of the Property.

The characterization of the Property and relevant features is based primarily on direct on-site surveillance. To effectively address the identified EIS requirements, this field surveillance has included:

- Direct examination of slope/topography, conveyance features (ditches, swales, streams), and overburden characteristics within and adjacent to the Property, to understand hydrological processes and potential connectivity between the area of potential development and associated aquatic features.
- Inventory of terrestrial biota with a focus on identification of SAR or species of conservation concern (SOCC) that may be present. This includes a botanical

survey, a breeding bird survey (BBS), and incidental surveillance of other fauna (amphibians, reptiles, mammals).

- Direct assessment of forest communities within and near the proposed new lots, including community composition (e.g. species, age/size class, relative density), forest strata characteristic, soil characteristics, and wildlife presence and utilization.

The information acquired through the on-site monitoring has been combined with existing information from other sources to complete the required site characterization. Further details of monitoring methods are provided in Section 2.

2.0 METHODOLOGY

The work undertaken to allow the preparation of this EIS Report has included two main components;

1. a desktop review of previously recorded information regarding the characteristics of the Property and adjacent lands, and
2. focused on-site monitoring of the Property, with a focus on the confines of the proposed new lots.

The assessment herein collectively considers the findings of the desktop review and the on-site monitoring in a weight-of-evidence manner, with primary emphasis on site-specific data.

The following sections describe the methods employed in conducting the various components of environmental monitoring for the purposes of this EIS. In summary, the methodology adopted for the monitoring documented herein was developed to provide results appropriate to the stated objectives, and is based on standard accepted protocol where such protocol have been established.

A handheld GPS unit (Garmin model "GPSmap 76") was used to delineate key features, to measure areas of features, and to provide the geographic coordinates of any key natural heritage features of relevance. All coordinates have been obtained and reported using the Universal Transverse Mercator (UTM) coordinate system and NAD83 datum.

2.1 Review of Existing Information

A review of existing information of relevance to the Gilwood Property was completed prior to completion of on-site monitoring. Several sources of information have been consulted for this purpose, including:

- Simcoe County's web-based interactive GIS mapping tool,
- the Natural Heritage Information Centre (NHIC) on-line database,
- on-line natural feature mapping available from Land Information Ontario (LIO),
- the Ontario Breeding Bird Atlas (OBBA) (Cadman et al, 2007) and associated database (Bird Studies Canada (BSC) *et al*., 2021),
- the Ontario Reptile and Amphibian Atlas on-line database (Ontario Nature), and
- the Soil Survey of Simcoe County (Hoffman, Wicklund and Richards, 1962).

The information obtained in this review has served in part to determine certain characteristics of the Property, and also in part to identify possible features to receive focused attention during the on-site monitoring efforts.

Information from several of the sources noted above was also used to complete initial screening in regard to the possible presence of Species at Risk (SAR). The available information of relevance has ultimately been combined with results of direct surveillance of the Property to assess SAR presence (see Section 4.7).

2.2 On-Site Monitoring

The on-site surveillance reported herein was conducted during four separate visits to the Property during June and July of 2019 and June and September of 2021. The timing of site visits was intended to allow for adequate seasonal coverage of the various specific monitoring efforts.

2.2.1 Avian Monitoring

A focused breeding bird survey (BBS) was completed at the Gilwood Property following a wandering surveillance approach. The BBS gave focused attention to any indications of the possible presence of SOCC or SAR, particularly within the area of the proposed new lots.

Wandering surveillance was conducted throughout the Property, noting all individual bird occurrences and breeding evidence while traversing the Property throughout day and evening hours. The habitat and location of each bird observed during surveillance was noted, along with notes regarding activity (foraging, in flight, singing, etc.). Wandering surveillance was completed on all days on which the Property was visited, and gave coverage to all vegetation communities identified within the Property.

2.2.2 Surveillance of Other Fauna

During all site visits, all observations of amphibians, reptiles and mammals on or near the Property were recorded, along with any other evidence of faunal presence (e.g. foot prints, scat, skin sheds, and burrows).

2.2.3 Botanical Inventory

Surveillance of terrestrial vascular plant species was completed following a basic "wandering transect" approach to determine the presence and general distribution of plant species within the Gilwood Property. The vascular plant inventory was conducted to provide coverage of each of the proposed lots, and also each distinct ecological community delineated within the Property (see Section 4.2). Focused attention was given

to the possible presence of any plant SAR or SOCC that have been identified as possibly present within or near the Property (see Section 4.7).

2.2.4 Ecological Land Classification

The vegetation communities within the Gilwood Property have been assessed following the Ecological Land Classification (ELC) methodology described by Lee *et al*. (1998). This approach generates classification and mapping of ecological communities down to a size of approximately 0.5 hectares or less. ELC of the Property was completed through the following general task sequence:

- initial site reconnaissance to ascertain major community types, topography, and soil characteristics,
- subsequent delineation of community distribution using satellite imagery and aerial photos for a first approximation of ELC, and
- further detailed site monitoring to refine initial ELC approximation. Each distinct community was examined to determine soil characteristics and to determine the major woody and non-woody plant species present.

To facilitate characterizations of soil conditions (texture, moisture regimes) vertical soil profiles were completed in multiple locations within each distinct community type. Soil profiles were completed to a depth of 0.5 to 1 m below ground surface (bgs) using a hand-auger.

The detailed site monitoring included examination of physiographic attributes such as topography/slope, surface soil profiles, and the possible presence of elevated water table. Within each identified unit, the following information regarding vegetation cover was recorded:

- Relative species composition and percent cover of trees and shrubs, where present
- Caliper and height range of trees in wooded units, and
- General under-storey characteristics and non-woody species composition.

Through other specific monitoring efforts, the habitat function of each unit was also assessed and recorded.

2.2.5 Aquatic Features and Wetlands

The on-site surveillance of the Gilwood Property included direct examination of all identified aquatic features within the Property. The primary aquatic feature of interest is the small watercourse that flows across the north half of the Property and the associated riparian wetland (see Figure 2). Examination of the watercourse included the visual assessment of several standard habitat variables (substrate type, in-water and riparian

vegetation, flow characteristics), and visual surveillance for the presence of aquatic biota (macrophytes, invertebrates, fish, amphibians).

The wetland feature located within the Property was examined in regard to core attributes of hydrology and ecology. Wetland characteristics were determined following the principles described in the OWES manual (MNR, 2014). Hydrological characterization included the identification of any discernable sources of hydrological input, observations of relative flow volume, observations of indicators of water presence (e.g. high water marks on trees), and examination of drainage characteristics of the overburden within the wetland and surrounding lands. The main focus of these efforts was to determine the hydrological connectivity between the upland portions of the Property and the wetland and watercourse features. The examination of hydrological connectivity was particularly focused on the area of the newly proposed lots.

The ecological attributes of the wetland were ascertained in part through the biological monitoring efforts conducted throughout the Property. All monitoring efforts (plant, bird, mammal, amphibian and reptile surveys) encompassed the wetland area.

3.0 PHYSICAL CHARACTERISTICS

3.1 Topography

Elevation within the Gilwood Property ranges from about 229 meters above seas level (masl) near the intersection of Sandy Bay Road and Gilwood to a low of about 215 masl in northeast corner. The overall average grade of about 5% exhibits relatively uniform distribution over the diagonal axis of the Property. The moderate slope is evident in proposed lots 1 -3 along Gilwood Park Drive, with each lot sloping away from the high point at roadside. Lot 4 exhibits slightly more modest sloping toward the northeast corner of the Lot and otherwise occupies a relatively flat plateau that occupies the southwest corner of the Property. That plateau extends along Sandy Bay Road into the front half of proposed Lot 5, with the prevailing slope encountered in the rear half of the lot. Overall, all to the proposed lots slope away from their respective frontages to some degree.

In the back half of proposed Lots 1 and 2, there is a short but sharp decline in elevation associated with the watercourse and adjoining riparian wetland. The watercourse and wetland features occupy a small valley that is demarked by relatively abrupt outer ridges. Between its outer ridges the valley is relatively flat and measures up to about 30 m wide at the wetland core. The valley floor forms a small plateau that sits about 1-2 m below surrounding grade, with the active stream channel itself slightly recessed within the plateau. North of the wetland area, the watercourse remains within a confined valley that is slightly shallower (i.e.,~0.5 to 1 m below grade) and eventually narrows to width of only 5 m or less before exiting the Property.

3.2 Soils and Geology

Overburden in the area of the Gilwood Property consists of well-sorted outwash materials developed primarily on calcareous bedrock. The Simcoe County soil survey (Hoffman et al., 1962) indicates the presence of Vasey Sandy Loam (VaSL) throughout the Property. This is a calcareous and non-calcareous sandy loam till with good drainage. The Vasey soils are somewhat prone to erosion but soil loss can be prevented if relatively steep areas remain vegetated.

Direct examination of soils within the Property as part of this EIS has confirmed the general presence of the VaSL soil profile throughout the Property. In addition, examination of soil profiles within the wetland area identified the presence of a surface layer of organic soil to a depth of up to 30 cm below ground surface (bgs), underlain by saturated sandy loam. Very small pockets of shallow organic surface soil were also found to be present in association with seepage areas found on the east half of the Property (see Section 3.3 and Figure 2).

3.3 Hydrology

The overall hydraulic gradient in the area around the Property is generally toward the northeast, more or less following the small watercourse. The watercourse is a first-order feature that is about 800 m long, effectively originating at Gilwood Park Drive and eventually discharging to the outer waters of Penetang Harbour. About 160 m of the watercourse lies within Property, with about 120 m of that length encompassed within a riparian wetland feature that measures about 0.17 ha. The watercourse and associated wetland are the only surface features with direct hydrological connectivity to the Property. Over the period of monitoring, flow within the watercourse was observed to be intermittent within the Property and standing water was generally absent within the wetland.

The initial direction of drainage within Proposed Lots 1, 2 and 3 is generally toward the watercourse and wetland area. Proposed Lots 4 and 5 would appear to drain toward the lower part of the Property in the northeast, with perhaps some minor portion of these lots draining directly toward the section of watercourse that traverses the Property, via proposed Lot 3.

Within all lots, there is very limited evidence of concentrated surface runoff conveyance into the wetland and watercourse. In proposed Lot 2, a single short rill was observed on the west edge of the wetland valley. There was no flow in the rill at the time of surveillance. In the presence of well-drained sandy loam soils, stormwater is likely subject to relatively rapid infiltration, and the extent to which lot drainage would be in the form of surface flow is expected to be low. During surveillance of the Property, there were several indicators of shallow groundwater movement within the Property. In parts of the riparian wetland, water table elevation appeared to be slightly above the water level in the adjacent stream channel. The stream channel also had scattered patches of watercress, which is generally an indicator of groundwater inflows. In addition, groundwater seepage zones were observed in the lower portions of the retained parcel (see Figure 2). Overall, it appears that shallow groundwater discharge originating within the Property is a substantive hydrological input to the small wetland area and the upper reaches of the watercourse.

4.0 ECOLOGICAL CHARACTERISTICS

The following sections describe the ecological characteristics of the Gilwood Property. Results of on-site monitoring and review of existing information are summarized in Tables 1 to 5. Figure 2 depicts various relevant features discussed herein.

4.1 Vegetation Communities

The delineation of vegetation communities within the Gilwood Property is intended to identify communities at a scale that has meaning and relevance to the overall objectives of the EIS. To facilitate the delineation, the Property has been divided into several zones that are relatively distinct in terms of plant community composition, encompassing communities corresponding to one or two distinct types under the ELC system of Lee *et al.* (1998). Under the ELC system, a total of seven distinct community types have been identified within the noted zones. Each community type and its ecological functions are briefly described in the following sections, with a summary of main attributes provided in Table 1. Representative photos of each of the community types are provided in Appendix C.

4.1.1 Forest Communities

Zone A

Zone A measures about 0.7 ha and encompasses the portion of proposed Lots 1 and 2 that are west of the watercourse. In this zone, Red Oak is a dominant canopy constituent, with Sugar Maple, Trembling Aspen and White Ash exhibiting a secondary presence, often as subcanopy specimens. Under the ELC system, this community is consistent with Fresh-Moist Oak Sugar Maple Deciduous Forest (FOD9-1). In a previous EIS (Azimuth, 2003), the forest cover in the area surrounding the Property was identified as being largely consistent with the FOD9-1 community type. Within Zone A in the Gilwood Property, this forest community is somewhat mixed age and exhibits some degree of structural layering. There is a general absence of late maturity tree specimens, with canopy specimens are mostly 20 to 30 cm diameter at breast height (DBH). Some specimens in the range of 30 to 60 cm DBH are present, most notably in the most elevated portion of the proposed lots near Gilwood Park Drive.

