Alcona South Secondary Plan
(Sleeping Lion)

Scoped Environmental Impact Study

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The Cortel Group

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April 2013

AEC 07-013

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1.0 INTRODUCTION

Azimuth Environmental Consulting (Azimuth) was retained to undertake a scoped Environmental Impact study for the proposed Alcona South Secondary Plan Official Plan Amendment for the Sleeping Lion development located north of the 6th Concession Road in the Town of Innisfil. The environmental studies were conducted between 2002 and 2007 and were comprised of spring, summer, fall and winter field studies. The Secondary Plan submission provided recommendations on candidate natural areas based on the applicable planning policies but recommended more detailed analysis of these areas as part of review of future development applications.

The Sleeping Lion development area was included in the Alcona settlement area in September 2011 through an Ontario Municipal Board decision pertaining to site- specific Official Plan Amendment application D09-38 (PL110499). Subsequent to that approval the proponent has developed a concept plan that proposes removal of the woodlot to the north of the 6th Concession Road, as shown on the Alcona Secondary Plan – Land sue Map (Appended). The woodlot is currently designated as significant woodland in the Official Plan (2008) based strictly on the application of the size criteria of any woodland greater than or equal to 10 ha. Section 2.0 of North-South Environmental Inc.'s Environmental Background Report completed in support of the Official Plan environmental policies states that "refinement of feature boundaries should be undertaken as part of more detailed environmental studies associated with the secondary plans, block plans and eventually site plan and plan of subdivision applications. Guidance on the necessary studies will be provided as part of the evaluation and refinement of environmental policies in the Official Plan." The North-South report authors state that the strict application of the policies under 3.1.1 Natural Environmental Area of the OP would prohibit development of the property, however in accordance with Section 4.0 of the Provincial Policy Statement (PPS) other planning considerations should be considered when assessing the implications of removing the woodlot. It is apparent North-South Environmental recognized further analysis would be required to define significance on individual properties. Review of other planning considerations, such as the County of Simcoe Official Plan and the Lake Simcoe Protection Plan that provide direction on the delineation and protection of significant woodlands, support a more detailed review of the issue for development applications.

It is apparent from the above that there is an opportunity to reassess the designation of the woodlot on the property as significant woodland. Therefore this scoped Environmental Impact Study (EIS) will determine if the woodlot functions as significant woodland as part of the analysis (see Figure 1). . This document addresses the significance of the

woodland feature, as well as the potential impact of the proposed development on additional natural features present within and adjacent to the property limits. The LSRCA agreed that additional field studies were not required as the field data collected and used in the preparation of the Secondary Plan was sufficient in scope and deemed current. The portion of the original Secondary Plan study area applicable to the property is north of the 6th Concession and highlighted on Figure 2. All data is taken from the Master Environmental Report Alcona Secondary Plan (Azimuth June 2008).

It was agreed in consultation with the Town of Innisfil and the LSRCA that a secondary component of the EIS would be to assess the implications of diverting major storm water flows through the Little Cedar Point Provincially Significant Wetlands (PSW). This diversion was originally proposed in 2006 to alleviate the annual flooding hazard in the Community of Belle Ewart and was recognized as a potential compensating measure, if required, for the removal of the woodlot. The potential implications of the diversion are addressed within this document.

2.0 STUDY APPROACH

As part of the Secondary Plan process fieldwork was undertaken during the fall months of 2002, the winter, spring and early summer months of 2003, throughout the field seasons in 2005-2006 and in the winter of 2007 (Table 1). The results of the early investigations were reported in a Master Environmental Report (MER) in March 2005 (Azimuth 2005). The Ministry of Natural Resources (MNR) re-designated the Little Cedar Point Swamp as Provincially Significant Wetlands (PSW) subsequent to the completion of the 2005 MER. A peer review of the 2005 MER provided recommendations for additional field studies which Azimuth incorporated in the subsequent field studies.

The following work was undertaken by Azimuth to complete the required environmental studies as part of the Secondary Plan process:

- Consulted with approval agencies (e.g., LSRCA, MNR, MOE, Town of Innisfil) to collect background information and to identify their concerns within the proposed secondary plan area. Background information sources obtained included: floodplain mapping; topographical mapping; aerial photography; ground water systems mapping; water well records; soils and geologic mapping, fisheries and wildlife habitat data; and natural resource mapping;

- Collected background information from the Ontario Breeding Bird Atlas (OBBA) project regarding bird species identified in the area;
- Completed a number of field surveys (Table 1) within the proposed Secondary Plan area to identify and assess the existing land use, vegetation, wildlife, surface water drainage, ground water discharge and recharge areas, topography, and other relevant features on and adjacent to the study area;
- Prepared an inventory of vegetation communities and wildlife habitat present, mapped the vegetative communities and habitat features on aerial photography of the study area and characterized the habitat type/vegetative communities to determine their ecological importance and sensitivity to development;
- Identified linkage habitats among natural heritage features identified within the study area and to those evident on adjacent lands;
- Undertook a Species at Risk (SAR) assessment for the study area. SAR are species designated endangered, threatened or special concern under Ontario's *Endangered Species Act, 2007* (ESA); and
- Mapped the location of identified natural heritage areas on a base constructed using 2002 ortho - corrected colour aerial photographs.

Table 1: Summary of Field Activities Undertaken By Azimuth

Date of Field Work	Summary of Activities Undertaken
Vegetation Surveys	
April 27, June 29, July 6, 27, September 29, 2006 and August 18, 2011	Detailed survey of vegetation and communities within the lands located in between the 6th and 7th Line, east of 20th Sideroad.
Watercourse/Wetland Assessments	
May 26 and 27, 2005	Completed electrofishing at two sites on Cedar Creek (Watercourse #6) t with aquatic habitat assessments at each site.
June 1, 2005	Benthic invertebrate sampling at two sites on Cedar Creek (Watercourse #6).
January 7, 2007	Collected stream flows and cross sectional profiles at Cedar Creek (Watercourse #6) to document discharge, and aquatic habitat features.
February 21, 2007	General field reconnaissance.
Wildlife Assessments	
May, June 2003	Field assessment of wildlife resources including habitat for birds, mammals, reptiles and amphibians and early season survey of area watercourses.
June 7, 2005 and June 14, 2006	Dawn breeding bird survey of the lands located in between the 6th and 7th Line, east of 20th Sideroad.
April 29, May 4 and June 13, 2005.	Evening amphibian call surveys on the lands located north of the 6th Line, east of the CN Rail line.
May 4 and June 14, 2005 and April 12, 2006.	Evening amphibian call surveys on the lands located in between the 5th and 6th Line, east of 20th Sideroad.
April 28 and May 3, 2006.	Evening amphibian call surveys on the lands located north of the 6th Line, east of the 20th Sideroad.
May 3, 2006	Assessment of vernal pools located within the forest communities located east of 20th Sideroad, north of 6th Line and west of the CN Rail line.

Note: field studies done on lands not in proximity to the 6th Concession have been removed from the table.

3.0 PLANNING CONTEXT

3.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) (MMAH, 2005) outlines policies related to natural heritage features (Section 2.1) and water resources (Section 2.2). The *Planning Act* requires that planning decisions shall be consistent with the PPS.

According to the PPS development and site alteration shall not be permitted in:

- Significant habitat of endangered or threatened species;
- Significant wetlands in Ecoregions 5E, 6E and 7E; and
- Significant Coastal Wetlands.

In addition, no development or site alteration is permitted within 120m of these features unless the ecological function of these adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts to the natural features or their ecological functions.

Development and site alteration may be permitted in the following features provided that it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions:

- Significant woodlands (south and east of the Canadian Shield);
- Significant valley lands (south and east of the Canadian Shield);
- Significant wildlife habitat; and
- Significant Areas of Natural and Scientific Interest (ANSIs).

Similarly, no development and site alteration will be permitted on lands adjacent to the areas defined above unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated there will be no negative impacts on the natural features an ecological functions.

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

There are no ANSIs, or areas confirmed as Significant Wildlife Habitat (i.e. deer yards, etc.) on or adjacent to the study area.

Potential and known fish habitat exists within the watercourses and wetland features located within the study area.

3.2 Simcoe County Official Plan

The property is located within the Rural and Agricultural land use designation as per Schedule 5.1 of the County Official Plan. Discover Simcoe Mapping (Appendix B) identifies a woodland area within the property limits.

Policy 3.3.15 provides that development will not be permitted in Significant Woodlands unless it has been demonstrated that there will be no negative impacts. The definition of Significant Woodlands provides that "Woodlands that are located within a settlement area and are contiguous to significant woodlands that are located outside of the settlement area shall be considered significant for the purposes of this plan." In this respect, the woodlot is not contiguous to a Significant Woodland located outside of a settlement area and therefore would not be considered significant under the County OP policies. The woodlot is not defined as Greenlands in the County OP (Appendix B).

3.3 Town of Innisfil

Schedule B of the Land Use Plan for the Town of Innisfil indicates that large areas within the study area are designated as Rural. In February 2009 the Innisfil Growth Management Strategy identified the Sleeping Lion lands within the Alcona Settlement Area. In April 2009 the adoption of Official Plan Amendment 1 confirmed the lands as being within the Alcona settlement area.

The woodlot is designated as Natural Environmental Area (Appendix B, Town of Innisfil, Official Plan 2006).

The Town of Innisfil's Comprehensive Zoning Bylaw (September 2004) identifies the majority of the lands within the study area as "Agriculture" (Appendix B). Additionally, portions of the study area are designated as Environmental Protection (EP) Lands including the woodlot north of the 6th Line (Appendix B).

3.4 Town of Innisfil Natural Heritage System and Environmental Policy Areas

The Town of Innisfil Official Plan policies with regard to Natural Environment Areas are outlined in Section 3.1 of the OP (Town of Innisfil OP, 2006). The Natural Environment Area identifies and protects a variety of natural features including Environmentally

Significant Areas (excluding Hydrogeologically Significant Areas), Provincially Significant Wetlands, other wetlands, Areas of Natural and Scientific Interest, valleylands, significant woodlands, significant habitat of endangered and/or threatened species and stream corridors including fish habitat buffers. An Environmental Impact Study (EIS) is required when development or uses are proposed within any Natural Environmental Area or on any adjacent lands (i.e., within 120m of any PSW or 50m of any other Natural Environmental Areas). Natural Environment Areas shall be governed by the policies outlined in Section 3.1 of the OP regardless of whether they are situated within the Natural Heritage System as identified within Schedule A (Appendix B).

Terrestrial features and functions occurring in the study area that could be affected by the aforementioned policies are summarized in the following section of the report.

3.4.1 Locally Significant Woodlands

In July 2006 the Town of Innisfil adopted a new Official Plan that defined criteria for significant woodlands. Section 3.1.1.2 stated, a woodland shall be considered significant where it satisfies one or more of the following four criteria:

Any woodland that supports valued species of flora or fauna including any of the following:

i. Any G1, G2, G3, S1, S2 or S3 plant or animal species or community as designated by the Natural Heritage Information Centre (NHIC); or

Any species designated by the Committee On the Status of Endangered Wildlife In Canada (COSEWIC) or the Committee On the Status of Species At Risk in Ontario (COSSARO) as Threatened, Endangered or of Special Concern.

Any woodland over 2ha that is:

i. Within 100 metres of another significant feature; or

ii. Within 30 metres of a natural watercourse, surface water features or evaluated wetland.

Any woodland that is greater than or equal to 10 ha in size.

Azimuth applied the above criteria to define significant woodland. The woodland north of 6th Line identified would meet the significant woodlands criteria with a size of approximately 14.5ha.

3.4.2 Fish Habitat

The federal government has responsibility for inland fisheries through the Fisheries and Oceans Canada (DFO) related to the management and protection of fish habitat in accordance with the *Fisheries Act.* DFO developed the Policy for Management of Fish Habitat in order to assist the provinces and industry to develop tools to protect fish and fish habitat. The policy calls for an overall net gain in the productive capacity of fish and promotes habitat conservation and protection through the application of a guiding principle centred on achieving 'No Net Loss' of habitat's capacity to produce fish (DFO, 1991).

Fish habitat is any component of an aquatic system that provides any one of the following (from the DFO Working Around Water Factsheet Series, 2007):

Cover: Cover provides areas for escape from predators, competitors and high flows. Numerous forms of cover exist including substrate, woody debris, undercut banks and even deep water;

Food: Fish require food in adequate amounts to survive and reproduce. The type and amount of food produced is dependent upon the substrate and riparian characteristics of the watercourse;

Reproduction: Fish require adequate substrate and water quality for successful reproduction;

Water quality: Most species have specific temperature ranges in which they can live. Changes to riparian vegetation and width to depth ratio can alter watercourse temperatures. The introduction of sediment, pesticides or any other deleterious substances degrades water quality; and,

Migration routes: Fish often travel great distances within a watercourse for both spawning and feeding. Any activity or structure that blocks migration can detrimentally affect fish populations.

Based on the above definition, what constitutes fish habitat is all the elements that sustain aquatic habitat, not just the presence or absence of fish. Under this definition it is understood that all areas that sustain habitat directly, or indirectly, including many municipal drains, are regulated under the Federal *Fisheries Act* (FFA).

In 1998, DFO, MNR and Conservation Authorities formed a Fish Habitat Advisory Group, which created a Multi Agency Habitat Referral Process that gave Conservation Authorities the ability to undertake one of three levels of FFA review of projects on behalf of DFO. The LSRCA currently has a Level 3 agreement with DFO, which allows the LSRCA the ability to review projects in or near water, and determine if the project is expected to result in the harmful alteration, disruption or destruction (HADD) of fish habitat. Additionally, they are able to approve projects that are not expected to result in a HADD, through the issuance of a 'Letter of Advice'. If a HADD is expected to occur, the project is re-evaluated to determine if such impacts can be avoided (and eliminated entirely), through mitigation. If impacts cannot be mitigated then the project may require compensation. If compensation is considered a viable alternative, it must be developed in consultation with the LSRCA. If deemed acceptable by the LSRCA, the project is screened under the Canadian Environmental Assessment Act (CEAA), (by the Canadian Environmental Assessment Agency), and the project is forwarded to DFO for decision. If the project is deemed acceptable by the Minister, then an authorization (i.e. DFO approval) is granted. The project may only proceed to implementation after approvals (i.e. a Letter of Advice or an authorization) are granted from applicable regulatory agencies.

Any watercourse that provides direct or indirect habitat for fish would also be considered to be an Environmental Policy Area. The watercourses have been identified on Figure 2.

3.5 Lake Simcoe Region Conservation Authority

3.5.1 Ontario Regulation 179/06

Ontario Regulation 179/06 *Development, Interference with Wetlands & Alteration to Shorelines & Watercourses Regulation* under the *Conservation Authorities Act* regulates the alteration and/or interference with wetlands, shorelines, hazard lands and watercourses. Regulated areas include:

- Lands in proximity to the Lake Simcoe Shoreline;
- All wetlands greater than 0.5ha in size;
- An area of 120m around any Provincially Significant Wetland or any other wetland greater than 2ha in size;
- An area of 30m around any wetland greater than or equal to 0.5ha in size; and
- Any stream valley system (whether a watercourse is present or not) based on the greater of the floodplain, top of slope plus an allowance, 15m allowance or meander belt.

Portions of the study area are regulated under Regulation 179/06 due to the presence of an intermittent surface drainage that discharges to a wetland feature (Figure 2, Appendix C). The Authority may grant permission for development, in the form of a permit, within the regulated area if, in its opinion, the *conservation of land* will not be affected by the development. Conservation of land refers to the management as directed through land use decisions that has regard for the functions that natural heritage features provide on the landscape. A permit is required prior to any site alteration or construction within any of the regulated areas. It should be noted that the mapping is subject to change and the text of the regulation takes precedence over mapping.

3.5.2 Natural Heritage System

The LSRCA Board of Directors approved the Natural Heritage System (NHS) for the Lake Simcoe Watershed report prepared by LSRCA and Beacon Environmental on July 27, 2007. At this time, LSRCA is encouraging planning authorities to adopt the NHS and incorporate appropriate suggested policies in their Official Plans to protect and enhance the system (LSRCA *et al.*, 2007).

The Lake Simcoe Watershed NHS is comprised of a number of natural heritage components including Significant Habitat of Threatened and Endangered Species, Significant Wetlands, Significant Woodlands, Significant Valleylands, Significant Wildlife Habitat, Areas of Natural and Scientific Interest, Habitat for Fish and Linkages. These components were defined within the study area and criteria were devised in order to assess the level of significance of each of the abovementioned features. These features were then mapped on aerial photography for the entire watershed.

The study identifies four policy levels. The intent for each of the levels is outlined, in addition to the implications for replacement at each policy level, as shown on Table 2.

A number of natural heritage features have been identified within the study area and have been attributed a policy level. Policy level 1, 2, 3 and 4 exist within the Alcona Secondary Plan Area and within and adjacent to the property limits.

Table 2: Lake Simcoe Watershed NHS Policy Levels (LSRCA *et al.*, 2007).

Significance	Policy Level	NHS Intent	Implications for Replacement
Provincially Significant	Level 1	Retain. No development and land use change.	Replacement can be considered for impacts due to projects associated with non-Planning Act mechanisms such as Environmental Assessments.
	Level 2	Retain. No negative impact.	When there is no "negative impact" replacement can be considered for loss of area or function.
Watershed Significant	Level 3	Generally retain and avoid some flexibility. No net negative impact.	Retention preferred but replacement acceptable.
	Level 4	Supporting features	Not a development constraint, replacement encouraged

3.5.3 Lake Simcoe Protection Plan

The *Lake Simcoe Protection Act* was passed in December 2008 and the Lake Simcoe Protection Plan (LSPP) became effective on June 2, 2009. The LSPP objectives and policies are directed at improving the ecological health of Lake Simcoe. The policies of the LSPP provide different levels of protection for designated settlement and non-settlement areas in recognition that for those areas approved for development changes to the land use or environmental conditions will occur. The objective of the LSPP in designated settlement areas is to avoid, minimize and mitigate potential impacts as part of the approval process.

Given the Sleeping Lion lands were approved for inclusion into the settlement area in April 2009 the lands are not subject to the requirements of the LSPP because it became effective after OPA 1 was approved. Therefore under the LSPP Settlement Area Policies 6.32DP to 6.35DP are applicable, excluding Policies 6.20DP to 6.29DP which direct development and site alteration in key natural heritage features such as wetlands and significant woodlands. Supporting opinion letters on the applicability of the LSPP from Bousefields Inc. and McCarthy Tetrault LLP are provided in Appendix B.

4.0 EXISTING CONDITIONS

4.1 Land Use

4.1.1 On-Site Land Use

The property is within the Alcona South Secondary Plan situated immediately north of the 6th Concession and east of the CNR Line (Figure 2). No settlement concentrations currently exist within the property limits.

Land use within the property limits includes a permanent residence associated with the active agriculture. A portion of the property is also comprised of natural areas with a successional wetland and forested features (Figure 2).

An active Go Train rail line represents the western property limit.

Historically, a large proportion of the property was farmed. Much of this land is still actively cultivated as described in Section 4.2 below.

4.1.2 Adjacent Land Use

Land use to the north, south and west of the property boundaries, as shown in Figure 2 is a combination of active agriculture and residential development within the Town of Alcona Beach and the Community of Lefroy/Belle Ewart.

Lake Simcoe borders the property to the east. A mix of seasonal and permanent residential development associated with the Lake Simcoe shoreline extends both north and south of the property.

Several smaller isolated forest units exist on surrounding adjacent lands.

4.2 Agricultural Lands

Agricultural lands to the west of Lefroy/Belle Ewart, Alcona and the study area are generally Class 1 – 6 in terms of their agricultural capability and are governed by restrictions outlined in Section 3.2 of the Town of Innisfil OP (Town of Innisfil, Official Plan 2006). Section 2.3 of the Provincial Planning Policy also protects agricultural lands (MMAH, 2005). The agricultural lands are present on well-drained tablelands sections of the study area to the west of the beach ridge of ancient Lake Algonquin. Sandy loam is the predominant soil type in the area (Simcoe County Soil Survey Report #29). The loams range from being stone free to moderately stony (Table 3).

Table 3: Soils of the Study Area

Soil Series	Description	Drainage
Alliston (Ans)	Sandy loam soils on level to gently sloping topography	Imperfect
Muck (M)	Well decomposed, organic material over 1 foot in depth underlain by rock, sand, silt or clay. Form in topographic depressions. Stone free.	Poor
Guerin (Gul-b)	Loamy, stony phase soils. Light grey calcareous loam and sandy loam till with imperfect drainage. Slightly to moderately stony.	Imperfect
Bondhead (Bs-b)	Light grey, calcareous loam and sandy loam till. Slightly to very stony.	Good

Agricultural land use in the study area is a combination of tillage crops such as corn, combined with hay production and pasturing of beef cattle. There are no full-time livestock operations in the study area and the majority of the farmstead barns and outbuildings have been removed or have been inactive for many years. Historically farmed lands in the eastern part of the study area now contain old field successional/cultural meadow habitat due to termination of cultivation and/or livestock pasturing. Soils mapping for the area is appended.

4.3 Ground Water

Regional ground water flow is toward Lake Simcoe and this flow is recharged largely from sand and silt tableland soils in the vicinity of the Community of Churchill west of the study area. Boreholes drilled within and adjacent to the study area showed medium to fine sand and fine coarse gravel in the upper 1.5 metres with dense to very dense silty fine sand and fine to coarse gravel up to 6 metres in depth. The underlying dense to very dense material restricts surficial soil drainage resulting in the imperfect drainage. This is evident in the imperfectly drained Guerin (Gul-b) sandy loam till with imperfect drainage and moderately stoney. These soils have low recharge rates and as such have limited function for ground water recharge. MOE water well records for the area are appended.

4.4 Watercourses

The property north of the 6th Concession is traversed by an intermittent drainage feature (Cedar Creek, north tributary) that conveys seasonal agricultural surface runoff to the municipal drainage ditch along the 6th Line. In this report, drainage features are referenced by the names that have been unofficially assigned by the LSRCA (unpublished, 2007), along with a number designation historically assigned by the MNR.

The Cedar Creek, north tributary is located in the central portion of the Alcona Secondary Plan study area and receives intermittent drainage from the agricultural lands on the north side of the 6th Line (Figure 2). From the GO rail line, discharge is conveyed for a short distance within a drainage ditch, before flowing overland as diffuse runoff through an un-evaluated deciduous swamp. Discharge ultimately enters into a small dug pond encircled by cattails (approximately 0.5m deep) located immediately north of the 6th Line (Figure 2). The pond receives intermittent upstream drainage, and is not connected to the 6th Line ditch except if flows topped the banks during periods of elevated water levels. Two culverts under the 6th Line, situated to the east of the pond, convey drainage from the north to the south side of the roadway. From there the flow discharges to Lake Simcoe.

4.5 Fisheries and Aquatic Habitat

Azimuth completed aquatic habitat assessments on Cedar Creek in 2005 and 2007. The assessment included fish sampling with the use of a backpack electrofishing unit, aquatic invertebrate surveys in accordance with the Ontario Benthos Biomonitoring protocol (OBBN), (Jones *et al*., 2007), cross sectional profiles to confirm flow and channel capacity, and general site documentation. Results of the sampling program are presented in Tables 4, 5 and 6 respectively.

Fish sampling was completed using a single pass fish sampling effort to complete a qualitative analysis of the fish community present. Aquatic macro-invertebrate sampling included the identification of invertebrates to the level of Order from which biological indices of richness, abundance, composition and diversity were derived in order to characterize the biological condition at the site. This coarse level identification, combined with the fisheries investigations and site documentation was used to provide a general indication of water quality and aquatic health in the study area.

The result of our aquatic investigation on each watercourse is described in the following paragraphs.

Small fish were observed in the pond in the spring months indicating that it provides direct habitat for fish, however, the pond completely freezes during the winter months and does not provide overwintering habitat. Given the small size of the pond, shallow depth, and seasonal connectivity to downstream drainage areas, species use and extent of habitat present are low and potentially accessible only seasonally under elevated water levels.