With the slight decline in elevation moving east from the road toward the wetland and watercourse, there is decline in the dominance of Oak and an increase in the presence of Trembling Aspen and White Birch. Approaching the watercourse, the forest community is generally consistent with the Dry-Fresh Poplar Deciduous forest (FOD3-1) community type.

In terms of ecological function, the forest cover in Zone A appears to support a modest diversity of birds, including several species with forest habitat preferences, but no *interior* forest species (see Table 3). Regionally common mammals are also present, but there is no indication of significant habitat function for fauna of any type. No Priority Species have been observed in this Zone.

Zone C

Over a large portion (~3 ha) of the Property, including portions of proposed Lots 2, 3 , 4 and 5 and most of the retained parcel, Sugar Maple is a dominant canopy constituent. The Maples are variable in size and density, and occur with a varying mix of other deciduous tree species. In the more elevated portions of the Property, including most of the confines of the proposed Lots, the Sugar Maples occur with White Ash, scattered Red Oak, Basswood and Trembling Aspen. This forest cover is consistent with the Dry Fresh Sugar Maple Deciduous Forest Ecosite (FOD5) ELC community type. In lower elevations away from the road frontages, the Sugar Maples are still dominant but there is a greater presence of Aspen and Birch, and in some lower spots there are also Red Maple and some White Elm. In these lower areas, the community characteristics are generally consistent with the Fresh-Moist Sugar Maple - Hardwood Deciduous Forest (FOD6-5) ELC category.

Throughout Zone C, there is variability in tree size and the canopy characteristics. Overall, a majority of canopy specimens are < 30 cm DBH, but there are scattered clusters and individual specimens in the range of 30 to 60 cm DBH. This includes clusters of Red Oak in the elevated area close to Sandy Bay Road, where the community composition approaches that of the Oak Sugar Maple community (FOD9-1) encountered in Zone A.

Based on available information, the ecological function of the forest cover within Zone C is largely similar to that in Zone A. Zone C differs from Zone A in that it includes some forest that would be considered *"interior"* (i.e., forest that is more than 100 m from the outer forest edge). It also encompasses a few groundwater seepage locations which can support specific habitat functions.

Zone E -

There is a small (~0.2 ha) pocket abutting Sandy Bay Road, overlapping proposed Lot 5 and the retained parcel, where Black Walnut are a dominant canopy constituent. The walnut are scattered around an old stone building foundations. They are generally fairly large (30 to 50 cm) and even-aged, and some or all of the Walnut may have been planted. The mix of trees occurring with the Walnut includes Basswood, White and Red Ash, Black Locust and Sugar Maple. The ground cover is relatively dense and includes species typically found in relatively moist areas (e.g. Avens, Jewelweed). This forest patch is generally consistent with the Fresh Moist Black Walnut Lowland Deciduous Forest (FOD7-4) community type under the ELC system.

In terms of ecological function, this forest cover does not support any unique ecological function, partly as a result of its small size. The old stone foundation found within this patch might function as a hibernaculum site for any snakes that might be present within the Property.

4.1.2 Wetland Communities

Zone B corresponds with the unevaluated wetland feature, measuring about 0.17 ha. The wetland is effectively the riparian area of the small watercourse where it traverses proposed Lot 2. The wetland is delimited by a small ridge, demarking an abrupt transition between wetland and upland communities. The outer perimeter of the wetland area is within the drip-line of upland deciduous trees. Aspen tend to be fairly prevalent near the wetland edge. There is a limited presence of woody vegetation within the confines of the wetland itself, including specimens of Red and Black Ash, Aspen and Elm, along with some specimens of Elderberry, Red-osier Dogwood and other shrubs. The majority of the wetland area is relatively devoid of woody growth, and dominated by a dense cover of ferns (including Sensitive Fern) and Spotted Jewelweed. The wetland is characterized by a layer of organic soil to 25-30 cm, overlying sandy loam. The core of the wetland is generally consistent with a Mineral Meadow Marsh (MAM3) community under the ELC system.

Upstream and downstream of the wetland area, the watercourse is bordered by patches of similar assemblages of primarily hydrophilic plant species, but the spatial extent is very confined and delineation as a wetland feature is not warranted. Similarly, small patches of hydrophilic plants that occur in association with groundwater seepage areas are not delineated as wetland communities.

4.1.3 Cultural Communities

Zone D consists of about 0.12 ha surrounding the existing residence in proposed Lot 4. This area has been cleared in the past and is now occupied by young specimens of trees and shrubs that of often found at disturbed sites. This includes White Ash, Black Locust, Black Walnut and Trembling Aspen. These trees are relatively small (mostly <10 cm DBH) and even aged. There is an absence of a solid canopy, allowing for relatively dense layer of herbaceous ground cover. The ground cover is mix of species typical of disturbed sites, including several species that are considered to be invasive. On the outer perimeter of Zone D, the tree cover includes conifer specimens that were likely planted as well as mid-aged specimens of White Ash and Black Walnut along the road frontages. On the north side, Sugar Maples are establishing from the adjacent forest community in Zone C. Overall, the tree cover within this Zone is reflective of relatively recent anthropogenic disturbance, and the current level of tree cover is generally enough to warrant an ELC designation as Cultural Woodland (i.e., tree cover >35%). This area is in a state of regenerative transition, likely to eventually evolve to a Sugar Maple community similar to that encountered in Zone C.

4.2 Vascular Plants

The detailed plant species list for the Gilwood Property is provided in Table 2. This list reflects two-season monitoring over the period of June to September.

A total of 113 vascular plant species have been identified within the Property. Of those that are native to Ontario, all are ranked as "Secure" (S5) or "Apparently Secure" (S4) in the Province. Black Ash is the only plant species observed within the Property that has been subject to assessment by either COSEWIC or COSSARO as a possible Species at Risk (SAR). In November 2018, COSEWIC released their assessment of Black Ash and recommended a status of *Threatened* for this still relatively common tree species. Black Ash has not yet been added to Schedule 1 of the Federal Species at Risk Act (SARA). An assessment by COSSARO was recently completed, with a recommendation to assign a status of *Threatened,* consistent with COSEWIC. The Provincial Ranking of this relatively common species is "Apparently Secure" (S4). The presence of this tree as a *Priority Species* is discussed further in Section 4.7.

The terrestrial plants found within the Property consist of a mix of native and non-native species. A total of 33 (29%) of the plant species identified within the Property are non-native, and 17 of these are considered by various sources to be invasive in Ontario. Non-native and/or invasive species are encountered in all vegetation communities, but are notably more prevalent in proposed Lots 3, 4 and 5 in closer proximity to the existing residence. The invasive species in this area include substantial patches of several that are considered highly invasive and which generally warrant management efforts (e.g. Japanese Knotweed, Lily-of-the-valley, and Dog-strangling Vine).

About 19% of the vascular plant species encountered within the Property are species which grow primarily in wet conditions (i.e., coefficient of wetness is -3 or lower). These plants are generally limited in distribution, associated primarily with the identified watercourse and riparian wetland area within the Property. There are a few herbaceous hydrophilic species which are more widely distributed within the Property, mostly in the areas that are set back from the road in the area that will be the retained lot. Otherwise, the general lack of hydrophytes in the area of the proposed five new lots reflects the relatively well-drained nature of the Property.

Only six of the plant species recorded within the Property have a Coefficient of Conservatism of 7 or higher. These species were encountered mostly within the wetland area or pockets of relatively mature forest within the Property or within wetland areas. None of these species were abundant or widespread. The implications are that the Property is generally occupied by plant species that are not typical of long-standing communities. Even within the most mature forest cover, most species are not indicative of communities that are long-standing or reflective of later stages of succession.

There are only a few plant species that exhibit relatively high abundance and/or distribution within the Gilwood Property. This includes primarily a few deciduous tree

species (Sugar Maple, Trembling Aspen, Red Oak) and also various ferns (e.g. Sensitive Fern and Ostrich Fern) to a lesser extent.

4.3 Birds and Bird Habitat

A full list of all bird species that have been observed at or near the Property is provided in Table 3. The species listed in Table 3 include those observed during most recent monitoring in 2019 and 2021, as well as species reported from previous study of the adjoining property to the immediate north and east of the Gilwood Property.

In total, 43 species of bird have been observed within or near the Property. This includes 18 species observed immediately within the confines of the Gilwood Property, and 25 which have been observed during surveillance of adjacent lands during separate studies. Only three species were confirmed as breeding within the Gilwood Property boundary, and another seven species were indicated as "probable" breeders. All species with some evidence of breeding observed during study of adjacent lands have been assigned "possible" breeding status in this current context.

The Provincial ranking of 33 of the species observed at or near the Property is "secure" (S5), and the remaining 10 species are ranked as "apparently secure" (S4). In terms of breeding habitat preference, 22 of the species observed are considered forest species and 21 are habitat generalists or early succession species. Six of the species on record are recognized as area-sensitive and/or a forest interior species. Of these, only two (Ovenbird, Red-breasted Nuthatch) were indicated as present within the immediate confines of the Property. The occurrences of these species were confined to the area of the retained parcel.

The Gilwood Property lies within Ontario Breeding Bird Atlas (OBBA) square 17NK86. Data have been obtained for this square and considered as regional context for the Property. The local breeding status determined through the OBBA is included as context in Table 4. The OBBA surveillance of square 17NK86 has identified 123 species of bird with some evidence of breeding within the 100-km^2 area of this square. Of these species, 20 have been subject to assessment by COSEWIC and/or COSSARO. As of the date of this report, eight of the 20 have been deemed to be *Not at Risk*. The 12 species on record for the area in question that are currently identified as Endangered, *Threatened* or *Special Concern* are summarized in Table 5. The OBBA data indicate most of these species are either “possible’ or “probable” breeders in square 17NK86, with the Barn Swallow being the only "confirmed" breeder during the last atlas period (2001-2005). The Eastern Wood-pewee was the only species that was observed during the surveillance of the Property in 2019 and 2021, and this species is considered to be "probable" breeder within the Property. The observed occurrences of this species were confined to the outer margins of the Property. Further discussion of the Eastern Wood-pewee as a Priority Species is provided in Section 4.7.

4.4 Amphibians and Reptiles

A review of the Ontario Amphibian and Reptile Atlas (OARA) indicates the presence of number of species or amphibian and reptile within NHIC square 17NK86. Table 4 summarizes the five turtle species and five snake species that are indicated as present in this area (*i.e.*, within 10 km of the Gilwood Property). No reptile or amphibian species were observed within or near the Property during direct surveillance or during previous surveillance of immediately adjacent properties in 2003 or 2019. The area of five proposed lots is occupied by moist wooded habitat, but in absence of vernal pools or other areas of standing water the conditions in these woodlands are generally not supportive for most of the reptile and amphibian species reported for the area. The small wetland area within the Property does not exhibit standing water of depth or duration that would be conducive to the presence of breeding amphibians or turtles.

Overall, there is no expectation of the presence of amphibians or reptiles in significant number during critical life-cycle processes (e.g. reproduction).

4.5 Mammals

Monitoring of the Gilwood Property has revealed direct evidence of the presence of only four mammal species within the immediate confines of the Property. This includes White-tailed Deer (*Odocoileus virginianus*), Porcupine (*Procyon lotor*), Eastern Chipmunk (*Tamias striatus*), Red Squirrel (*Tamiasciurus hudsonicus*) and Grey Squirrel (*Sciurus carolinensis*). All of these mammal species are ranked as "secure" (S5) in the province of Ontario and are common in Simcoe County. It is considered likely that several other regionally common species of mammal (e.g. raccoon, skunk, coyote) are occasionally present within the Property. None of the mammals evidenced in the general vicinity of the Property are considered to be SOCC or SAR.

In regard to bats, there are several species which are regionally present and which include a number of SAR. The vegetation communities found within and around the CBSA are relatively young, and there is an absence of larger dead or dying trees that might contain hollows, cavities, large bark flakes and crevices that could function as roosting or hibernation sites. The density of large (>25 cm DBH) snag trees is estimated as less than 10 per hectare, which is considered a threshold for potential function as maternal roosting habitat for local bat species. Rock outcrops, caves or other sites that could serve as hibernation sites are not found on or near the Property. The presence of bats is discussed further as potential Priority Species (Section 4.7).