Fish sampling was completed using a backpack electrofisher along the 6th Line ditch, and at a downstream reach near Lake Simcoe (Figure 2, Table 4). Results indicated that species diversity was high in the downstream reach (16 species identified) and included darters, Yellow Perch, Largemouth Bass, Northern Pike and a range of cyprinids (Table 4). The species assemblage is indicative of both stream and lake dwelling fish species, and due the direct connection to Lake Simcoe, includes lake dwelling species adapted to both warm and cool water thermal regimes. The watercourse is confined to the roadside ditch along the 6th Line therefore fish access up to the divergence to the north and south tributaries is limited by seasonally fluctuating water levels.

Aquatic invertebrate sampling was completed at two sites as shown on Figure 2. As shown on Table 5, worms (*Oligochaeta*) and snails (*Gastropoda*) comprised the dominant taxa (82%), both of which are highly tolerant to changes in water quality and are more commonly found in degraded systems. Species richness was low (average of 8) however the occurrence of mayflies, caddisflies and stoneflies (Order *Ephemeroptera*, Order *Plecoptera*, and Order *Trichoptera*) in low quantities may indicate moderate water quality conditions.

Our study results indicate that the Cedar Creek drainage area functions as warm water, intermittent indirect habitat with potentially cooler water occurring east of the property in the vicinity of Lake Simcoe. The LSRCA did not have information for this system, and as such has conservatively classified this system as cold water (LSRCA, unpublished 2007) however study results indicate warm water conditions in this system.

None of the fish species recorded by the MNR, or sampled by Azimuth are classified as vulnerable, threatened or endangered (VTE) species.

4.6 Vegetation

The Ecological Land Classification for Southern Ontario (ELC) (Lee *et al.,* 1998) was used as a guide to the classification of the vegetation communities within the property limits and on adjacent lands. The ELC classification system uses dominant canopy

species, common associates, topographic position and soil characteristics as a basis for identifying "Vegetation Type" present in a site. This level is the most detailed level of ELC classification within Southern Ontario. Since three season vegetation inventories were conducted within a large proportion of the proposed Secondary Plan limits, this is the level of classification utilized within the majority of the study area.

The boundaries of the wetland features were determined using the method outlined in the Ontario Wetland Evaluation System: Southern Manual (OMNR, 1993 with 2002 updates), which directs that the boundary of the wetland should be placed where 50% of the plant community consists of upland species and 50% consists of wetland species.

As previously indicated, actively cultivated agricultural lands, pastureland, fencerows and young to medium successional deciduous and mixed forest communities dominate the vegetation composition and structure within the study area. The agricultural fields (both active and abandoned) have some disturbed vegetation around the edges as well as forested hedgerows consisting of a variety of native and planted tree species such as Maple, Hawthorn, Aspen, Pine, Dogwood and Apple. The vegetation communities types present within the property limits include: Deciduous Forest (FOD), Cultural Thicket (CUT), Deciduous Swamp (SWD), Thicket Swamp (SWT) and Shallow Marsh (MAS). Table 7 summarizes the structure and composition of the vegetation communities of the property which are highlighted in yellow. A complete list of observed plant species within the Alcona Secondary Plan Area are listed in Tables 8 and 9a and 9b with species found within the property limits highlighted in yellow.

The following vegetation types were observed within the property limits:

Dry – Fresh Poplar Deciduous Forest Type (FOD3-1) – A community dominated by Trembling Aspen with White Elm and Ash associates. Species found within the shrub layer include young poplar seedlings and saplings, Dogwoods, Choke Cherry and Prickly Gooseberry**.** The ground layer consists of species including Self-heal, Woodland Strawberry, Agrimony and Virginia Creeper. The unit is 5.48ha in size containing trees approximately 30-50 years of age. In 1954 the area was void of tree cover (airphotos appended). In 1989 tree cover had been established. Therefore we estimate at some time in the 1960's the trees were no longer controlled with the termination of agriculture in that area and natural succession began. This natural successional process would occur on any agricultural lands removed from production.

White Birch – Poplar Mineral Deciduous Swamp Type (SWD4-3) - This young community is dominated by Trembling Aspen. Associates include Black and Red Ash, White Birch and Eastern White Cedar. The shrub layer is sparsely populated with Red-

osier Dogwood and various willow species. Groundcover is also sparse but includes sedges, ferns, horsetails and mosses. Standing water is present within the community in the spring time due to surplus surface water runoff from the agricultural lands. The unit is 9 ha. Aerial photography from 1989 shows further reduction in the agricultural land use and the occurrence of successional growth.

South of the treed area are the following vegetative communities:

Red-osier Mineral Thicket Swamp Type (SWT2-5) – The community has limited tree cover represented by sporadic occurrences of various species including Trembling Aspen, American Elm, standing dead deciduous trees and young Basswood. Dominant shrubs include Red-osier Dogwood, Speckled Alder, and willow species. Highbush Cranberry, European Buckthorn and Wild Red Raspberry are also found within this community. Groundcover includes wetland adapted grasses and occasional forb species. The unit is 1.88ha and contains successional species commonly found on poorly drained lands. Natural succession has occurred in this area due to the cessation of agricultural activity.

Cattail Mineral Shallow Marsh Type (MAS2-1) - This community consists of a man-made pond that has become vegetated. The pond is open (no vegetation in the center) but surrounded by cattails, willow and dogwood. The occasional wet adapted grasses and forbs are present. The unit is 0.19ha. The pond appears to have been dug for the purposes of watering livestock through intercepting storm water runoff during major storm events and utilizing the poor drainage characteristics of the area soils to minimize loss through infiltration.

The Cultural Thicket community (CUT1) north of 6th Line and adjacent to the existing woodlot has a few deciduous trees interspersed amongst old field meadow type vegetation. Species observed include White Ash and Balsam Poplar. Shrub species include Willow and Hawthorn species. The ground layer consisted of species commonly found within early successional communities on former agricultural lands. The isolated cultural thicket in the north-east corner of the property was surveyed in 2011 as part of a Special Study Area assessment conducted by Azimuth. The vegetation observed in this community is presented in Table 9b. Species observed are similar to those observed in CUT1 and represent an early successional community of former agricultural lands.

None of the above vegetative communities contained any Species at Risk (i.e., endangered, threatened or special concern), G1, G2, G3, S1, S2 or S3 plant or animal species. No community has been identified as “provincially significant” by the MNR’s Natural Heritage Information Centre (NHIC). All communities are common provincially and all species found are secure and common to Ontario. The woodland units are not

within 100m of another woodland feature. The wetland vegetative units on the property are a result of a man-made pond and poorly drained soils and do not represent a ground water discharge area or provide the flood attenuation function attributed to wetlands.

None of the identified vegetation communities are considered to be provincially uncommon or rare within Southern Ontario (NHIC, 2008).

No Butternut was observed on or within 25m of the property limits. Butternut is considered an endangered species by both OMNR and COSEWIC.

A number of watershed rare species were identified within the property including Smooth Aster (*Symphyotrichum laeve*), Marsh Horsetail (*Equisetum palustre*), Narrow-leaf Tick Trefoil (*Desmodium paniculatum*), Broad-leaf Witchgrass (*Panicum latifolium*), Torrey's Wild Licorice (*Galium lanceolatum*) and Autumn Willow (*Salix serissima*)(LSEMS, 2003). The communities in which the abovementioned species are found are presented in Figure 2 and within Tables 8 and 9a and 9b. These species are common in the province and in surrounding watersheds, and therefore their presence within the property limits is not of concern.

There are no vulnerable, threatened, rare, or endangered plant species documented to occur within the property according to OMNR's Natural Heritage Information Database (NHIC, 2008) (Appendix A). There are three historical records for rare plants in the in proximity to the property including A Moss, Clinton's Leafless-bulrush and Handsome Sedge (NHIC, 2008), none of which, were observed within the property (Appendix A).

4.7 Terrestrial Wildlife

4.7.1 Mammals

Wildlife species utilizing the natural features within the property were identified from direct observation and through interpretation of sign (i.e. tracks, scats, vocalizations, etc.) while conducting other surveys in the area. These species are included in Table 10. None of the mammals observed are of conservation concern.

The wildlife commonly found in this area is typical of that associated with small woodlots, wetlands and forested corridors/riparian areas fragmented by agricultural land use within south - central Ontario.

Documentation for the Little Cedar Point wetland located south of the 6th Line indicates that mammals typical of marsh and pond habitat such as Beaver (*Castor canadensis*) and Muskrat (*Ondatra zibethicus*) are present.

Table 10: Mammals Observed within the Study Area 2005/2006

Family	Scientific Name	Common Name	GRANK	SRANK	COSEWIC	MNR	Track
CANIDAE	*Canis latrans*	Coyote	G5	S5			N
CANIDAE	*Vulpes vulpes*	Red Fox	G5	S5			N
CERVIDAE	*Odocoileus virginianus*	White-tailed Deer	G5	S5			N
LEPORIDAE	*Sylvilagus floridanus*	Eastern Cottontail	G5	S5			N
MURIDAE	*Microtus pennsylvanicus*	Meadow Vole	G5	S5			N
PROCYONIDAE	*Procyon lotor*	Raccoon	G5	S5			N
SCIURIDAE	*Sciurus carolinensis*	Grey Squirrel	G5	S5			N
SCIURIDAE	*Tamias striatus*	Eastern Chipmunk	G5	S5			N
SCIURIDAE	*Tamiasciurus hudsonicus*	Red Squirrel	G5	S5			N

The lands within the study area and property limits are not mapped as winter deer yard by OMNR (Allen *et al*., 2005). There was no evidence of significant browsing indicative of traditional winter use of forested habitats within the study area, even those areas providing conifer cover. No accumulations of deer tracks, trails or pellet groups (i.e. droppings) were observed during winter within the study area.

There are no recent (i.e. within the last 20 years) threatened, endangered or provincially significant (i.e. species with SRANK 1, 2 or 3) wildlife species documented to occur within the study area (NHIC 2008, OBBA 2008).

4.7.2 Birds

The property provides habitat for a variety of passerine, raptor, waterfowl, and other aquatic bird species, as confirmed during dawn breeding surveys, because of the mixture

of scattered woodlots interspersed between agricultural lands in proximity to Lake Simcoe. Dawn bird surveys were conducted on June 7, 2005 and June 14, 2006 within the Alcona Secondary Plan area (Azimuth 2008b). No specific survey stations were utilized during these surveys. Instead, the study area was generally sampled using roving surveys. For the purposes of this report, we assume that all species identified in the study area could potentially be present within the property limits. A list of all the species identified during the breeding bird season, and incidentally during the course of field surveys is presented in Table 11. Area-sensitive species observed in the vicinity of the property included Veery (*Catharus fuscescens*) and Ovenbird (*Seiurus aurocapillus*). Area-sensitive species require large expanses of suitable habitat to maintain populations (OMNR, 2000). Suitably sized habitat for area sensitive species was not observed within the property limits.

Two colonial species, Bank Swallow (*Riparia riparia*) and Cliff Swallow (*Petrochelidon pyrrhonota*) have also been confirmed to be breeding in the area (OBBA, 2008) (Appendix E). Bank and Cliff Swallows require riverbanks, cliffs and bluffs (OMNR, 2000). No habitat for these species exists within the property limits.

4.7.3 Amphibians

Evening calling amphibian surveys were conducted within the property limits on April 29, May 4, and June 13, 2005 and April 12, 28 and May 3, 2006 as part of a larger sampling program for completion of the Master Environmental Report for Alcona South Secondary Plan (Azimuth 2008). Sampled stations associated with the property were Station 1, 2 and 10. The locations of the sampling stations can be found on Figure 2 and correspond with the list of species observed in Table 12. High concentrations of calls were heard from the Poplar swamp (SWD4-3 Community #10) north of the 6th Line and within the Deciduous Swamp to the south of the 6th Line (i.e. Little Cedar Swamp, Community #11). Western Chorus Frogs (*Pseudacris triseriata*), Spring Peepers (*Pseudacris crucifer*), Gray Treefrog (*Hyla versicolor*), American Toad (*Bufo americanus*), Green Frog (*Rana clamitans*) and Wood Frog (*Rana sylvatica*) were heard calling during these surveys. During the day Tree Frogs (*Hyla versicolor*) were heard calling within the Maple – Beech (FOD5-2 Community #25) forest unit north of the 6th Line.

None of the amphibians observed within the property limits are considered to be Species at Risk in Ontario.

4.8 Species at Risk

Ontario's ESA provides regulatory protection to endangered and threatened species prohibiting harassment, harm and/or killing of individuals and destruction of their habitats. Habitat is broadly characterized within the ESA as the area prescribed by a regulation as the habitat of the species or an area on which the species depends, directly or indirectly, to carry on its life processes including reproduction, rearing of young, hibernation, migration or feeding.

The various schedules of the ESA identify SAR in Ontario. These include species listed as extirpated, endangered (END), threatened (THR) and special concern (SC). As noted above, only species listed as endangered and threatened receive protection from harm and destruction to habitat on which they depend. However, as part of a transitioning process, not all species listed as endangered and threatened currently receive habitat protection. Species listed as endangered and threatened under Ontario's former ESA (1971) are granted habitat protection. Species added to the list in June 2007 receive habitat protection when species specific habitat regulations have been enacted. The habitat of species added to the list as endangered or threatened after June 2008 is protected and habitat protection will be granted to all of Ontario's endangered and threatened species in June 2013.

Review of the MNR Natural Heritage Information Centre has indicated the historic presence of rare species within the property and study area. Species identified and the observation dates are presented in Table 13. Given the date of the most recent observance (1975) these species are not considered within the Species at Risk assessment for this property.

Table 13: NHIC Rare Species

Species Name	**Scientific Name**	**Date Observed**	Provincial Rank	**MNR Status**	**COSEWIC Status**
A moss	*Brachythecium calcareum*	1972	S2		
Azure Bluet	*Enallagma aspersum*	1955	S3		
Clamp-tipped Emerald	*Somatochlora tenebrosa*	1940	S2		
Clinton's Leafless-bulrush	*Trichophorum clintonii*	1975	S2		
Delta-spotted Spiketail	*Cordulegaster diastatops*	1956	S3		
Forcipate Emerald	*Somatochlora forcipata*	1918	S2		
Handsome Sedge	*Carex Formosa*	1972	S3S4		
Henslow's Sparrow	*Ammodramus henslowii*	1942	S1B	END-R	END
Pronghorn Clubtail	*Gomphus graslinellus*	1957	S2		
Williamson's Emerald	*Somatochlora williamsoni*	1948	S3		

According to the records for the relevant square of the Ontario Breeding Bird Atlas project (Atlas Square ID 17PK10), two provincially rare and one regionally rare species have been confirmed as breeding within the area: Trumpeter Swan (*Cygnus buccinator*), Red-headed Woodpecker (*Melanerpes erythrocephalus*) and Merlin (*Falco columbarius*) (Appendix E). None of the abovementioned bird species were observed within the study area (Table 11). The Trumpeter Swan requires large expanses of open water (i.e. approximately 100m), abundant accessible forage in the form of submergent and emergent vegetation and a structure for nesting (i.e. beaver dams and small islands) (Mitchell, 1994). The Red-headed Woodpecker inhabits open, deciduous forest with little understory, fields or pasture lands with scattered large trees, wooded swamps,

orchards, small woodlots or forest edges, groves of dead or dying trees (OMNR, 2000). Merlin inhabits open forest, mixed woods and plantations, marshes or bogs, cliffs, needs nearby open grassland, old fields or pastures (OMNR, 2000). There is no suitable habitat for these species within the property limits given the predominance of active agriculture. Suitable habitat for these species could be present on adjacent lands.

During breeding bird surveys conducted by Azimuth it was determined that Barn Swallow, Eastern Meadowlark and Bobolink, all threatened species in Ontario, are present in the Alcona Secondary Plan study area (Azimuth, 2008b).

A letter has been sent to the MNR Midhurst District to determine if additional species should be considered in the context of the proposed development. At this time there has been no response. Any additional information will be forwarded upon receipt.

Table 14 provides a habitat assessment for the Species at Risk identified by MNR. NHIC, OBBA and Azimuth's wildlife surveys as having potential habitat and/or having been observed in the area in relation to the existing conditions of the property.

5.0 PROPOSED DEVELOPMENT CONCEPT

The proposed development concept is shown in Appendix F.

The proposed concept would remove the natural heritage features completely to facilitate the construction of Webster Blvd. and the adjacent urban development. It also includes a number of linear parks in the area where the woodlot is present. Storm water is to be directed to storm water management pond features on the property. The development will be municipally serviced for water and sewer.

6.0 IMPACT ASSESSMENT

6.1 Introduction

The impact assessment evaluates the impact of the proposed development on the existing natural features within and adjacent to the property, including the woodlot/wetland feature, fish habitat, Species at Risk habitat and wildlife habitat and ground water contributions.

6.2 Vegetation

The development, as proposed, will result in the removal of all vegetation communities within the property limits. The communities and species identified within the property limits are not rare on a provincial level. Watershed rare species identified have stable populations outside of the watershed within the Province. Therefore, the populations will continue to thrive post-development.

The total area of the wetland communities, the swamp thicket and deciduous swamp, is 10.88ha. Hydrogeological studies conducted for the completion of the Alcona Secondary Plan Area Master Drainage Plan (Greenland 2008) have indicated that these communities are a result of the accumulation of surface flow in an area of poorly drained soils. The proposed storm water plan for the development of the surrounding agricultural lands will alter surficial flow and direct water away from this community to storm water management facilities. This will remove the seasonal intermittent water supply to the feature post development. The urbanization of the Secondary Plan area will eliminate the surface runoff to these poorly drained agricultural soils. Although wetland vegetative communities are present the successional wetland vegetation that was established due to the combination of poorly drained mineral soils and intermittent surface runoff through the area and not by the presence of a significant ground water discharge representative long term wetland condition. Removal of the feature will not have a significant impact on local flora and fauna given the predominance of wetland habitat in the area, the lack of provincially and locally rare species associated with the vegetation communities.

6.3 Watercourses and Fish Habitat

No permanent watercourses are present within the property limits. Intermittent runoff from the adjacent agricultural lands flows through the property as braided overland flow, eventually discharging to the roadside ditch on the 6th Line. Review of the historical photography does not show any defined drainage feature traversing the property. The vegetation patterns on the historic aerial photography appear to support the braided flow pattern through the property has historically existed on the property.

The woodlot does not contain any ground water discharge areas or additional surface water sources. Development of the lands around the woodlot to urban standards within the Secondary Plan area will eliminate the intermittent agricultural runoff that currently flows through the woodlot under saturated conditions. Therefore the woodlot will not continue to convey this intermittent surface water to the municipal drainage ditch along the 6th Line post development. Removal of the woodlot does not represent an impact to area fisheries or permanent flow in the 6th Line municipal drain in proximity to Lake

Simcoe. This surface flow would be directed to storm water management facilities post development and would be discharged to Lake Simcoe via the municipal road drainage ditch, consistent with the existing drainage system. This flow would continue to support the existing fish habitat associated with the municipal drainage ditch.

A dug pond to water livestock on the property has been observed to provide seasonal fish habitat for minnow species. This feature freezes to the bottom in the winter killing any minnows present due to its shallow depth, as observed by Azimuth staff. The pond has no outlet or connection to the municipal drainage ditch on the 6th Line that would provide a direct connection for fish migration onto the property during spring freshet or major storm events. Modeling undertaken by Greenland International as part of the Master Servicing Study did not include the north tributary of Cedar Creek or the wetland unit in their assessment of existing hydrological features or watercourses. It is our understanding the Master Servicing Report was peer reviewed and accepted by the Town and the LSRCA. Therefore removal of the pond and the management of storm water post development via storm water pond(s) will not adversely impact fish habitat in the municipal ditch along the 6th Line.

6.4 Wildlife

All the bird species observed in the forested lands and in the adjacent areas are commonly found in Simcoe County. At the time of the surveys, the woodlot had approximately 1.2 ha of interior forest habitat (i.e. 100m from forest edge). The woodlot contained only a fraction of the area-sensitive forest breeding birds expected to breed locally (i.e., 3 of potentially 12 area-sensitive forest breeding birds) and only a fraction of forest birds expected to breed locally (i.e., 7 of 27). This low abundance of area-sensitive species and forest breeding birds in general is related to the poor quality of the forest habitat (i.e., young, successional poplar grown on abandoned farmland). Therefore, woodlot is not functioning at high level for area-sensitive forest breeding bird species or forest breeding birds in general.

Western Chorus Frogs, Spring Peepers, Gray Treefrog, American Toad, Green Frog and Wood Frog were heard calling from within the Poplar Mineral Deciduous Swamp Type during evening surveys. All these species are commonly found in Ontario and throughout Simcoe County. Given that the species are common to the area, and the protection of amphibian habitat in the Little Cedar Point PSW is provided by provincial planning policy, we are assured that amphibian habitat function will be maintained within the Secondary Plan area post development. By the fact that the Little Cedar Point wetland hydrology is not fully dependent on agricultural runoff to maintain vernal pools

and has been shown to be inundated into June it represents better quality amphibian habitat that will remain post development. Therefore there is no compelling reason to use the current existence of amphibian habitat in the woodlot as a function compelling its identification as significant.

6.5 Woodlot Impact Assessment

6.5.1 Natural Features

The woodlot has been previously identified, as discussed in Section 1, as significant woodland based on its ecological features and functions. North-South Environmental's Environmental Background Report prepared in support of the Official Plan environmental policies stated in Section 2.0 Approach; "Refinement of feature boundaries should be undertaken as part of more detailed environmental studies associated with the secondary plans, block plans and eventually site plan and plan of subdivision applications. The Town OP reinforced the need to a more detailed impact assessment in Section 1.1.10 which requires an EIS be undertaken for proposed development within the Natural Environmental Area designation." Given that the OP provides no direction on how to assess the significance of a woodlot based on ecological features and functions, our assessment utilizes the criteria set out in Section 3.1.1.3 of the OP and the Significant Woodland criteria recommended by the Ministry of Natural Resources in their Natural Heritage Reference Manual 2010. Based on the habitat assessment above, the feature does not provide habitat for sensitive species including area sensitive birds, amphibians, or fish habitat. Therefore, the feature does offer a significant ecological function to the area and should not be considered a significant feature.

6.5.2 Historic Land Use

Historically, Simcoe County was a livestock based agricultural economy with farms dedicated to livestock production (e.g., beef, dairy). Prior to development pressures and changes in the economic viability of livestock production in Ontario, the vast majority of 100 acre farms supported livestock. Lands that were not cultivated due to poor drainage, stoniness or marginal soils were used as part of the farming operation as permanent pasture and the resulting grazing limited the advance of natural succession. The appended 1954 aerial photography shows no woody vegetation and an agricultural use and confirms the woodlot was not a natural feature within the Secondary Plan area when the predominant commercial activity was agriculture, rather than land speculation.

Review of the 1989 aerial photography shows the significant woodland north of the 6th Concession as permanent pasture with a portion of the lands in woody growth. Woody growth was often associated with these permanent pastures because the farmer did not

cultivate the lands in any way and the act of grazing controlled the expansion of tree cover and what trees did remain, provided shade, protection from the elements and browse for the livestock.

In 1991 the Alcona Secondary Plan Schedule J Land Use & Road Plan showed Alcona extending to the middle of Concession 6 within the extension of the original Webster Blvd. continuing south. When lands were purchased for future development within or adjacent to the current Alcona South Secondary Plan Area, most farm operators left, livestock was removed and the lands become rented to area farmers as an interim use. This change in land use pattern meant marginal lands were no longer utilized for agriculture and underwent natural succession back to a treed condition due to the length of time required for settlement areas to be established and approved. This is the situation for the lands north of the 6th Concession.

Field work undertaken as part of the Alcona South Secondary Plan confirmed the successional nature of the subject woodlot as it is predominately a successional poplar vegetative community and lacks the maturity and species diversity found in other long established woodlots in the Town (i.e., the woodland ground cover is dominated by old-field grasses and forbs rather than the forest herbs [i.e., Trillium, Wild Leek, Blue Cohosh, Solomon's-seal, etc., Trout Lily, etc.) of high quality/mature woodlots of the County. Therefore, the evidence of succession within the woodlot feature further confirms that the woodlot should not be considered significant.