Overall, the likelihood of presence within the Property of mammal species that are of conversation concern is considered to be very low, and not likely to be meaningful to the viability of the local or regional populations.

4.6 Aquatic Ecology

The watercourse within the north half of the Property is largely characterized by a meandering channel that is also partly braided within a relatively broad riparian wetland. The meander belt is approximately 5 m wide on average. The stream channel itself is about 0.5 m wide on average, with substrates that are about 60% sand, 30% gravel and 10% small cobble. The depth of the active channel is generally in the range of 5 to 10 cm, and the flow is predominantly riffle flow. There is a minor presence of in-stream cover with the exception of small patches of aquatic macrophytes, primarily watercress. The surrounding forest habitat provides considerable high over-head cover. The watercourse exhibits an intermittent flow regime within Property, with very minimal residual pooling during periods of no flow.

Between the Property and the point of discharge to Penetang Harbour, there does not appear to be any barriers to fish movement. The average grade over the length of the watercourse is about 5%. No fish were observed in the watercourse at the times of surveillance. Overall, it appears that the watercourse could directly support the presence of fish during protracted periods of flow. At a minimum, the watercourse can be assumed to function as *indirect* fish habitat.

4.7 Priority Species

For the purpose of this EIS, the term "Priority Species" includes:

1. any species with a provincial (sub-national) conservation status rank (SRank) of S1, S2, S3 or SH, or otherwise considered rare in Ontario, and
2. any species that has been designated as either *Endangered*, *Threatened*, or *Special Concern* by either the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or the Committee on the Status of Species at Risk in Ontario (COSSARO).

The term "Species at Risk" (SAR) is applied to those included in regulatory listings as *Threatened* or *Endangered*, and thus subject to certain regulatory prohibitions. The term "Species of Conservation Concern" (SOCC) is generally applied to species other than those legally designated as *Threatened* and *Endangered.* Species of any of the noted designations are all tracked by the Natural Heritage Information Centre (NHIC).

The potential presence of SAR within or near the Property was initially examined in a manner consistent with guidance prepared by the Ministry of Environment, Conservation and Parks (MECP, 2019). Several sources of existing information were consulted to identify SAR that are on record for the area within a few km of the Property. This includes:

- the NHIC Element Occurrences (EO) for the area within 3 km of the Property, as summarized in Table 6,

- the most recent results of the Ontario Breeding Bird Atlas (OBBA) for the 10-km x 10-km Square 17NK86, which encompasses the Property, as summarized in Table 4, and
- the results of the Ontario Amphibian and Reptile Atlas (OARA) for Square 17NK86 as summarized in Table 5.

The likelihood of occurrence of identified Priority Species within or in very close proximity to the Property has been assessed in consideration of the specific habitat requirements of each species. Direct surveillance of the Property was also conducted with focused attention on the possible presence of the Priority Species known to be present in the general area of the Property.

The NHIC Element Occurrence (EO) records include any species that are considered herein as Priority Species. NHIC EO records were obtained for the 1-km grid segments within 2 - 3 km of the Property (12 grid squares in total). A summary of the EO listings for these squares is provided in Table 6. A total of eight species are listed. As discussed in Section 4.4, data from the OBBA for Square 17NK86 indicate the presence of a total of twelve Priority Species in the area of the Property. This includes four species also included in the NHIC records for the area. Data from the OARA (Table 5) indicate a total of 10 Priority Species of reptile or amphibian in the area of the Gilwood Property, including three species that are also on record in the NHIC EO. The only NHIC listed species not included in the OARA dataset is the Massassauga. The last observation of this species recorded by the NHIC is from 1969, and the likelihood of occurrence of this species in the area around the Property at this time is extremely remote.

In total, the existing information sources that have been consulted indicate the presence of 23 Priority Species in relatively close proximity to the Gilwood Property. Direct surveillance of the Property in 2021 has included a series of specific monitoring efforts that address the possible presence of these and any other Priority Species. Through site surveillance, the presence of only one of the 23 species on record was indicated within the Property; the Eastern Wood-pewee. The Eastern Wood-pewee may nest in many types of wooded habitats, but it is most commonly associated with the mid-canopy layer in forest stands of intermediate age and in mature stands with little under-story vegetation. The Wood Thrush will nest in woodlands as small as 3 ha, but it is reported to be area-sensitive and prefers forest stands with tall trees and thick under story. The forest cover within the area of the proposed lots is not ideal for the Wood Thrush but is somewhat suitable for the Eastern Wood-pewee. The Eastern Wood-pewee was observed in the vicinity of the proposed lots during surveillance, and it is generally possible that either species could nest in the area in the future. Otherwise, the habitat requirements of the other 21 listed species are generally not met to any significant extent within the Gilwood Property.

In addition to the species identified in existing databases, on-site monitoring identified the presence of one other Priority Species. Black Ash is a common species in Ontario that has recently been assessed by COSSARO and recommended for listing as

Threatened. A few young specimens of Black Ash were found in the wetland area that is located largely in the rear of proposed Lot 2. This is a hydrophilic tree species that is found in wetland or lowland areas. Suitable conditions for Black Ash are not found elsewhere within the proposed lots and specimens of this tree were not found during surveillance of the upland portions of the lots.

In regard to general concerns regarding species-at-risk bats, there are several bat species that can be found, at least on occasion, in Simcoe County. This includes four that are listed as Endangered: Tricolored Bat (*Perimyotis subflavus*), Little Brown Myotis bat (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and the Eastern Small-footed Myotis (*Myotis leibii*). The Northern Myotis is generally encountered in coniferous forest, while the three other species-at-risk bats are each common to deciduous or mixed forest habitat. All four species could theoretically be found within or immediately adjacent to the Property. The likelihood of presence of maternal colonies is dependent on the local abundance of large **(**≥25 cm DBH) snags/cavity trees. Within and adjacent to the proposed lots, there are few tree specimens that could be regarded as favorable snag trees. The density of snag trees does not meet the density requirement for high quality maternity roost habitat (i.e., >10 snags/hectare). The Property does not encompass or border any occurrences of Cliff-Cave ecosites and does not contain any features (caves, crevices) that could serve as hibernacula. Overall, there is some possibility of occasional and intermittent presence of species-at-risk bats within or near the Property, but there is no reason to expect the concentrated presence of bats for hibernation or maternal roosting purposes.

Other than the two noted Priority Species (Eastern Wood-pewee, Black Ash), all flora and fauna observed on or near the Gilwood Property are from relatively secure populations and do not warrant any consideration as conservation concerns. The other Priority Species on record within the general area have not been observed within the Property, and the preferred habitats of most of these species are generally not present to any meaningful extent within the Property. The Wood Thrush is the only other Priority Species on record for the area that might be present to some meaningful extent within the Property.

4.8 Significant Wildlife Habitat

The information available for the purpose of this EIS has been reviewed in specific consideration of the potential presence and implications of Significant Wildlife Habitat (SWH) within the Gilwood Property. The analysis of potential SWH presence and impacts is based on guidance provided by the MNRF (MNR 2000, MNRF 2015). There are several categories and specific types of designated SWH. These various SWH types each have generally recognized associations with specific ELC community types, indicator species, and other specified criteria (often related to patch size). The determination of SWH habitat is ultimately based on direct evidence of presence of the class of wildlife in question.

The Deciduous Forest (FOD) community types that occupy almost the entirety of the Gilwood Property (see Section 4.1.1) can generally support a number of SWH functions, as follows:

- *Seasonal Concentration Areas* (four categories of possible relevance to FOD),
- *Rare Vegetation Communities* (one category of possible relevance to FOD - i.e., *old growth forest*),
- *Habitat for SOCC* (one category of possible relevance)
- *Animal Movement Corridors* (one category of possible relevance), and
- *Specialized Habitat for Wildlife* (five categories of possible relevance to FOD).

The characteristics (age, tree species types, canopy configuration, etc.) of the forest cover within and around the proposed lots, and the wildlife species that have been recorded within or near the Property, have been reviewed in context of the specifications for each of these SWH functions. In consideration of this information and various defining criteria, the Gilwood Property has the potential to support three specific SWH functions, including;

1. area-sensitive bird breeding habitat,
2. habitat for Special Concern and rare wildlife species, and
3. seeps and springs.

Each of these candidate SWH functions is discussed below.

4.8.1 Area-Sensitive Bird Breeding Habitat

The blocks of forest that overlap the Property exhibit dimensions such that the majority of woodland within the confines of the Property, and the newly proposed lot, does NOT meet the criterion for forest interior habitat (i.e., >200 m from forest edges).

The forest cover within the proposed lots has exposed edges on several sides, and technically does not meet the interior forest SWH criterion. Forest cover within the area of the proposed lots is also generally not fully mature, which is a secondary defining characteristic of interior forest. During breeding bird surveillance of the Property, the presence of only <u>two</u> of the listed indicator species was evidenced immediately within the Gilwood Property. This consisted of limited evidence of <u>possible</u> breeding of the Ovenbird and the Red-breasted Nuthatch within or near the proposed lots. The criterion for this form of SWH is the <u>confirmed</u> nesting presence of <u>three</u> of the indicator species. Overall, this form of SWH is not considered to be present within the proposed new lots, but it may be supported in portions of the retained parcel.

4.8.2 Special Concern and Rare Wildlife Species

As discussed in Section 4.7, there is only one species Provincially designated as *Special Concern* and/or with a Provincial Rank of S3 that is confirmed as being present within the Property. The Eastern Wood-pewee was observed within or near the area of the proposed lots. This species was present in very low abundance and there was no evidence to confirm nesting activity within the Property, and specifically within the proposed lots. The Eastern Wood-pewee is not considered to be present within the area of the proposed lots to an extent that consideration of this specific category of SWH might be warranted. Regardless, mitigation measures are provided to mitigate any risk of impact to any individual of this or other bird species that might nest in the area (see Section 6.3).

4.8.3 Seeps and Springs

Two locations with groundwater seeps were observed within the area of the retained parcel (see Figure 2), and two of the relevant wildlife species (i.e., White-tailed Deer, Ruffed Grouse) have been observed within or near the Property. It is conservatively assumed that the retained parcel supports this SWH function to some extent.

5.0 ANALYSIS OF POTENTIAL IMPACTS

The current proposal for the Gilwood Property calls for the creation of five new lots for the eventual establishment of a single-family residences and associated infrastructure. Detailed plans for the residential development have not been prepared at this time, but it can be conservatively assumed that site alteration of a significant portion of each new lot would be required to facilitate such development.

In general consideration of eventual development within the new lots, and without accounting for any planning adjustments or other mitigating measures, an initial high-level assessment identifies several potential natural heritage implications, as follows;

- direct loss (up to 0.5 ha) or impairment of forest communities and their ecological functions, including area mapped as Significant Woodlands,
- possible impacts on the watercourse and wetland that lie partly within the area of the proposed new lots,
- possible direct harm or indirect disturbance of two Priority Species that have been observed within or near the proposed lots, and
- possible impairment of SWH function associated with the Property.

The following analysis further examines the potential impacts listed above. For each of the specific natural features of concern, the likelihood and significance of adverse effects due to potential development of the Property are qualitatively assessed. The assessed potential for adverse effects is based in part on the characteristics and functions of the features themselves. The assessment considers various aspects of potential future development following severance, including the extent of site alteration and various conditions that might be encountered within the Property both during and after construction. A conceptual site plan has been developed (see Appendix B), illustrating probable lot layouts and general areas of disturbance.

Conclusions and recommendations drawn from this analysis, including mitigation recommendations, are provided in Section 6.

5.1 Priority Species

In summary, there are a total of 23 Priority Species (*i.e.*, SOCC or SAR) on recent record in the general vicinity of the Gilwood Property. The Property generally does not exhibit the characteristics or specific habitat elements that would support local populations of most of the Priority Species that have been observed in the area. When considering habitat limitations and the findings of direct surveillance of the Property, only the Eastern Wood-pewee and Wood Thrush have some reasonable potential to be present in or near the proposed new lots where they might be subject to direct or indirect impacts of development.

The Eastern Wood-pewee was observed in very limited abundance and there is no evidence to confirm use of the area of the proposed lots for breeding purposes. It is still possible that nesting may occur in the area of the lots. It is also possible that Wood Thrush may nest in or around the proposed new lots. The Wood Thrush was not observed during surveillance of the Property, but its presence in the area around the Property is indicated in existing databases (OBBA, NHIC). For both species, the potential for direct impacts on adult birds or nests within the ~2 ha combined area of the new lots is inherently limited in terms of frequency and numbers affected. Any such impacts would not be meaningful from a population perspective, either regional or local. Overall, the risk associated with potential impacts to these Priority Species is considered to be low, and mitigation measures are available to further reduce the low level of risk (see Section 6.3).