6.5.3 Planning Policy

Town of Innisfil Official Plan

The Town planning policies provide no direction on defining significance for this feature other than size, specifically Town of Innisfil – OP Section 3.1.1.3 c. The policies state that any woodland that is greater than or equal to 10 ha in size that lacked any significant species is being considered significant. North-South Environmental's Environmental Background Report completed in support of the Official Plan environmental policies states in Section 2.0 Approach; "Refinement of feature boundaries should be undertaken as part of more detailed environmental studies associated with the secondary plans, block plans and eventually site plan and plan of subdivision applications. Guidance on the necessary studies will be provided as part of the evaluation and refinement of environmental policies in the Official Plan."

The woodlot lacks any unique species or a diversity of forest vegetation and associated habitats that would result in the feature having any ecological features or functions that are not commonly found in Town or Simcoe County. It is composed of a predominantly

successional poplar forest community resulting from termination of agricultural activity lands previously pastured. Therefore, the feature has no ecological significance.

Further, The Lake Simcoe Protection Act Section 6.23-DP states development is not permitted within a key natural heritage feature (i.e., significant woodland); however the lands are not subject to the LSPP Policies 6.20 – 6.29. The lands were identified under the Innisfil Growth Management Strategy in February 2009 prior to the LSPP as being within the Alcona settlement area and the Official Plan Amendment 1 under the Innisfil OP which was adopted in April 2009. The urban boundary was ultimately approved in September 2011, confirming the Sleeping Lion lands are located with a "settlement area". Given the lands are located within an existing settlement area and not subject to the LSPP, the Town has the ability to approve development within the forested lands and/or consider alternative environmental enhancements potentially as compensation for permitting development within the woodlot.

It is our understanding that, under the current Alcona Secondary Plan, the Town proposes to construct Webster Blvd., a collector road, through the centre of the woodlot. This will bisect the woodlot resulting in two woodlots that are less than 10 ha. Thus, the Town's traffic plan will result in the woodland being fragmented into segments no longer of sufficient size to be considered significant. This alignment is also shown in the current draft of the Alcona South Secondary Plan.

In our opinion, the Town of Innisfil should have regard for the fact that these lands were not a significant component of the historic natural heritage landscape, but rather a result of natural succession of predominately permanent pasture on which agricultural practices were terminated in anticipation future development. At the outset of preparation of the Secondary Plan the woodlot was not identified as a significant feature. In addition the landscape level of analysis utilized by the Town in the preparation of the Official Plan would not have had the more detailed analysis recommended by MNR to confirm significance. It is appropriate and consistent with the planning process to recognize the results of the more detailed assessment of the woodlots ecological functions upon which to determine significance. Give the findings presented in Table 15, as described below, the woodlot does not provide the ecological functions that would define the woodlot as significant or unique from those commonly found within the Town.

Provincial Policy Statement

The PPS (2005) provides policy direction on matters of provincial interest related to land use planning and development and also provides direction for appropriate development while protecting resources of provincial interest, public health and safety, and the quality

of the natural environment. The PPS supports improved land use planning and management, which contributes to a more effective and efficient land use planning system. The policies of the PPS may be complemented by provincial plans or by locally-generated policies regarding matters of municipal interest. Provincial plans and municipal official plans provide a framework for comprehensive, integrated and long-term planning that supports and integrates the principles of strong communities, a clean and healthy environment and economic growth, for the long term.

The PPS states it is more than a set of individual policies and is intended to be read in its entirety and the relevant policies are to be applied to each situation. It instructs decision-makers applying the PPS to read all of the relevant policies as if they are specifically cross-referenced with each other. While specific policies sometimes refer to other policies for ease of use, these cross- references do not take away from the need to read the PPS as a whole.

An assessment of the woodlot with regard to its potential significance was undertaken using the MNR criteria for significant woodland. The assessment is presented in Table 15. The assessment found the woodlot is not scoped as potentially significant against any of the recommended MNR criteria for defining significant woodlands.

In municipalities such as Innisfil, which have an estimated 23% forest cover (From: North-South Environmental Inc. 2006. Innisfil Official Plan review, environmental background report. Report prepared for the Town of Innisfil. 48 pp + app.) provincial size criteria for significant woodlands recommends that woodlots larger than 20ha should be considered significant (MNR 2010. Natural Heritage Reference Manual, Second Edition). Since the subject woodland covered approximately 15ha when assessed during preparation of the Secondary Plan, the successional woodland would not be considered significant by provincial size criteria.

The Natural Heritage Reference Manual states in Section 7.3 with regard to identification of significant woodlands; “An initial comprehensive study cannot assess all woodland characteristics needed to determine significance (or in some cases resources may be unavailable to carry out the study). Some internal woodland characteristics (e.g., composition, diversity, age, structure or productivity) require site-level confirmation. Therefore, woodlands may be identified as a potential or candidate significant woodlands for the purposes of the PPS until appropriate detailed studies can be undertaken at a later planning stage (e.g., development application) to confirm their status”. As presented in Table 15 Azimuth applied the detailed field work done as part of the 2008 Master Environmental Report to assess if the woodlot would be meet the characteristics

recommended by MNR to define significant woodlands. Applying these characteristics we have confirmed that the woodlot lacks unique species composition, lacks vegetative communities of provincial ranking S1 – S2, lacks habitat for rare or uncommon species, lacks characteristics of an older woodland, lacks high productivity for economically valuable products, lacks educational/cultural/historic value, does not represent a sensitive ground water discharge area and will not provide a important linkage function post development. Therefore based on the recommended provincial criteria upon undertaking a detailed site specific assessment the woodlot would not be defined as significant.

7.0 CONCLUSIONS

The proposed development will not affect Provincially Significant Wetlands (PSW), Areas of Natural and Scientific Interest (ANSI), Valley Lands, Wildlife Habitat or Fish Habitat on or adjacent (i.e. within 120m) to the property and is in compliance with the Provincial Policy Statement, 2005 in regards to these features.

Further study is required to confirm that the proposed development will not impact avian Species at Risk identified during the screening process. This work should be completed in June of 2013. Wildlife in the area will continue to utilize the naturalized communities on the adjacent lands.

Installation and maintenance of silt fencing around the perimeter of the development limits may be required and monitored for the duration of construction activities to ensure that there is no sediment migration off-site.

Vegetation removal should occur outside of the sensitive timing window for breeding birds. For the subject property, the timing window would be from mid-May to early July, but is dependent upon seasonal variation.

It is recommended that a spring site visit be conducted, in season, to confirm the presence or absence of Barn Swallow, Bobolink and Eastern Meadowlark. If the species are determined to be present, a Section 17 (2) (c) Overall Benefit Permit under of the *Endangered Species Act*, 2007 may be required prior to site development.

Based on the aforementioned information there are a number of considerations in permitting the removal of the woodlot/wetland with compensating measures. These considerations are as follows:

1. Based on the environmental assessment completed as part of the secondary plan process, the woodlot lacks a diversity of species and habitat that support its designation as an ecologically significant woodlot. Indicators such as breeding bird diversity show the woodlot is functioning at a very low level with much fewer species than that found in comparably sized woodlots in Simcoe County.
2. Prior to the lands being taken out of agriculture for potential development and the subsequent years of succession growth the woodlot would not have met the 10ha criteria.
3. The placement of the proposed Webster Blvd. through the woodlot on the alignment currently established within the existing development to the north and shown in the Alcona South Secondary Plan will bisect the existing woodlot into two parcels less than 10 ha is size thereby removing the significant woodlands designation under the OP size criteria.
4. Development of the adjacent lands in accordance with municipal engineering standards will require agricultural surface runoff that currently drains from the upgradient lands through the woodlot to be piped to storm water ponds. This will significantly alter the amphibian habitat in the woodland and eliminate the source of surface water to the wetland and dug pond. Loss of surface runoff on these poorly drained soils in the wetland units would be expected to result in the vegetation composition changes to non-wetland vegetation comparable to the deciduous forest to the north which is beyond the influence of the intermittent diffuse surface flow.
5. The provincial guidelines for defining significant woodlands suggest that detailed field work should be completed at the development stage to confirm the landscape level analysis. The detailed work completed for the 2008 Master Environmental Report confirmed the woodlot lacks the any of the characteristics recommended by MNR to define significant woodlands as documented in Table 15. Therefore removing the significant woodland designation based on our assessment is consistent with the provincial policy guidelines.
6. Compensating measures are being proposed by the proponent that will provide a significant benefit to the community and protect Lake Simcoe water quality in accordance with the Lake Simcoe Protection Plan (i.e., flood protection for Belle Ewart, phosphorus reduction, riparian plantings on watercourses, channel improvements). The Greenland Compliance Assessment letter provides additional information on these proposed compensating measures.

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Legend:

Approx. Study Area

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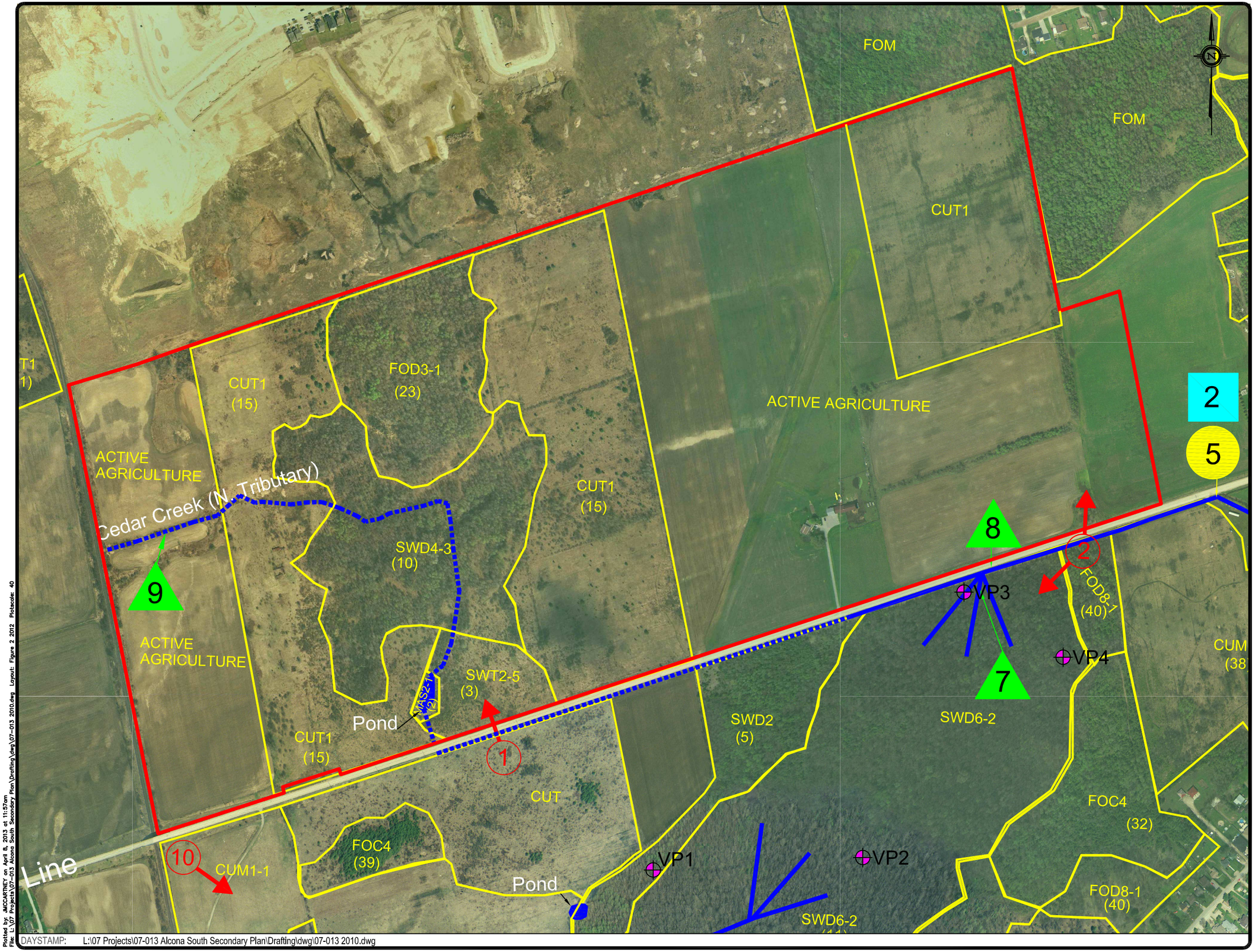
Regional Site Location