Black Ash are also present within the Property. Their distribution is confined to the wetland area at the back of proposed Lot 2. The site plan confines development to portions of the proposed lots that are set-back a minimum of 15 m from the wetland. There is no expectation of impacts on the Black Ash that are found within the wetland.

Otherwise, there is no expectation of meaningful presence of any Priority Species within the Gilwood Property, and thus there is effectively no risk of adverse effects on such species.

5.2 Significant Wildlife Habitat

Surveillance of the Property for potential SWH (see Section 4.8), indicates that there are three possible SWH category that may be supported to some extent within the Property. These SWH functions are associated with the retained parcel, and there are no SWH functions associated with the area of the proposed lots. As a result, no direct impacts on SWH functions are expected.

In regard to the seeps that have been observed within the retained parcel, there is a theoretical potential for adverse effects of there is any substantial impairment of the groundwater sources of these seeps. Theoretically, significant land alteration over a large portion of the source recharge zone could ultimately affect the volume or duration of groundwater discharge at the seeps. There is no expectation that single-family residential development in limited portions of the proposed lots would substantially alter groundwater infiltration or movement patterns such that the seepage sources would be negatively affected. Despite the low risk, there are general recommendations that serve to further reduce the already minimal risk (see Section 6.3).

5.3 Wetlands

The small wetland feature within the Gilwood Property is located within the rear portion of proposed Lot 2. The conceptual layout for lot 2 (see Appendix B) has been developed with a 15 m setback from the wetland, preventing any direct impacts as a result of lot development.

The hydrological balance of the wetland is maintained in part by the surface flow of the small watercourse, and in part by groundwater discharge. There is no evidence that the portion of the proposed lots that could be altered for development purposes is the origin of significant hydrological inputs to the wetland feature. The risk of indirect impacts on the wetland as a result of impairment of hydrological balance is considered to be very low.

Overall, there is no expectation of any direct or indirect impacts of development within the proposed lots on the wetland feature or its functions. Measures are available to further mitigate the low risk (see Section 6.3).

5.4 Watercourse

The intermittent watercourse that traverses the Property is a first order watercourse exhibiting intermittent flow. The conceptual layout for the proposed lots (see Appendix A) maintains a 15 m setback from the watercourse within the Property. This set-back is sufficient to preventing any direct impacts as a result of lot development.

The watercourse is sourced in part from runoff feeding in from Gilwood Park Drive, and also from runoff originating within the Property. The general nature of single-family residential development is such that the volume and duration of discharges from a given lot are not expected to be subject to significant change. With appropriate drainage and stormwater management planning, the eventual development of the proposed lots can occur without adversely affecting flow patterns in the watercourse. The preservation of flow regimes confers protection of any ecological function associated with the watercourse, including fish habitat functions. Recommendations for protection of flow are provided in Section 6.3.

5.5 Significant Woodlands

The Provincial Policy Statement (PPS) defines significant woodland as "an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history". Regional assessments are undertaken by various agencies using criteria derived from this general definition to identify woodland areas for initial designation as "significant". The Natural Heritage Reference Manual (MNR, 2010) provides detailed recommendations for criteria and standards to be used in the assessment of woodland significance.

The current assessment of potential impacts on the woodlands found within the Gilwood Property is conducted in consideration of several of the core functional categories identified in the MNR's Natural Heritage Reference Manual. These categories overlap with the stated criteria for designation of "Significance" in the PPS and the County OP.

This includes woodland size, forest cover characteristics, the presence of SAR or SOCC, ecological functions and linkages, and water protection functions.

5.5.1 Woodland Size

For the purpose of this EIS, it is not possible to make firm determinations of the implications of any development-related woodland loss in regard to size. Only general statements of the magnitude of loss can be made.

The forest cover within the Gilwood Property is part of a larger, more-or-less continuous block of Significant Woodland that is bounded by Gilwood Park Drive and Sandy Bay Road. The larger block measures about 30, and it is effectively contiguous with a woodland block of almost 300 ha that extends eastward from the Property. The forest cover within the entire Gilwood Property represents less than 2% of this larger Significant Woodland area that envelopes the Property. The proposed lots themselves have an area of almost 2 ha, and the conceptual lot layout effectively preserves about half of the wooded area within the lots. The implications of the possible loss of up to 1 ha of forest cover can be considered in a relative context. This would represent about 3% of the total existing forest cover bounded by Gilwood Park Drive, and less than 0.5% of the larger continuous area of Significant Woodland that overlaps the Property. Reductions of this magnitude would not have substantial implications in regard to woodland size as a key determinant of Significance.

As a general guiding principle, this EIS adopts the premise that any reduction of total forest cover (Significant Woodlands or otherwise), should be avoided if feasible, regardless of any considerations of size-related criteria. Mitigation recommendations are provided in Section 6.3 which reflect this premise. Notwithstanding this general principle, the loss of 1 ha or less of woodlands within the Property will not adversely impact the Significant Woodland areas within and around the Property in terms of size.

5.5.2 Forest Stand Characteristics

The forested areas throughout the Gilwood Property are comprised of early to mid-successional forest cover, with a modest diversity of tree species in assemblages that are typical of the region. Through most of the wooded portions of the Property, the forest communities exhibit modest development of structural layering.

Overall, the available information does not indicate any uncommon or highly valued characteristics of the forest stands within or near the proposed lots. Any loss or impairment of any of the forest cover would not translate to loss or impairment of forests with such characteristics.

5.5.3 Ecological Characteristics

All of the species of plants and animals that have been observed within and around the Property's forest communities are relatively common to the region and the Province, and many are typical of forests influenced by some level of human disturbance. Almost al of these species are not considered to be particularly sensitive or of conservation concern. The available information does not indicate that the presence of Priority Species would be a major contributing factor to a designation as *Significant* of the forested areas within the Gilwood Property. Loss or impairment of forest cover within the lots would not have meaningful implications in regard to SOCC or SAR. The only possible exception relates to the limited presence of Easter Wood-pewee and Wood Thrush, both designated as an SOCC. As discussed in Section 5.1, eventual development of the Property is not expected to negatively impact the local populations of these species.

General ecological linkage functions are also a consideration in the assessment of Significant Woodlands. The woodland habitat within the Property does likely facilitate some level of ecological connectivity within the larger Significant Woodland block that overlaps the Property. However, there is no evidence indicating that the Property lies within established and/or significant wildlife corridors. The proposed lots represent a small fraction of total woodland area, and occupy the outer margins of the larger woodland block. The area within the lots expected to play only a limited role in whatever linkage function is attributable to the wooded area that overlaps the Property.

Overall, the Significant Woodland areas within the Property do provide some ecological function within the local landscape. As site alteration is to be limited to a relatively small area, and woodlands in this area do not appear to contribute significantly to local linkage functions, the risk of loss or impairment of such functions is considered to be low.

5.5.4 Water Protection

Forest cover generally leads to improved quality of runoff (e.g. reduced erosion and sediment loads, reduced thermal loading), which can have a beneficial effect on down-gradient features. The Gilwood Property envelops a small watercourse that flows through the wooded areas within the confines of the Property. There is no evidence to indicate that the area within the lots is a source of significant hydrological inputs to the watercourse. The total wooded area within the proposed lots is also relatively small (~2 ha) and its water protection function is also limited to occasional periods when it might actually contribute slightly to the flow in the intermittent watercourse. Overall, the water protection function that might be served by the forested areas within the Property is not considered to be significant.

5.5.5 Woodlands Summary

The deciduous forest communities within the Property are expected to serve and/or support various ecological functions, but analysis indicates that these functions would not be adversely affected by development within the proposed lots. In consideration of size alone, the maximum possible loss of ~1 ha (or less) would not constitute a meaningful reduction of the larger block of woodland that overlaps the Property. Overall, the proposed severance is not expected to adversely affect the overall integrity and function of Significant Woodlands within and surrounding the Property. Various mitigation measures are provided in Section 6.3 which would further reduce the already minimal risk of adverse effects on Significant Woodlands or their functions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of Existing Conditions

Almost the entirety of the Gilwood Property is occupied by deciduous forest. These forests are mid-aged with modest structural development, and support moderately diverse assemblages of fauna that are common and typical of the region. These wildlife species are from secure populations and almost all are not considered to be of conservation concern. Two Species of Conservation Concern (SOCC) were encountered within the Property, and there is no expectation of meaningful presence of other Priority Species within the Property. There are three possible SWH functions which are associated with the retained parcel. Otherwise, the forest communities within the Property do not support species or functions which would be considered as sensitive or as conservation priorities.

There is a small watercourse and wetland feature found within the Property. The watercourse is a first order watercourse with intermittent flow, and is assumed to function as indirect fish habitat. The wetland is small (<0.2 ha) and its ecological function is limited by both size and an absence of persistent standing water.

6.2 Summary of Potential Impacts

An understanding of the risk of potential impacts potentially associated with the proposed severance of the Gilwood Property is derived in part from the analysis presented in Section 5. The likelihood and significance of each category of potential impact are relatively ranked as either low, medium or high. The likelihood and significance of any possible impacts of proposed development are dependent on the natural heritage characteristics of the Property and also the specific aspects of the proposed development. For each environmental feature of interest, the overall risk is a function of both *likelihood* and *significance*.

Priority Species

Based on information obtained and reviewed in this EIS, there is a very low likelihood of occurrence of SAR or SOCC within the Property in meaningful number, for meaningful duration, or for critical aspects of their life cycle. The only potential presence of Priority Species that warrants some consideration is the presence of the Eastern Wood-pewee and Wood Thrush in forest communities within or adjacent to the proposed lots. The risk of loss or disturbance of these species is deemed to be low, and any potential impacts would not have significant implications in context of the local population of this species or in regard to the functional integrity of the local Natural Heritage System.

Significant Wildlife Habitat

There is only one instance of confirmed characteristics that could support SWH function, associated with the seepage areas within the retained parcel The proposed lots do not

overlap with this area, and there is no significant functional connectivity between the lots and the seepage features in question. The overall risk of the proposed severance in regard to this SWH element is deemed to be very low.

Wetlands

The small wetland feature located within the rear of proposed Lot 2 is sharply separated from adjacent upland area within the lot and does not appear to have any meaningful hydrological connectivity to uplands within Lot 2 or other lots. With the establishment of a set-back, there is no expectation of any direct or indirect impacts of development within the lots on the wetland feature or its functions.

Significant Woodlands

The Property encompasses about 4 ha of woodlands that are broadly considered to be Significant Woodlands, including almost the entirety of each the proposed new lots. Eventual residential development plans may require alteration of a limited area (1 ha or less) of these woodlands. This is not anticipated to have meaningful adverse effect on the overall integrity and function of Significant Woodlands within and surrounding the Property.

6.3 Mitigation and Enhancement Recommendations

Regardless of the overall low level of risk, there should be efforts to further mitigate the risk of any impacts potentially associated with proposed development of the Property. Recommendations are provided herein to avoid, limit or otherwise mitigate the potential impacts that have been identified.

6.3.1 Priority Species

Site monitoring has revealed the potential presence of two Priority Species within or in close proximity to areas of future development within the proposed lots. Eastern Wood-pewee and Wood Thrush may be present within or near forest communities that are within the lots. The removal of some areas of tree cover within the lot could directly affect individual nests of Eastern Wood-pewee or Wood Thrush.

For the eventual residential development within the lots, development of a Tree Preservation Plan is recommended to reduce the extent of potential tree removal, and thus lower the risk of adverse effects on the Eastern Wood-pewee and Wood Thrush, or other nesting woodland birds.

To reduce the risk of impacts on the Wood-pewee and Thrush, or any other breeding birds which would be subject to prohibitions of the Migratory Bird Convention Act, any

clearing of forested areas should be timed to avoid the active bird nesting period (i.e., from May to August, inclusive).

6.3.2 Woodlands

As noted in Section 5.4, the potential loss or impairment of woodlands within the Gilwood Property is not expected to result in meaningful loss of ecological function at the local or regional level. Regardless of functional implications, the loss or impairment of any woodland should be minimized simply owing to the fact that there is a general absence of woodlands in the region and the Province, and any further reductions exacerbate this situation. Accordingly, the Gilwood Property should eventually be developed with considerations to minimize loss of tree cover within the Property. In this effort, it is recommended that the eventual lot layouts allow for meaningful retention of existing tree cover within each lot. Assuming a total combined area of about 2 ha, it is recommended that a minimum total area of 0.5 ha of retained forest cover within the 5 new lots be considered as an objective. A Tree Preservation Plan (TPP) should be developed in advance of eventual development to specify tree retention objectives.