Date Issued:	March 2013
Created By:	JLM
Project No.	07-013
File Name:	07-013 2008 Figures

Alcona South Secondary Plan
Environmental Impact Study

Figure No.
1



LEGEND:

- Study Area
- Watercourses
- Electrofishing Locations
- Invertebrate Sampling Locations
- Cross Section Profile Locations
- Barrier to Fish Movement
- Amphibian Sampling Stations
- Vernal Pool Locations

Vegetation Communities

CUT1	Cultural Thicket
FOD3-1	Dry-Fresh Poplar Deciduous Forest Type
MAS2-1	Cattail Mineral Shallow Marsh Type
SWD4-3	White Birch Poplar Deciduous Swamp
SWT2-5	Red-Osier Mineral Thicket Swamp

75m 0 150m

HORIZONTAL SCALE 1:5,000

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Environmental Features

Alcona South Secondary Plan
Innisfil, ON

DATE ISSUED:	*March 2013*	Figure No. 2
CREATED BY:	*JLM*	
PROJECT NO.:	*07-013*	
REFERENCE:	*First Base Solutions*	

DAYSTAMP: L:\07 Projects\07-013 Alcona South Secondary Plan\Drafting\dwg\07-013 2010.dwg

Plotted by: JMCCARTNEY on April 8, 2013 at 11:57am
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Table 4. Results of the Fish Sampling Efforts in the Drainage Areas Within the Alcona South Secondary Plan Area

Azimuth Environmental 07-012

Field Staff: Matt Stuart, Nathan Koutroulides

Family	Scientific Name	Common Name	GRANK	SRANK	COSEWIC	MNR	Track	LSRCA Name: Belle Aire Creek (Watercourse #7)		LSRCA Name: Cedar Creek (Watercourse #6)
								MNR Name: Unknown Creek #4		MNR Name: Unnown Creek #5 [(2)]
								MNR Background Data [(1)]	Azimuth May 26, 2005	Azimuth May 26, 2005
CYPRINODONTIDAE	*Fundulus diaphanus*	**Banded Killifish**	G5	S5	NAR	NAR	N	-	-	X
CYPRINIDAE	*Notropis heterodon*	**Blackchin Shiner**	G5	S4	NAR	NAR	N	-	-	X
CYPRINIDAE	*Rhinichthys atratulus*	**Blacknose Dace**	G5	S5	-	-	N	-	X	-
CYPRINIDAE	*Pimephales notatus*	**Bluntnose Minnow**	G5	S5	NAR	NAR	N	X	X	X
GASTEROSTEIDAE	*Culaea inconstans*	**Brook Stickleback**	G5	S5	-	-	N	X	X	-
ICTALURIDAE	-	**Catfish sp.**	-	-	-	-	-	X	-	-
UMBRIDAE	*Umbra limi*	**Central Mudminnow**	G5	S5	-	-	N	X	-	-
CYPRINIDAE	*Luxilus cornutus*	**Common Shiner**	G5	S5	-	-	N		X	X
CYPRINIDAE	*Semotilus atromaculatus*	**Creek Chub**	G5	S5	-	-	N	X	X	X
CYPRINIDAE	*Notropis atherinoides*	**Emerald Shiner**	G5	S5	-	-	N	X	-	X
CYPRINIDAE	*Pimephales promelas*	**Fathead Minnow**	G5	S5	-	-	N	X	X	X
PERCIDAE	*Etheostoma exile*	**Iowa Darter**	G5	S5	-	-	N	-	-	X
CENTRARCHIDAE	*Micropterus salmoides*	**Largemouth Bass**	G5	S5	-	-	N	-	-	X
CYPRINIDAE	*Rhinichthys cataractae*	**Longnose Dace**	G5	S5	-	-	N	-	X	-
CYPRINIDAE	*Notropis volucellus*	**Mimic Shiner**	G5	S5	-	-	N	-	X	X
ESOCIDAE	*Esox lucius*	**Northern Pike**	G5	S5	-	-	N	-	-	X
CYPRINIDAE	*Phoxinus eos*	**Northern Redbelly Dace**	G5	S5	-	-	N	-	X	-
CENTRARCHIDAE	*Lepomis gibbosus*	**Pumpkinseed**	G5	S5	-	-	N	X	-	X
OSMERIDAE	*Osmerus mordax*	**Rainbow Smelt**	G5	S5	-	-	N	-	-	-
CENTRARCHIDAE	*Ambloplites rupestris*	**Rock Bass**	G5	S5	-	-	N	X	-	X
CYPRINIDAE	*Notropis stramineus*	**Sand Shiner**	G5	S4	-	-	N	X	-	-
CYPRINIDAE	*Notropis hudsonius*	**Spottail Shiner**	G5	S5	-	-	N	-	-	X
CATOSTOMIDAE	*Catostomus commersoni*	**White Sucker**	G5	S5	-	-	N	X	-	-

THERMAL REGIME			
	LSRCA	warmwater	In the absence of information, coldwater by default
	MNR	warmwater	warmwater
	Azimuth	warmwater	warmwater

[1] Background Data: obtained from MNR based on MNR Fish Collection Records, Huronia District, 1975.
[(2)] Sampled by MNR in 1975 but no fish caught. Has not been sampled by LSRCA.

Table 5: Results of the Aquatic Macroinvertebrate Sampling on Cedar Creek and Belle Aire Creek in the Alcona South Secondary Plan Area

Azimuth Environmental 07-013

Sampling Completed on June 1 and 28, 2005.

Assessment completed by S. Murphy

Raw taxa abundance for each site sampled.

		Cedar Creek						Belle Aire Creek								
	% Picked for 100-count	100	100	100	25	23	64	7	25	12	98	35	100	14	72	88
		Reach 1			Reach 2			Reach 1			Reach 2			Reach 3		
	Taxonomic Group	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**
	Amphipoda (Scuds)	4	2	5	4	0	1	11	13	7	52	64	80	3	10	11
*	Anisoptera (Dragonflies)	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
*	*Ceratopogonidae (No-see-ums)*	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	*Chironomidae (Midges)*	4	26	12	0	0	0	16	11	5	20	30	8	0	0	0
	Coelenterata (Hydras)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	Coleoptera (Beetles)	17	7	26	10	1	8	2	23	6	7	5	0	2	6	16
*	*Culicidae (Mosquitos)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	Decapoda (Crayfish)	0	0	0	0	0	0	0	0	0	5	1	3	0	0	0
*	**Ephemeroptera (Mayflies)**	2	15	4	0	0	0	15	72	3	2	4	0	1	5	0
	Gastropoda (Snails, limpets)	40	10	34	80	86	96	4	20	6	1	0	0	8	14	13
*	Hemiptera (True bugs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hirudinea (Leeches)	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	Isopoda (Sow bugs)	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0
	Lepidoptera (Aquatic Moths)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	Megaloptera (Fishflies, Alderflies)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Nematoda (Roundworms)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Oligochaeta (Aquatic Earthworms)	3	47	5	6	49	1	192	16	218	3	2	3	0	21	5
	Pelecypoda (Clams)	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
*	**Plecoptera (Stoneflies)**	16	0	3	0	0	0	1	11	0	7	0	3	92	38	26
*	*Simuliidae (Black Flies)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	*Tabanidae (Horse and deer flies)*	0	0	0	0	0	0	0	0	1	1	0	0	1	4	3
*	*Tipulidae (Crane flies)*	3	3	2	0	0	0	0	1	0	1	0	0	2	0	0
`	**Trichoptera (Caddisflies)**	8	4	6	1	1	1	2	2	0	0	2	3	4	9	8
	Ttrmbidiformes-Hydracarina (Mites)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Turbellaria (Flatworms)	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
*	Zygoptera (Damselflies)	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**101**	**114**	**97**	**101**	**138**	**107**	**244**	**169**	**248**	**106**	**112**	**102**	**113**	**108**	**82**

BOLDED = EPT
ITALICS - Order Diptera
* = predator

Estimated abundance for each site sampled based on % Sampled using Teaspoon Method.

		Cedar Creek						Belle Aire Creek								
		Reach 1			Reach 2			Reach 1			Reach 2			Reach 3		
	Taxonomic Group	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**
	Amphipoda (Scuds)	4	2	5	16	0	2	157	52	58	53	183	80	21	14	13
*	Anisoptera (Dragonflies)	0	0	0	0	0	0	14	0	0	0	0	1	0	0	0
*	*Ceratopogonidae (No-see-ums)*	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	*Chironomidae (Midges)*	4	26	12	0	0	0	229	44	42	20	86	8	0	0	0
	Coelenterata (Hydras)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	Coleoptera (Beetles)	17	7	26	40	4	13	29	92	50	7	14	0	14	8	18
*	*Culicidae (Mosquitos)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	Decapoda (Crayfish)	0	0	0	0	0	0	0	0	0	5	3	3	0	0	0
*	**Ephemeroptera (Mayflies)**	2	15	4	0	0	0	214	288	25	2	11	0	7	7	0
	Gastropoda (Snails, limpets)	40	10	34	320	374	150	57	80	50	1	0	0	57	19	15
*	Hemiptera (True bugs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hirudinea (Leeches)	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	Isopoda (Sow bugs)	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0
	Lepidoptera (Aquatic Moths)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	Megaloptera (Fishflies, Alderflies)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Nematoda (Roundworms)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Oligochaeta (Aquatic Earthworms)	3	47	5	24	213	2	2743	64	1817	3	6	3	0	29	6
	Pelecypoda (Clams)	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0
*	**Plecoptera (Stoneflies)**	16	0	3	0	0	0	14	44	0	7	0	3	657	53	30
*	*Simuliidae (Black Flies)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*	*Tabanidae (Horse and deer flies)*	0	0	0	0	0	0	0	0	8	1	0	0	7	6	3
*	*Tipulidae (Crane flies)*	3	3	2	0	0	0	0	4	0	1	0	0	14	0	0
	Trichoptera (Caddisflies)	8	4	6	4	4	2	29	8	0	0	6	3	29	13	9
	Ttrmbidiformes-Hydracarina (Mites)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Turbellaria (Flatworms)	1	0	0	0	0	0	0	0	17	0	0	0	0	0	0
*	Zygoptera (Damselflies)	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**101**	**114**	**97**	**404**	**600**	**167**	**3486**	**676**	**2067**	**108**	**320**	**102**	**807**	**150**	**93**

BOLDED = EPT
ITALICS - Order Diptera
* = predator

Mean percentage of taxonomic groups.

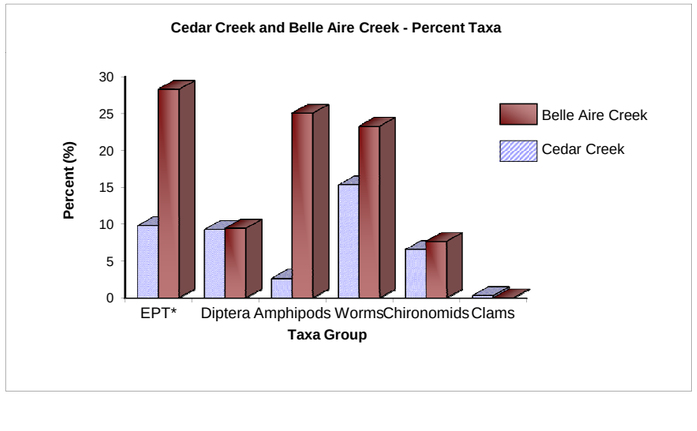
	Cedar Creek						Belle Aire Creek								
	Reach 1			Reach 2			Reach 1			Reach 2			Reach 3		
Taxa Group	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**	**Riffle (Stn1)**	**Pool (Stn 2)**	**Riffle (Stn 3)**
Abundance	101	114	97	404	600	167	3486	676	2067	108	320	102	807	150	93
Richness	13	8	9	5	5	5	9	9	8	11	8	8	8	9	7
% EPT	25.74	16.67	13.40	0.99	0.72	0.93	7.38	50.30	1.21	8.49	5.36	5.88	85.84	48.15	41.46
% Diptera	10.89	28.07	16.49	0.00	0.00	0.00	6.56	7.69	2.42	21.70	26.79	7.84	4.42	3.70	3.66
% Amphipods	3.96	1.75	5.15	3.96	0.00	0.93	4.51	7.69	2.82	49.06	57.14	78.43	2.65	9.26	13.41
% Worms	2.97	41.23	5.15	5.94	35.51	0.93	78.69	9.47	87.90	2.83	1.79	2.94	0.00	19.44	6.10
% Predators	42.57	44.74	48.45	9.90	0.72	7.48	14.34	69.82	6.05	47.17	35.71	14.71	86.73	49.07	54.88
% Chironomids	3.96	22.81	12.37	0.00	0.00	0.00	6.56	6.51	2.02	18.87	26.79	7.84	0.00	0.00	0.00
% Clams	0.99	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

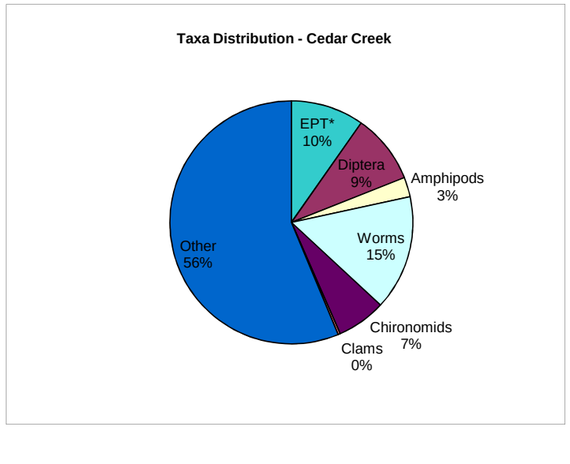
Diptera: True Flies included in Table 19 of Jones OBBN Protocol
Predators: Plecoptera, Odonata, Ephemeroptera, Hemiptera, Megaloptera, Neuroptera, Trichoptera, Coleoptera, Diptera
Source: Merritt, R.W., and K.W.Cummins, 1994.

Mean Calculations for each Watercourse

	Cedar Ck	Belle Aire Ck
Abundance	247	868
Richness	8	9
% Predators	26	42
% EPT*	10	28
% Diptera	9	9
% Amphipods	3	25
% Worms	15	23
% Chironomids	7	8
% Clams	0	0
% Other	56	6

* - from the taxa groups Ephemeroptera, Plecoptera, and Trichoptera (EPT)





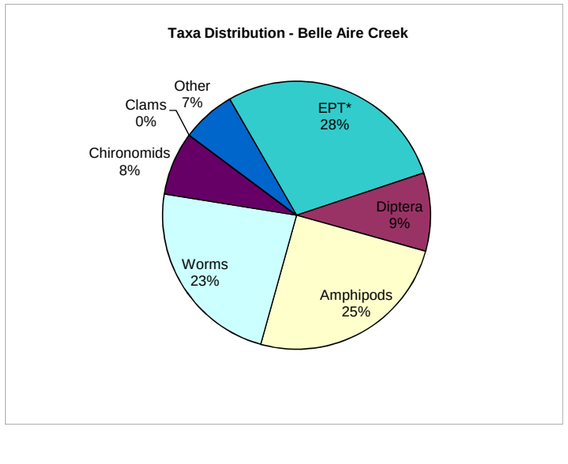


Table 6: Flow Data for Watercourses within the Alcona South Secondary Plan Area, North of 6th Line

Azimuth Environmental 07-013

Collected by M. Stuart, L. Juffermans, N. Koutroulides, S. Murphy

Site (Figure 2)	Waterbody Name	General Site Description	GPS Coordinates		Date Sampled by AEC	Avg. Wetted Channel Width (m)	Avg. Water Depth (m)	Avg. Flow (m/s)	Discharge (m3/s)	Discharge (L/s)
8	Cedar Creek (Watercourse #6)	Ditch on the south side of the 6th Line, DS where exits from woodlot			07-Jan-07	1.6	0.250	0.12	0.047	47.0
			17616260E	4905195N	02-Apr-07	1.4	0.120	0.22	0.036	36.3
9	Cedar Creek (Watercourse #6) - North Branch	~70m East of the CNR, north of 6th Line, 2m US small culvert tractor crossing in field	17615027E	4905186N	02-Apr-07	0.4	0.048	0.36	0.007	6.7

Table 7: Ecological Land Classification Vegetation Community Description - Alcona South Secondary Plan Area

Polygon Number	Community S	Community G	ELC Code	ELC Name	Description
			FO	**FOREST**	**Vegetation community with >60% tree cover**
			FOC	**CONIFEROUS FOREST**	**Vegetation community characterized by having coniferous trees comprising >75% of canopy cover.** The coniferous forest community type is found south of 6th Line, east of the CN rail line. The species list is similar to that describing the forested swamp communities, and, in fact the forest community becomes increasingly swampy in proximity to the Lake Simcoe shoreline.
32,33,39			**FOC4**	Fresh- Moist White Cedar Coniferous Forest Ecosite	Community dominate by Eastern White Cedar in the canopy. Occasional associate species include Balsam Polar, Trembling Aspen, White Spruce and Red Ash. Limited understorey is present throughout the communities and is limited primarily to the edges of the forest community. However, species that can be found within this shrub layer include young Trembling Aspen, Balsam Fir seedlings, Eastern White Cedar, Red-osier Dogwood, and Alternate-leaved Dogwood. Limited groundcover is also present throughout the community but includes species such as Eastern Helleboring, Bittersweet Nightshade, Riverbank Grape, Cattails, Swamp Red Currant, Herb Robert, Wild Basil, Virginia Creeper and a variety of fern, sedge and moss species.
			FOM	**MIXED FOREST**	**Vegetation community characterized by having both conifer trees and deciduous trees comprising >25% each of the canopy cover**. A small-forested unit located just south of 6th line, east of the CN Rail line represents the mixed forest community. This unit is part of a narrow strip of forested communities located adjacent to the rail line and many agricultural communities.
34	S5	G5Q	**FOM 7-2**	Fresh- Moist White Cedar – Hardwood Mixed Forest Type	Community composed of a variety of coniferous and deciduous tree species such as Trembling Aspen, American Elm, Balsam Poplar, Red Maple, White Birch, Eastern White Cedar, White Spruce, Eastern White Pine and Balsam Fir. Associate species include Large Tooth Aspen, Black Cherry, Red Oak, Sugar Maple, Basswood and Eastern Hemlock. Understorey is composed of similar species and is dominated by Eastern White Cedar, Balsam Poplar and Trembling Aspen. The following additional species are also found within the understorey, Alternate-leaved Dogwood, Wild Red Raspberry, Common Elder, High Bush Cranberry, Mountain Maple, Hobblebush, and Dog-strangling Vine. Groundcover includes species such as Enchanter's Nightshade, Partridgeberry, Poison Ivy, Sensitive Fern, and Tall Buttercup. Vernal pools may persist within community.
			FOD	**DECIDUOUS FOREST**	**Vegetation community characterized by having deciduous trees comprising >75% of canopy cover.** Both dry and moist upland deciduous forest communities exist within the study area. The drier upland vegetation is present as isolated farm woodlots in the western part of the study area, and as larger upland areas adjacent to larger treed swamp communities located to the north. The moist deciduous forest communities also occur as isolated agricultural woodlots (i.e. to the north) and as a part of larger natural vegetative communities.
43			**FOD2**	Dry- Fresh Oak – Maple – Hickory Deciduous Forest Ecosite	Tree species found within the canopy layer include Red oak, Eastern White Pine, White Ash, Red, Silver and Sugar Maple, White Spruce, American Beech, Eastern Hemlock, White and Yellow Birch, Balsam Fir. Associates include Ironwood, Basswood, Eastern White Cedar, Black Cherry. Undertorey includes species such as young Oak and Maple seedlings and saplings, Balsam Fir seedlings, Wild Red Raspberry, young Cherry, Alternative-leaved Dogwood, Staghorn Sumac and Hawthorn species. Groundcover found within these areas include Wild Rose, False Solomon's Seal, Goldenrod, Asters, Black-eyed Susan, Cinquefoil species, Poison Ivy, Heal-all, Canada Lily, grasses, sedges and Herb Robert.
23	S5	G5	**FOD 3-1**	Dry – Fresh Poplar Deciduous Forest Type	Community dominated by Trembling Aspen with White Elm and Ash associates. Species found within the shrub layer include Young poplar seedlings and saplings, Dogwoods, Choke Cherry and Prickly Gooseberry**.** The ground layer consists of species including self-heal, Woodland Strawberry, Woodland Agrimony and Virginia Creeper.
25,26	S5	G5	**FOD 5-2**	Dry – Fresh Sugar Maple – Beech Deciduous Forest Type	This unit represents a mature than the other forest communities on the north side of the 6th Line, and is a typical beech-maple sugar bush. Sugar Maple, American Beech and Trembling Aspen dominate the canopy. Other species found within this community include Red Oak, White Ash, Ironwood, Butternut, Eastern White Cedar, and Black Cherry. Species within the shrub layer include Young Beech and Maple seedlings and saplings, Wild Red Raspberry, young Cherry, and Alternative-leaved Dogwood. The ground layer consisted of species including Trout Lily, Wild Leeks, Zig-zag Goldenrod and Arrow-leaved Aster. Many ephemeral pools are present within this community in the springtime.

Polygon Number	Community S	Community G	ELC Code	ELC Name	Description
24			**FOD 6**	Fresh – Moist Sugar maple Deciduous Forest Ecosite	This community represents a younger, degraded community composed of species such as Sugar Maple, Silver Maple, Trembling Aspen and White Elm. Associates include Black Cherry, Choke Cherry and Common Apple. Species within the shrub layer include Young maple seedlings and saplings, Smooth Gooseberry and Swamp Red Current, Staghorn Sumac and Willows. The ground layer consists of disturbance-adapted ruderals such as garden geranium, Wild Carrot and Garlic Mustard.
27,28,29,30, 31,36,37,40, 42	S5	G5	**FOD8-1**	Fresh – Moist Poplar Deciduous Forest Type	Community dominated by Trembling Aspen in the canopy with Red Ash, Balsam Poplar and White Elm associates. Eastern White Cedar dominates sub-canopy. The understory layer consists of young Trembling Aspen, Red Ash, Eastern White Cedar and Buckthorn. Ground is covered with moss and is inhabited by species such as Poison Ivy, Bracken Fern, Canada Anemone and Dog-strangling Vine.
			CU	**CULTURAL**	Vegetation community originating from or maintained by anthropogenic influences and culturally based disturbances. Often contains a high proportion of non-native species.
					These communities have developed from historic use (i.e. pasture/farmland) that has been left to succeed into a more naturally vegetated state. The communities are at varying stages of succession.
			CUM	**Cultural Meadow**	**Vegetation community characterized by having <25% tree and shrub cover.**
14,38			**CUM1-1**	Dry-Moist Old Field Meadow Type	The occasional Trembling Aspen and White Elm can be found scatted throughout the community. Early successional grasses and forbs including Goldenrods, Wild Carrot and a variety of grass species are found throughout.
			CUT	**Cultural Thicket**	**Vegetation community characterized by having trees comprising <25% of canopy cover and shrubs comprising >25% of community.**
15,16,17,35, 41			**CUT1**	Mineral Cultural Thicket Ecosite	North of 6th Line: Few trees are present in this community but include species such as White Ash and Balsam Poplar. Shrub species include Willow and Hawthorn species. The ground layer consisted of species commonly found within early successional communities.
					South of 6th Line: Few trees are present in this community but include species such as Trembling Aspen, Balsam Poplar, Green Ash, Eastern White Cedar and White Elm. Understorey includes Apple, Scotch Pine, Choke Cherry, Willow, Red Cedar and Common Buckthorn. A pond exists within unit #16 adjacent to the wetland community that is approximately 3m deep and is surrounded by wetland vegetation including Willow, Dogwood and Reed Canary Grass. This pond likely provides habitat for fish.
			CUW	**Cultural Woodland**	**Vegetation community characterized by having trees comprising >35% and <60% of canopy cover.**
18,19,20,21			**CUW1**	Mineral Cultural Woodland Ecosite	North of 6th Line: It is a community that is slightly older than the Cultural Thicket seen above and can vary in its percentage of trees. Trees present include Poplar, White Elm, Sugar Maple and White Ash.
					South of 6th Line: This community consists of a scattering of trees such as Red Ash, Balsam Poplar, Willow, Manitoba Maple and Trembling Aspen. Choke Cherry and Staghorn Sumac were occasionally found within the understorey.
			CUP	**Cultural Plantation**	Deciduous or coniferous treed community in which the majority of the trees have been planted.
22			**CUP3**	Coniferous Plantation	This community is a type of forest that result from the historic planting of pine trees. There is often no shrub and very limited understory.
			SW	**SWAMP**	Vegetation community characterized by having tree or shrub cover comprising >25% of canopy cover. Dominated by hydrophytic shrub and tree species**.**
12			**SWM**	**Mixed Swamp**	**Vegetation community characterized by having both conifer trees and deciduous trees comprising >25% each of the canopy cover.**
					These forests are made up of mid-successional communities that likely represent second growth vegetation. MNR data (XXXX) indicate that the white cedar swamp communities in the south part of the study area are approximately 50 – 70 years of age. The community is dominated by Eastern White Cedar, but contains other co-dominant species and minor associates. Areas of dense cedar vegetation with little understory vegetation are interspersed with areas of mixed swamp species – dominant species vary. More open areas of the swamp community support wet-adapted species of herbs and ferns and abundant Bittersweet Nightshade.