Aside from measures related to building envelope size and position, there are various standard measures that should be adopted at the time of construction to protect trees and forest cover that are to be retained. This includes installation of protective barriers and management of construction traffic to avoid inadvertent damage to trees or their root systems. A TPP should be developed to include an implementation plan for these and other relevant measures.

Any measures aimed a tree preservation will also serve to mitigate any of the identified risks to Priority Species, SWH, watercourses or wetlands. As such, a TPP should be a high priority in the planning for eventual development of the Gilwood Property.

6.3.3 Significant Wildlife Habitat

There are several mitigation measures that can be implemented to reduce the potential for adverse effects on the minor seeps that are found in the retained parcel. To reduce the risk of disruption or impairment of groundwater sources, the mitigation measures include the following;

- direct residential downspouts onto lawns or other permeable surfaces, and avoid direct connection to artificial stormwater conveyance infrastructure,
- maximize the incorporation of vegetated swales and ditches in SWM plans, and minimize paved curbs and drains, and
- maximize the use of permeable paver materials where appropriate and feasible.

In addition to these measures to prevent effects on seepage, avoid any aspect of development (e.g. fencing) that may restrict access by wildlife to the area where seeps are located.

6.3.4 Restoration and Enhancement

There are two recommendations to consider in regard to restoration or enhancement.

There are various invasive species present within the Gilwood Property, particularly in or near proposed Lot 4. The invasive species in this area include substantial patches of several species that are considered highly invasive and which generally warrant management efforts (e.g. Japanese Knotweed, Lily-of-the-valley, and Dog-strangling Vine). Efforts to control or remove these species would be beneficial.

In addition, the old stone building foundation partly within Lot 5 might provide hibernacula sites for any snakes that might be in the area. If this foundation is to be removed, the timing of that removal should avoid the period of late fall to early spring when hibernating snakes may be present. Also, any of the removed stone materials can be used to create new hibernacula structures in the retained parcel.

6.4 Policy Interpretation

The Provincial Policy Statement (PPS) serves as the foundation for the various policies contained in the County and Municipal OPs, including those that are intended to protect and maintain the natural environment and its functions. The following summaries address the PPS and OP natural heritage policy elements that are of relevance to the Property.

<u>Significant Woodlands</u>

No development or site alteration may occur within Significant Woodlands or their adjacent lands (within 120 m) unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions. In addition, fragmentation of significant woodlands is generally discouraged.

Eventual development within the proposed new lots will result in some loss or impairment of existing woodland that is part of the area mapped as Significant Woodland. The total area of affected woodland is assumed to be about 1 ha. This EIS concludes that development will not fragment or otherwise result in adverse impacts on Significant Woodlands as a functional component of the NHS that overlaps the Property and surrounding lands.

Habitat of Threatened/Endangered Species

The PPS states that no development or site alteration will be permitted within the habitat of Threatened or Endangered species except in accordance with provincial and federal requirements. No development or site alteration will be permitted within the adjacent lands (120 m) to these areas unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions.

There is no current evidence of meaningful presence of provincially Threatened or Endangered Species or their habitat within the Gilwood Property, and thus development will not have negative impacts on any such species.

Significant Wildlife Habitat

In the PPS, development and site alteration is not permitted within Significant Wildlife Habitat (SWH) and adjacent lands (120 m) unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions.

The EIS has identified the presence of potential SWH function associated with the retained parcel. There is no expectation that development within the proposed lots will have any direct or indirect impacts on the retained parcel or the habitat functions therein. No impacts on SWH function are expected.

Fish Habitat

The PPS states that development and site alteration are not permitted in Fish Habitat except in accordance with relevant provincial and federal requirements. No development will be permitted within 30 m of the banks of a stream, river, or lake unless an EIS, or the Conservation Authority, concludes setbacks may be reduced.

The small watercourse that traverses the property is an intermittent first order watercourse that is assumed to function as indirect fish habitat. Development will not occur within 15 m of the watercourse, and there is no evidence of significant hydrological connectivity between the area of future development and the watercourse. There is no expectation that the creation of the 5 new lots will have any effect on possible fish habitat function.

Natural Heritage System (NHS)

The PPS states that diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of the NHS, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

The Gilwood Property encompasses woodlands that facilitate a limited level of ecological connectivity in the area around the Property. The proposed severance of the Gilwood

Property is not expected to create development opportunities that would result in any meaningful loss or impairment of ecological or hydrological connectivity, or the overall integrity of the NHS.

Summary

Overall, the proposed severance of the Gilwood Property meets policy requirements and there is no expectation of any negative impacts on several specific features of interest or the NHS that they comprise.

7.0 REFERENCES

Azimuth Environmental Consulting Inc.. 2003. Environmental Impact Study - Gilwood Bay Development, Phase 4. Part Lots 14 and 15, Concession 3, Town of Penetanguishene, County of Simcoe. Prepared for R.J. Robinson and Associates Inc. Report # AEC 02-184.

Bird Studies Canada (BSC), Environment Canada's Canadian Wildlife Service, Ontario Nature, Ontario Field Ornithologists and Ontario Ministry of Natural Resources. 2021. Ontario Breeding Bird Atlas Database. Data accessed from NatureCounts, a node of the Avian Knowledge Network, Bird Studies Canada. Available at: http://www.naturecounts.ca.

Bird Studies Canada (BSC). 2003. The Marsh Monitoring Program Training Kit and Instructions for Surveying Marsh Birds, Amphibians, and Their Habitats. Revised 2003.

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

County of Simcoe Geographic Information Systems (GIS) website (https://opengis.simcoe.ca/public/). Last accessed 30 Oct 2021.

Hoffman, D.W, R.E. Wicklund and N.R. Richards. 1962. Soil Survey of Grey County. Report No. 29 of the Ontario Soil Survey.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Morris, Neil (Consulting Ecologist). Environmental Impact Study Addendum - Gilwood Property. Letter report to Mr. Martin Kiener, Hansa Financial and Corporate Management Inc. 08 July 2020.

Natural Heritage Information Centre (NHIC). 2021. Online Element Occurrence Database at http://nhic.mnr.gov.on.ca/nhic_.cfm. Last accessed 19 July 2021.

Ontario Ministry of Natural Resources (MNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp. March 2010.

Ontario Ministry of the Environment, Conservation and Parks (MECP). 2019. DRAFT Client's Guide to Preliminary Screening for Species at Risk. May 2019.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2014. Ontario Wetland Evaluation System (OWES) - Southern Manual. 3rd Edition, Version 3.3. Queen's Printer for Ontario. August 2014.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2015a. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Queen's Printer for Ontario. 38 pp. January 2015.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2015b. Significant Wildlife Habitat Mitigation Support Tool - Version 2014. Queen's Printer for Ontario. 533 pp. March 2015.

TABLES

Table 1: Summary of Woodland Community Characteristics

Community Type[1]	Woody Vegetation Characteristics			Tree Size (DBH) Distribution[4]			Summary of Functions[5]
	Woody Cover[2]	Composition[3]	Age and Structure	<15 cm	15 to 30 cm	>30 cm	
Dry-Fresh Poplar Deciduous Forest (FOD3-1)	90%	Aspen>Birch>Sugar Maple	Slightly mixed age, limited structural layering	50%	40%	10%	Modest diversity and abundance of relatively common species. Possible presence of Eastern Wood-pewee (SOCC)
Dry Fresh Sugar Maple Deciduous Forest (FOD5)	95%	Sugar Maple>>White Ash>Basswood	Mixed age, relatively young, moderate structural layering	30%	55%	15%	Modest diversity and abundance of relatively common species. Possible presence of Eastern Wood-pewee (SOCC). Confirmed presence of groundwater seepage areas (candidate SWH)
Fresh-Moist Sugar Maple Deciduous Forest (FOD6)	95%	Sugar Maple>Aspen>Red Maple	Mixed age, relatively young, moderate structural layering	40%	50%	10%	Modest diversity and abundance of relatively common species. Possible presence of Eastern Wood-pewee (SOCC). Confrimed presence of groundwater seepage areas (candidate SWH)
Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4)	95%	Black Walnut>Sugar Maple>Basswood	Mixed age, relatively young, moderate structural layering	40%	40%	20%	Modest habitat function. Possible presence of Eastern Wood-pewee (SOCC).
Fresh-Moist Oak Sugar Maple Deciduous Forest (FOD9-1)	95%	Red Oak>Sugar Maple>Aspen	Mixed age, relatively young, moderate structural layering	30%	50%	20%	Modest diversity and abundance of relatively common species. Possible presence of Eastern Wood-pewee (SOCC)
Cultural Woodland (CUW)	50%	White Ash>Walnut=Sugar Maple	Young, even-aged, no structure	70%	25%	5%	Minimal habitat function. High abundance of non-native species.

1 - Community type as determined through ELC following Lee et al., 1998.
2 - estimate of average absolute cover of upper layer, as per Lee et al. 1998
3 - estimate of relative abundance of woody species, as per Lee et al., 1998
4 - estimated percentage of trees in the noted range of diameter at breast height (DBH)
5 - SOCC = Species of Conservation Concern, SWH = Significant Wildlife Habitat

Table 2: Plant Species Observed at the Gilwood Property

Common Name	Scientific Name	Provincial Status (S-RANK)[1]	Native vs Non-Native Status	Coefficient of Conservatism[2]	Wetness Coefficient[2]
Alternate-leaved Dogwood	*Cornus alternafolia*	S5	Native	6	3
American Basswood	*Tilia americana*	S5	Native	4	3
American Beech	*Fagus grandifolia*	S4	Native	6	3
Balsam Poplar	*Populus balsamifera*	S5	Native	4	-3
Bitter Dock*	*Rumex obtusifolius*	NA	Non-native	NA	-3
Black Ash	*Fraxinus nigra*	S4	Native	7	-3
Black Locust*	*Robinia pseudoacacia*	NA	Non-native	NA	3
Black Medic	*Medicago lupulina*	NA	Non-native	NA	3
Black Raspberry	*Rubus occidentalis*	S5	Native	2	5
Black Walnut	*Juglans nigra*	S4	Native	5	3
Bladder Campion	*Silene cucubalus*	NA	Non-native	NA	5
Blue Cohosh	*Caulophyllum thalictroides*	S5	Native	5	5
Calico Aster	*Symphyotrichum lateriflorum*	S5	Native	3	0
Canada Anemone	*Aneomone canadensis*	S5	Native	3	-3
Canada Goldenrod	*Solidago canadensis*	S5	Native	1	3
Canada Mayflower	*Maianthemum canadense*	S5	Native	5	0
Catnip	*Nepeta cataria*	NA	Non-native	NA	3
Celandine*	*Chelidonium majus*	NA	Non-native	NA	5
Chicory	*Chicorium intybus*	NA	Non-native	NA	5
Choke Cherry	*Prunus virginiana*	S5	Native	2	3
Climbing Nightshade	*Solanum dulcamara*	NA	Non-native	NA	0
Coltsfoot	*Tussilago farfara*	NA	Non-native	NA	3
Common Buttercup	*Ranunculus acris*	NA	Non-native	NA	0
Common Cinquefoil	*Potentilla simplex*	S5	Native	3	3
Common Dandelion	*Taraxacum officinale*	NA	Non-native	NA	3
Common Elderberry	*Sambucus nigra*	S5	Native	5	-3
Common Milkweed	*Asclepias syriaca*	S5	Native	0	5
Common Mullein*	*Verbascum thapsis*	NA	Non-native	NA	5
Common Plantain	*Plantago major*	NA	Non-native	NA	3
Common Ragweed	*Ambrosia artemisiifolia*	S5	Native	0	3
Common Scouring Rush	*Equisetum hyemale*	S5	Native	2	-2
Common Strawberry	*Fragaria virginiana*	S5	Native	2	3
Common Yarrow	*Achillea millefolium*	NA	Non-native	NA	3
Dog Violet	*Viola conspersa*	S5	Native	3	0
Dog-strangling vine*	*Vincetoxicum nigrum*	NA	Non-native	NA	5
Domestic Apple	*Malus pumila*	NA	Non-native	NA	5
Eastern White Cedar	*Thuja occidentalis*	S5	Native	4	-3
Enchanter's Nightshade	*Circaea lutetiana ssp. canadensis*	S5	Native	2	3
European Buckthorn	*Rhamnus cathartica*	NA	Non-native	NA	0
European Vervain	*Verbena officinalis*	NA	Non-native	NA	3
False Solomon's-seal	*Maianthemum racemosum*	S5	Native	4	3
Field Horsetail	*Equisetum arvense*	S5	Native	0	0
Flat-topped White Aster	*Doellingeria umbellata*	S5	Native	6	-3
Garlic Mustard*	*Alliaria petiolata*	NA	Non-native	NA	0
Green Ash	*Fraxinus pennsylvanica*	S4	Native	3	-3
Herb-Robert	*Geranium robertianum*	S5	Native	2	3
Hog-Peanut	*Amphicarpaea bracteata*	S5	Native	4	0
Ironwood	*Ostrya virginiana*	S5	Native	4	3
Jack-in-the-pulpit	*Arisaema triphyllum*	S5	Native	5	-3
Japanese Knotweed	*Reynoutria japonica*	NA	Non-native	NA	3
Lamb's Quarter*	*Chenopodium album*	NA	Non-native	NA	3
Lance-leaved Goldenrod	*Euthamia graminifolia*	S5	Native	2	0
Large-leaved Aster	*Eurybia macrophylla*	S5	Native	5	5
Large-tooth Aspen	*Populus grandidentata*	S5	Native	5	5

Table 2: Plant Species Observed at the Gilwood Property

Common Name	Scientific Name	Provincial Status (S-RANK)[1]	Native vs Non-Native Status	Coefficient of Conservatism[2]	Wetness Coefficient[2]
Lily-of-the-valley*	*Convallaria majalis*	NA	Non-native	NA	5
Marginal Wood Fern	*Dryopteris marginalis*	S5	Native	5	3
Meadow Horsetail	*Equisetum pratense*	S5	Native	8	-3
Ostrich Fern	*Matteuccia struthiopteris*	S5	Native	5	0
Oxeye Daisy*	*Leucanthemum vulgare*	NA	Non-native	NA	5
Partridge Berry	*Mitchella repens*	S5	Native	6	3
Poison Ivy	*Toxicodendron radicans*	S5	Native	2	0
Prickly Gooseberry	*Ribes cynosbati*	S5	Native	4	3
Red Baneberry	*Actaea rubra*	S5	Native	NA	3
Red Clover*	*Trifolium pratense*	NA	Non-native	NA	3
Red Maple	*Acer rubrum*	S5	Native	4	0
Red Oak	*Quercus rubra*	S5	Native	6	3
Red Trillium	*Trillium erectum*	S5	Native	6	3
Red-osier Dogwood	*Cornus sericea*	S5	Native	2	-3
Rough-fruited Cinquefoil	*Potentilla recta*	NA	Non-native	0	5
Rough-stemmed Goldenrod	*Solidago rugosa*	S5	Native	4	0
Round-leaved Dogwood	*Cornus rugosa*	S5	Native	6	5
Sarsaparilla	*Aralia nudicaulis*	S5	Native	4	3
Self-heal	*Prunella vulgaris*	NA	Non-native	NA	0
Sensitive Fern	*Onoclea sensibilis*	S5	Native	4	-3
Serviceberry	*Amelanchier arborea*	S5	Native	5	3
Silver Maple	*Acer saccharuinum*	S5	Native	5	-3
Small White Aster	*Symphyotrichum lateriflorum*	S5	Native	NA	-3
Smooth Blackberry	*Rubus canadensis*	S5	Native	2	5
Solomon's-seal	*Polygonatum biflorum*	S4	Native	8	-3
Spinulose Wood Fern	*Dryopteris carthusiana*	S5	Native	5	-3
Spotted Jewelweed	*Impatiens capensis*	S5	Native	4	-3
Spreading Dogbane	*Apocynum androsaemifolium*	S5	Native	3	5
Squawroot	*Conopholis americana*	S4	Native	9	5
Staghorn Sumac	*Rhus typhina*	S5	Native	1	3
Starflower	*Lysimachia borealis*	S5	Native	6	0
Starry False Solomon's-seal	*Maianthemum stellatum*	S5	Native	6	1
Sugar Maple	*Acer saccharum*	S5	Native	4	3
Swamp Aster	*Symphyotrichum puniceum*	S5	Native	6	-5
Tall Rattlesnakeroot	*Nabalus altissimus*	S5	Native	5	3
Trembling Aspen	*Populus tremuloides*	S5	Native	2	0
Tufted Vetch*	*Vicia cracca*	NA	Non-native	NA	5
Viper's Bugloss	*Echium vulgare*	NA	Non-native	NA	5
Virginia Creeper	*Parthenocissus quinquefolia*	S4	Native	6	3
Watercress*	*Nasturtium officinale*	NA	Non-native	NA	-5
White Ash	*Fraxinus americana*	S4	Native	4	3
White Avens	*Geum canadense*	S5	Native	3	0
White Baneberry	*Actaea pachypoda*	S5	Native	6	5
White Birch	*Betula papyrifera*	S5	Native	2	3
White Elm	*Ulmus americana*	S5	Native	3	-3
White Spruce	*Picea glauca*	S5	Native	6	3
White Trillium	*Trillium grandiflorum*	S5	Native	5	3
White Vervain	*Verbena urticifolia*	S5	Native	4	0
Wild Carrot*	*Daucus carota*	NA	Non-native	NA	5
Wild Grape	*Vitis riparia*	S5	Native	0	0
Wild Parsnip*	*Pastinaca sativa*	NA	Non-native	NA	3
Wild Raspberry	*Rubus idaeus*	S5	Native	2	5
Wood Sorrel	*Oxalis montana*	S5	Native	7	3
Woodland Agrimony	*Agrimonia striata*	S4	Native	3	3

Table 2: Plant Species Observed at the Gilwood Property

Common Name	Scientific Name	Provincial Status (S-RANK)[1]	Native vs Non-Native Status	Coefficient of Conservatism[2]	Wetness Coefficient[2]
Woodland Horsetail	*Equisetum sylvaticum*	S5	Native	7	-3
Woodland Strawberry	*Fragaria vesca*	S5	Native	4	3
Yellow Avens	*Geum aleppicum*	S5	Native	2	0
Yellow Birch	*Betula alleghaniensis*	S5	Native	6	0
Yellow Wood-sorrel	*Oxalis europaea*	NA	Non-native	NA	3

* - species marked with an asterisk are considered by various sources to be invasive in Ontario

1. Provincial Rank: S4 - Apparently Secure, S5 - Secure, NA = not applicable (non-native species)

2. Coefficients as reported by Oldham et al., 1995

Table 3: Bird Species Observed at or near the Gilwood Property

Species		Breeding Status		Conservation Status			Breeding Habitat Preference[6]
Common name	Scientific name	Site[1]	OBBA[2]	SRANK[3]	COSEWIC[4]	COSSARO[5]	
American Crow	*Corvus brachyrhynchos*	Possible	Confirmed	S5	-	-	general
American Goldfinch	*Carduelis tristis*	Possible	Confirmed	S5	-	-	general
American Redstart	*Setophaga ruticilla*	Possible	Confirmed	S5	-	-	early succession
American Robin	*Turdus migratorius*	Confirmed	Confirmed	S5	-	-	general
American Woodcock	*Scolopax minor*	Possible	Possible	S4	-	-	early succession
Barred Owl	*Strix varia*	Possible	Probable	S5	-	-	forest
Black-capped Chickadee	*Poecile atricapillus*	Confirmed	Confirmed	S5	-	-	general
Black-throated Blue Warbler	*Setophaga caerulescens*	Possible	Probable	S5	-	-	forest
Black-throated Green Warbler	*Setophaga virens*	Possible	Probable	S5	-	-	forest
Blue Jay	*Cyanocitta cristata*	Probable	Probable	S5	-	-	forest
Broad-winged Hawk	*Buteo platypterus*	Possible	Confirmed	S5	-	-	forest
Brown-headed Cowbird	*Molothrus ater*	Possible	Confirmed	S4	-	-	general
Chestnut-sided Warbler	*Setophaga pensylvanica*	Possible	Probable	S5	-	-	early succession
Chipping Sparrow	*Spizella passerina*	Probable	Confirmed	S5	-	-	general
Common Grackle	*Quiscalus quiscula*	Possible	Confirmed	S5	-	-	general
Common Raven	*Corvus corax*	Possible	Probable	S5	-	-	forest
Common Yellowthroat	*Geothlypis trichas*	Possible	Probable	S5	-	-	early succession or wetland
Downy Woodpecker	*Picoides pubescens*	Possible	Probable	S5	-	-	forest
Eastern Phoebe	*Sayornis phoebe*	Possible	Confirmed	S5	-	-	general
Eastern Wood-pewee	*Contopus virens*	Possible	Confirmed	S4	SC	SC	forest
Golden-crowned Kinglet	*Regulus satrapa*	Possible	Possible	S5	-	-	forest
Great Crested Flycatcher	*Myiarchus crinitus*	Possible	Confirmed	S5	-	-	forest
Mourning Dove	*Zenaida macroura*	Possible	Probable	S5	-	-	general
Mourning Warbler	*Geothlypis philadelphia*	Possible	Confirmed	S4			forest
Northern Cardinal	*Cardinalis cardinalis*	Possible	Probable	S5	-	-	early succession
Northern Flicker	*Colaptes auratus*	Confirmed	Confirmed	S4	-	-	general
Northern Oriole	*Icterus galbula*	Possible	Confirmed	S5	-	-	general
Ovenbird	*Seiurus aurocapilla*	Probable	Probable	S4	-	-	forest
Pileated Woodpecker	*Dryocopus pileatus*	Possible	Probable	S5	-	-	forest
Red-bellied Woodpecker	*Melanerpes carolinus*	Possible	Probable	S4	-	-	forest
Red-breasted Nuthatch	*Sitta canadensis*	Probable	Probable	S5	-	-	forest
Red-eyed Vireo	*Vireo olivaceus*	Probable	Probable	S5	-	-	forest
Ruby-throated Hummingbird	*Archilochus colubris*	Possible	Confirmed	S5	-	-	early succession
Ruffed Grouse	*Bonasa umbellus*	Possible	Possible	S4	-	-	forest
Song Sparrow	*Melospiza melodia*	Probable	Confirmed	S5	-	-	general
Veery	*Catharus fuscescens*	Possible	Probable	S4	-	-	woodlands
Warbling Vireo	*Vireo gilvus*	Possible	Probable	S5	-	-	early succession
White-breasted Nuthatch	*Sitta carolinensis*	Possible	Probable	S5	-	-	forest
Winter Wren	*Troglodytes hiemalis*	Possible	Confirmed	S5	-	-	forest
Yellow Warbler	*Setophaga petechia*	Possible	Probable	S5	-	-	early succession
Yellow-bellied sapsucker	*Sphyrapicus varius*	Probable	Confirmed	S5	-	-	forest
Yellow-billed Cuckoo	*Coccyzus americanus*	Possible	Not reported	S4	-	-	early succession
Yellow-rumped Warbler	*Setophaga coronata*	Possible	Possible	S5	-	-	forest

1. includes adjacent lands within 100 m of property perimeter
2. the highest breeding status reported in the OBBA for Square 17NK86
3. Provincial Rank: S4 = Apparently Secure, S5 = Secure
4. Federal Status: SC = Special Concern
5. Provincial Status: SC = Special Concern
6. based on the Ontario Breeding Bird Atlas (OBBA)

Table 4: Priority Bird Species Reported for OBBA Square 17NK86

Species		SRank[1]	SARO Status[2]	SARA Status[3]	Primary Habitat Association[4]
Common Name	**Scientific Name**				
Barn Swallow	*Hirundo rustica*	S4	THR	THR	manmade structures
Bobolink	*Dolichonyx oryzivorus*	S4	THR	THR	grasslands, hayfields (usually > 5 ha)
Canada Warbler	*Wilsonia canadensis*	S4	THR	SC	moist coniferous-deciduous forest (typcially >10 ha) with well-developed understory
Cerulean Warbler	*Setophaga cerulea*	S3	THR	END	canopy of mature deciduous interior forest (>10 ha)
Chimney Swift	*Chaetura pelagica*	S4	THR	THR	manmade structures
Eastern Meadowlark	*Sturnella magna*	S4	THR	THR	grasslands, hayfields (usually > 5 ha)
Eastern Wood-pewee	*Contopus virens*	S4	SC	SC	deciduous and mixed forest with edges/openings
Golden-winged Warbler	*Vermivora chrysoptera*	S4	SC	THR	early successional habitat patches within forest
Grasshopper Sparrow	*Ammodramus savannarum*	S4	SC	SC	sparesly vegetated grasslands >30 ha
Least Bittern	*Ixobrychus exilis*	S4	THR	THR	expansive marsh habitat
Olive-sided Flycatcher	*Contopus cooperi*	S4	SC	THR	boreal forest, nesting mainly in coniferous trees
Wood Thrush	*Hylocichla mustelina*	S4	SC	THR	mature deciduous or conifer-deciduous forests

1 - Provincial Rank - S3 = Vulnerable, S4 = Apparently Secure
2 - Species at Risk in Ontario - SC = Special Concern, THR = Threatened
3 - Species at Risk Act (Canada) - SC = Special Concern, THR = Threatened, END = Endangered
4 - as reported in the Ontario Breeding Bird Atlas (OBBA)

Table 5: Reptile and Amphibian Species Reported for OARA Square 17NK86

Reported Species[1]			SARO	SARA	
Common Name	**Scientific Name**	**SRank[2]**	**Status[3]**	**Status[4]**	**Primary Habitat Association[5]**
American Bullfrog	*Lithobates catesbeianus*	S5	-	-	large permanent waterbodies
American Toad	*Anaxyrus americanus*	S5	-	-	variety of habitats, including heavily forested areas - breed in warm shallow waters
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	END	shallow lakes, ponds and wetlands with clean water and mucky bottoms
Blue-spotted Salamander	*Ambystoma laterale*	S4	-	-	variety of woodland habitats as well as swamps
Dekay's Brownsnake	*Storeria dekayi*	S5	NAR	NAR	diverse habitats, including forests, wetlands, forest clearings, edge habitats
Eastern Foxsnake (Georgian Bay population)	*Pantherophis gloydi*	S3	THR	END	shorelines, prairies, savannahs, rock barrens and wetlands (most commonly on shoreline edges)
Eastern Gartersnake	*Thamnophis sirtalis sirtalis*	S5	-	-	habitat generalist (forests, shrublands, wetlands, fields, rocky areas, urban areas).
Eastern Hog-nosed Snake	*Heterodon platirhinos*	S3	THR	THR	fields, forests, shrubland, beaches and old dune habitat - prefers sandy, well-drained soils
Eastern Milksnake	*Lampropeltis triangulum*	S4	NAR	SC	open habitats - rocky outcrops, fields and forest edge
Eastern Musk Turtle	*Sternotherus odoratus*	S3	SC	SC	rivers, lakes and ponds with a slow current and soft bottom
Eastern Red-backed Salamander	*Plethodon cinereus*	S5	-	-	mature woodlands with lots of fallen logs, coarse woody debris and leaf litter
Five-lined Skink (Southern Shield population)	*Plestiodon fasciatus*	S3	SC	SC	found close to water (wetlands and the shorelines of lakes and rivers), generally near forests
Four-toed Salamander	Hemidactylium scutatum	S4	NAR	NAR	sphagnum bogs, bog-based streams and flood plains in woodland areas - forage in nearby forests
Gray Treefrog	*Hyla versicolor*	S5	-	-	various plant communities near permanent water
Green Frog	*Lithobates clamitans*	S5	-	-	shallow permanent waterbodies
Massasauga (Great Lakes / St. Lawrence population)	Sistrurus catenatus	S3	THR	THR	habitat generalist (forests, meadows, shoreline habitats, wetlands, rock barrens, grasslands and old fields) generally associated with water
Midland Painted Turtle	*Chrysemys picta marginata*	S4	-	-[6]	ponds, marshes, lakes, or slow moving creeks with soft substrates and basking sites
Mink Frog	*Lithobates septentrionalis*	S5	-	-	large, cold, permanent ponds, lakes and slow-moving rivers with abundant vegetation
Northern Leopard Frog	*Lithobates pipiens*	S5	NAR	NAR	relatively permanent ponds without fish
Northern Map Turtle	*Graptemys geographica*	S3	SC	SC	large rivers and lakes with slow-moving water and a soft bottom
Northern Ring-necked Snake	*Diadophis punctatus*	S4	-	-	forested areas, most common in areas with shallow soil and surface bedrock
Northern Watersnake	*Nerodia sipedon sipedon*	S5	NAR	NAR	in or near permanent bodies fresh water (lakes, rivers and wetlands)
Red-bellied Snake	*Storeria occipitomaculata*	S5	-	-	forest edge and fields with abundant ground cover (logs, rocks, scrap piles and building foundations)
Red-spotted Newt	*Notophthalmus viridescens*	S5	-	-	ponds and lakes, and surrounding damp woodlands
Smooth Greensnake	*Opheodrys vernalis*	S4	-	-	various open habitatst (fields, wetland edges, forest clearings and open woodlands) most often in habitats with dense herbaceous vegetation
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	most freshwater habitats, most often with slow-moving water, soft substrates and abundant vegetation
Spotted Salamander	*Ambystoma maculatum*	S4	-	-	forest openings, specifically large rock outcrops
Spring Peeper	*Pseudacris crucifer*	S5	-	-	temporary woodland ponds, or swamps
Wood Frog	*Lithobates sylvaticus*	S5	-	-	vernal woodland pools

1 - Includes only those species with more than one reported occurrence since 2000
2 - Provincial Rank - S3 = Vulnerable, S4 = Apparently Secure, S5 = Secure
3 - Species at Risk in Ontario - NAR = Not at Risk, SC = Special Concern
4 - Species at Risk Act (Canada) - NAR = Not at Risk, SC = Special Concern
5 - as reported in the Ontario Amphibian and Reptile Atlas
6 - recently recommended as Special Concern by COSEWIC, but not yet listed under SARA

Table 6: NHIC Element Occurrences (EO) near the Gilwood Property

Common Name	Scientific Name	SRank[1]	SARO Status[2]	SARA Status[3]	Primary Habitat
Massasauga (Great Lakes / St. Lawrence population)	*Sistrurus catenatus (pop. 1)*	S3	THR	THR	habitat generalist, typically in areas associated with water
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	various freshwater habitats, most often with slow-moving water, soft substrates and abundant vegetation
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	END	shallow lakes, ponds and wetlands with clean water and mucky bottoms
Northern Map Turtle	*Graptemys geographica*	S3	SC	SC	large rivers and lakes with slow-moving water and a soft bottom
Bobolink	Dolichonyx oryzivorus	S4	THR	THR	grasslands, hayfields (usually > 5 ha)
Eastern Wood-pewee	Contopus virens	S4	SC	SC	deciduous and mixed forest with edges/openings
Eastern Meadowlark	*Sturnella magna*	S4	THR	THR	grasslands, hayfields (usually > 5 ha)
Wood Thrush	*Hylocichla mustelina*	S4	SC	THR	mature deciduous or conifer-deciduous forests

1 - Provincial Rank - S3 = Vulnerable, S4 = Apparently Secure
2 - Species at Risk in Ontario - SC = Special Concern, END = Endangered, THR = Threatened
3 - Species at Risk Act (Canada) - SC = Special Concern, END - Endangered, THR = Threatened
EO records obtained for NHIC 1-km squares within ~ 2-km of the Property (12 squares total)

FIGURES

Figure 1 - Property Location

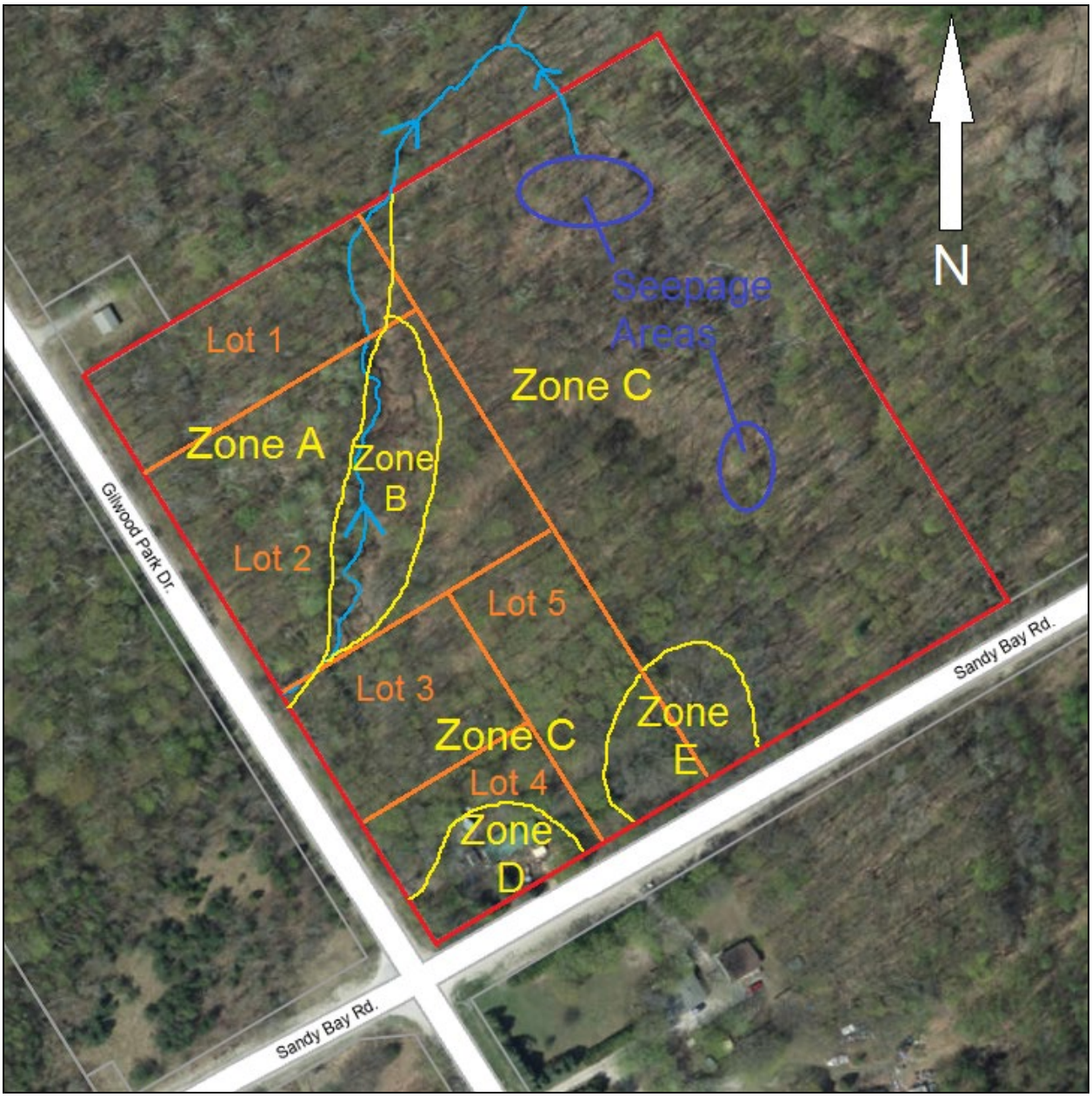
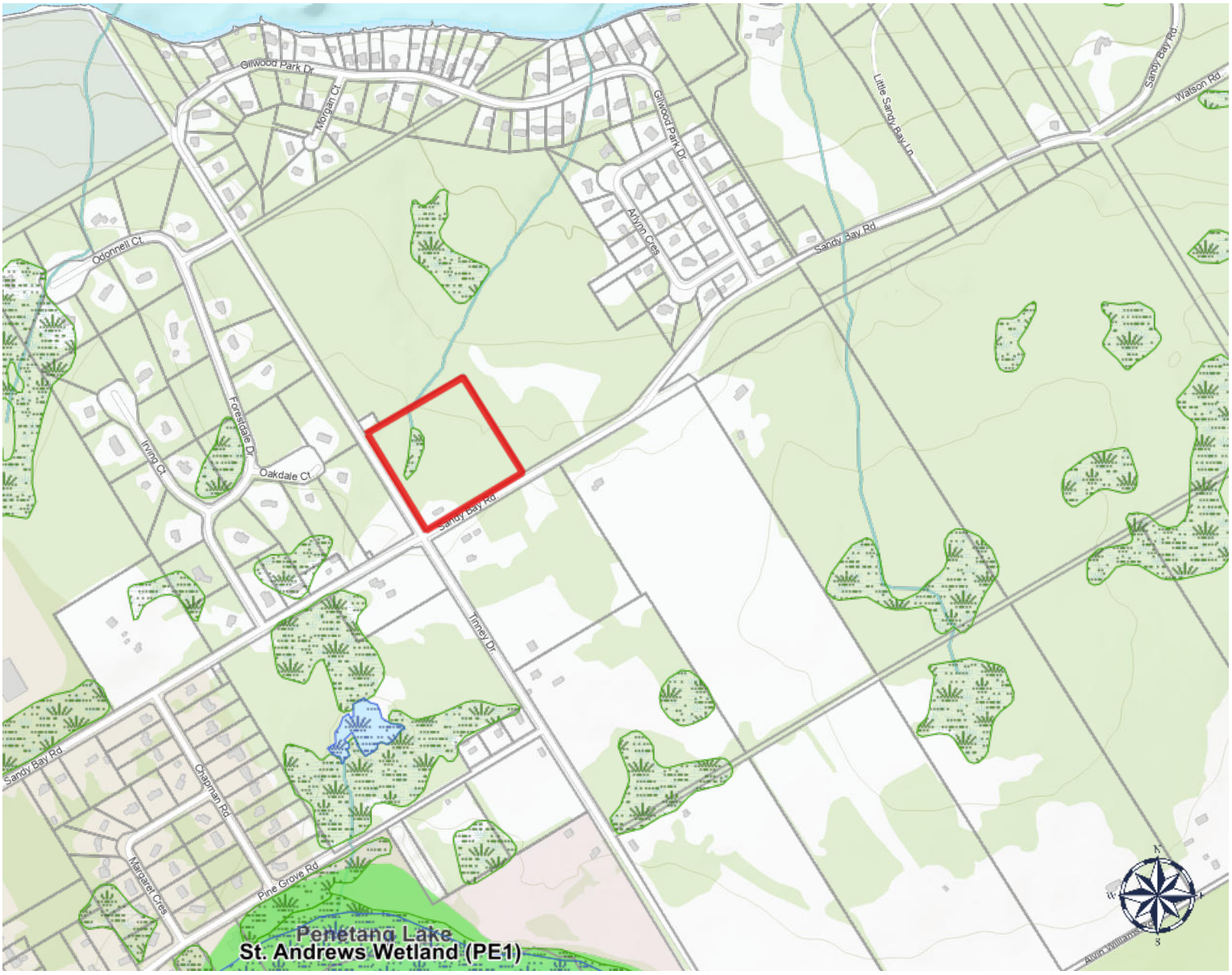


Figure 2 - Relevant Features

APPENDICES

Appendix A – Existing Constraint Mapping

County of Simcoe - Mapped Features



- Municipal Border
- Contour - 2 Meter
- Trail
- RailLine
- Highway
- Major Road
- Ramp
- Local Roads
- Unassumed and Seasonal Roads
- Water Line, Intermittent
- Water Line, Permanent
- Building Footprint
- Provincial Park
- Water Area, Permanent
- Wetland Area, Permanent
- Wooded Area
- Cartographic Urban Area
- Cemetery - Polygon
- First Nations Land
- Municipal Park

Landuse

- Amusement Park
- Commercial
- Educational
- Golf Course
- Government
- Industrial
- Medical

0 200 400 600m

1 : 15,118

Nov 3, 2021

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

MNRF mapped woodlands and wetlands

Map created:11/2/2021

Notes:

Enter map notes

Legend

- Assessment Parcel
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System

0.2 0 0.08 0.2 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

MNRF Mapped Wetlands and Woodlands

Map created:11/6/2021

Notes:

Enter map notes

Legend

- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System

1.3 0 0.65 1.3 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

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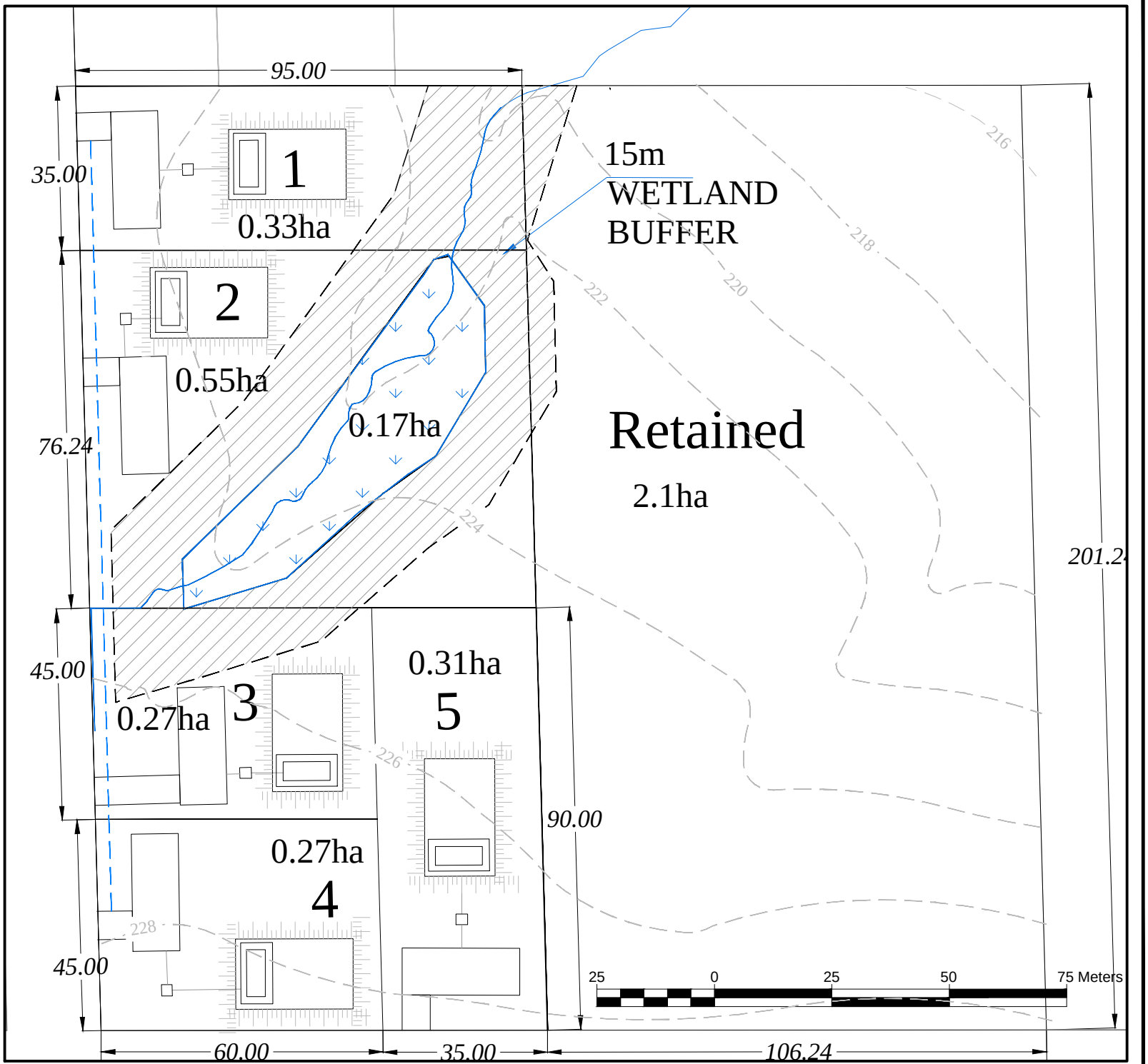
Appendix B – Plan of Severance

Site Plan - 1230 Sandy Bay Road, Lot 14, Concession 3, Town of Penetanguishene Ontario

Typical Layout (Conceptual)

Figure 4



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Severance Plan 1230 Sandy Bay Road, Lot 14, Concession 3, Town of Penetanguishene Ontario

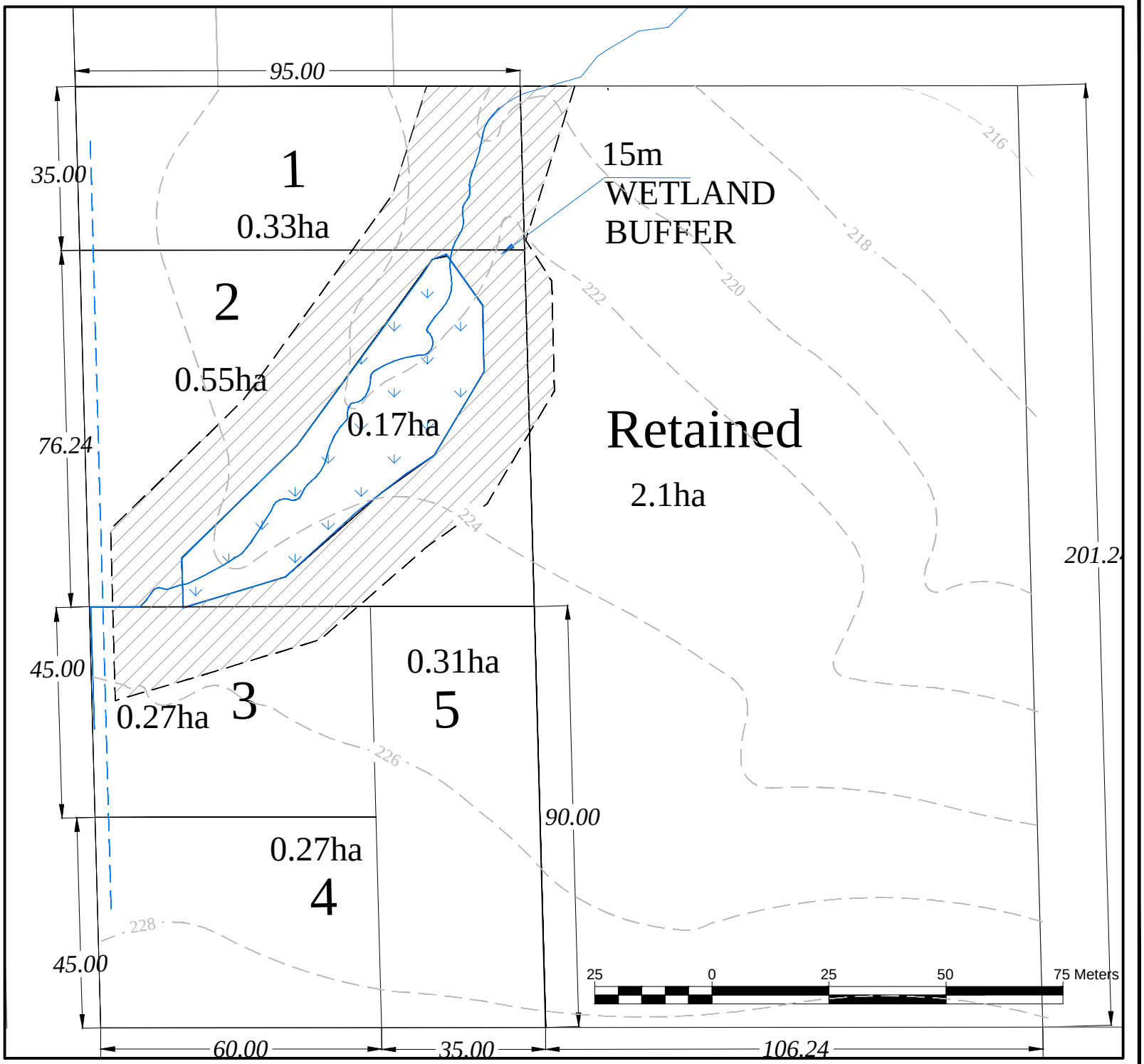

Figure 3

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Appendix C – Site Photos

Photo 1- Oak-Maple Deciduous Forest (FOD9-1) in upper portion of Zone A (front half of Lot 1)

Photo 2 - Poplar Deciduous Forest (FOD3) in lower portion of Zone A (rear of Lot 1)

Photo 3 - Relatively young Sugar Maple Deciduous Forest (FOD5) in Zone C (Lot 3)

Photo 4 - More mature Sugar Maple forest (FOD5) within Zone C (back of Lot 4)

Photo 5 - Sugar Maple forest (FOD5) within Zone C (upper portion of retained parcel)

Photo 6 - Sugar Maple forest (FOD5) within Zone C (lower portion of retained parcel)

Photo 7 - Black Walnut Deciduous Forest (FOD7-4) in Zone E (front half of Lot 5)

Photo 8 - Typical appearance of riparian wetland in Zone B (back half of Lot 2)

Photo 9 - Watercourse just north of Gilwood Property boundary