Polygon Number	Community S	Community G	ELC Code	ELC Name	Description
13			**SWM4**	White Cedar Organic Mixed Swamp Ecosite	Community composed of a variety of deciduous and coniferous trees within the canopy layer including Black Ash, White Elm, Eastern White Cedar, Silver Maple and Red Maple. Common associate species include Red Ash, Black Ash, White Birch, Yellow Birch, Trembling Aspen, Balsam Poplar, Tamarack, and tree form Willow. The understorey layer consists of similar species but also includes species such as Common Elder, Blackberry and Virgin's Bower. Groundcover was composed of a variety of fern species including Sensitive Fern, *Carex* and *Equisetum* sp., Wood Nettle, Strawberry, Enchanter's Nightshade, Spotted Jewelweed and Riverbank Grape.
			SWD	**Deciduous Swamp**	**Vegetation community characterized by having deciduous trees comprising >75% of canopy cover.**
					Several deciduous swamp communities exist within the study area. North of the 6th Line exists a relatively young Poplar swamp. This swamp contains a number of ephemeral pools and due to this has limited understorey. The Silver Maple and a pocket of Ash-dominated swamp were found to be contiguous in large forested blocks with a diversity of interconnected community types located to the south of the 6th Line. These communities are dominated by Silver and Red Maple, Poplars and species of Red and Black Ash and also contain numerous ephemeral pools that persist into the growing season. The Town of Innisfil designates both of these deciduous swamp communities as Natural Environment Policy Areas, and the swamps south of the 6th Line are part of a Provincially Significant Wetland.
5,6			**SWD2**	Ash Mineral Deciduous Swamp Ecosite	Community dominated by a combination of Black and Red Ash within the canopy. Associate species include, American Elm, White Birch, Balsam Poplar, and Trembling Aspen. The understorey is composed of species including American Elm, Eastern White Cedar, Balsam Fir, Trembling Aspen and shrubs such as Highbush Cranberry and Common Buckthorn. Groundcover consists of species including a variety of ferns such as Sensitive and Marginal Woodfern, Virginia Creeper, and various Sedge species.
7			**SWD4**	Mineral Deciduous Swamp Ecosite	Vegetation community dominated by Trembling Aspen and Red Ash. White Elm and Black Ash associates are also found here. The occasional Butternut was also identified within this community. The understorey consists of Red Ash, Trembling Aspen, Balsam Poplar, Choke Cherry, Buckthorn, White Elm and Eastern White Cedar. Groundcover was composed of species such as Broadleaf Enchanter's Nightshade, and Poison Ivy.
8			**SWD4-1**	Willow Mineral Deciduous Swamp Type	Canopy dominated by Crack Willow. Manitoba Maple is present in the understorey and Reed Canary Grass and Spotted Jewelweed are found as a part of the groundcover layer.
9	S5	G?	**SWD4-2**	White Elm Mineral Deciduous Swamp Type	Swamp community dominated by White Elm with Black Ash associates. Understorey layer composed of shrub species such as Roundleaf Dogwood while groundcover is composed of species such as Willows, Reed Canary Grass and Spotted Jewelweed.
10	S5	G5	**SWD4-3**	White Birch – Poplar Mineral Deciduous Swamp Type	This young community is dominated by Trembling Aspen is almost a pure stand. Associates include Black and Red Ash, White Birch and Eastern White Cedar are found in this community. Due to the fast-growing nature there is a very sparse shrub canopy but includes species such as Red-osier Dogwood and various Willow Species. Groundcover is limited but includes Sedges, Ferns, Horsetail and mosses. Standing water is present within the community in the springtime.
11	S5	G4?	**SWD6-2**	Silver Maple Organic Deciduous Swamp Type	Canopy cover is dominated by Silver Maple with Red Ash and Balsam Poplar associates. Understorey consists of Silver Maple, White Elm and Black Ash. Groundcover consists of a variety of wetland species including Sensitive Fern, Spotted Jewelweed, Broadleaf Enchanter's Nightshade and other fern and grass species. This community has a limited shrub layer in addition to evidence of vernal pooling in the springtime.
			SWT	**Thicket Swamp**	**Vegetation community characterized by having trees comprising <25% of canopy cover and hydrophytic shrubs comprising >25% of community.**
					The study area contains several small thicket swamp communities dominated by variable mixtures of Red-osier Dogwood, shrub form willow species, Speckled Alder, Highbush Cranberry, and Wild Red Raspberry, among others. Invasive species such as Poplars and Buckthorn are also present.
					The thicket swamp, cattail dominated marsh and open water marsh are often intermixed in these communities and tend to form a mosaic of wetland habitats. The marsh/thicket communities are also connected to areas of forested swamp, particularly to the east of the CN rail line.
3,4	S5	G5	**SWT2-5**	Red-osier Mineral Thicket Swamp Type	North of 6th Line: Limited tree cover represented by sporadic occurrences of various species including Trembling Aspen, American Elm, standing dead deciduous trees and young Basswood. Dominated by shrubs including Red-osier Dogwood, Speckled Alder, and willow shrub species. Highbush Cranberry, European Buckthorn and Wild Red Raspberry are also found within this community. Groundcover includes wetland adapted grasses and occasional forb species.

Polygon Number	Community S	Community G	ELC Code	ELC Name	Description
					South of 6th Line: Manitoba Maple and White Elm are found scattered throughout the canopy covering approximately 10% of the area. Unit dominated by Roundleaf Dogwood and Willows. Groundcover includes species such as Reed Canary Grass, Spotted Jewelweed and various Goldenrod species.
			MA	**MARSH**	**Vegetation community characterized by having tree and shrub cover <25% each of the canopy cover and dominated by hydrophytic emergent macrophyte cover.**
					Three small areas of marsh community exist to the north of the 6th Line. A dug pond formerly utilized for agricultural purposes is located within a thicket swamp community holds water throughout the growing seasons. Two small meadow marsh communities exist to the north-west of this pond.
			MAM	**Meadow Marsh**	Represents the interface between wetland and terrestrial environments. Seasonal flooding occurs but does not persist into the summer. Species present are less tolerant of prolonged flooding.
1			**MAM2**	Mineral Meadow Marsh Ecosite	Composed of a variety of forb species including Cattail. Shrubs such as Red-osier Dogwood and various willow species are also present.
			MAS	**Shallow Marsh**	Standing and/or flowing water present for most of the growing season and water can be a depth of up to 2m. Species very tolerant of prolonged flooding.
2	S5	G5	**MAS2-1**	Cattail Mineral Shallow Marsh Type	This community consists of a man-made pond feature that has become vegetated. The pond is open (no vegetation in the center) but surrounded by cattails, willow and dogwood. The occasional wet adapted grasses and forbs are present.
				Riparian	Vegetation community located adjacent to with flowing water bodies. Seasonal and or periodic flooding may occur. A combination of wet-adapted and ruderal (weedy) vegetation typical of disturbed sites is also found in proximity to these study area watercourses. Composition and structure of riparian vegetation varies dependant upon land use conditions (i.e. watercourse is located adjacent to agricultural fields or forested habitat. Both situations are encountered within the study area..

Table 8: Plant Species Observations for Wetland Communities, Alcona South Secondary Plan Area

Azimuth Environmental 07-013
Observers: J. Broadfoot, B. Clayton, T. Etwell, L.Moran

			Wetland Communities[2]													Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	Scientific Name	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	G RANK	S RANK	COSEWIC	MNR	TRACK	
ACERACEAE	Acer negundo	Box Elder				X				X						G5	S5			N	
ACERACEAE	Acer rubrum	Red Maple										X		X	X	G5	S5			N	
ACERACEAE	Acer saccharinum	Silver Maple										X	X		X	G5	S5			N	
ACERACEAE	Acer saccharum	Sugar Maple										X				G5	S5			N	
ACERACEAE	Acer spicatum	Mountain Maple					X							X		G5	S5			N	
ALISMATACEAE	Alisma triviale	Northern Water-plantain		X												G5	S5			N	
ANACARDIACEAE	Rhus radicans	Poison Ivy					X		X				X	X		G5	S5			N	
APIACEAE	Cicuta maculata	Spotted Water-hemlock												X		G5	S5			N	
APIACEAE	Daucus carota	Wild Carrot				X										G?	SE5			N	
APIACEAE	Sium suave	Hemlock Water-parsnip									X		X			G5	S5			N	
ARACEAE	Arisaema triphyllum	Jack-in-the-pulpit					X						X	X		G5	S5			N	
ARALIACEAE	Aralia nudicaulis	Wild Sarsaparilla											X	X		G5	S5			N	
ASCLEPIADACEAE	**Asclepias exaltata**	**Poke Milkweed**											**X**			**G5**	**S4**			**N**	
ASCLEPIADACEAE	Asclepias incarnata	Swamp Milkweed									X	X		X		G5	S5			N	
ASCLEPIADACEAE	Cynanchum nigrum	Black Swallow-wort							X			X		X		G?	SE			N	
ASTERACEAE	Achillea millefolium	Yarrow										X				G5	S5			N	
ASTERACEAE	Arctium minus ssp. minus	Common Burdock								X						G?	SE5			N	
ASTERACEAE	Cirsium vulgare	Bull Thistle				X										G5	SE5			N	
ASTERACEAE	Erigeron philadelphicus	Philadelphia Fleabane				X	X			X						G5	S5			N	
ASTERACEAE	Eupatorium maculatum	Spotted Joe-pye Weed		X		X						X				G5	S5			N	
ASTERACEAE	Eupatorium perfoliatum	Common Boneset		X								X				G5	S5			N	
ASTERACEAE	Eupatorium rugosum	White Snakeroot					X									G5	S5			N	
ASTERACEAE	Euthamia graminifolia	Flat-top Fragrant-golden-rod		X	X					X						G5	S5			N	
ASTERACEAE	Heliopsis helianthoides	Ox-eye										X				G5	S5			N	
ASTERACEAE	Inula helenium	Elecampane Flower			X									X		G?	SE5			N	
ASTERACEAE	Prenanthes alba	White Rattlesnake-root										X				G5	S5			N	
ASTERACEAE	Solidago canadensis	Canada Goldenrod		X	X							X				G5	S5			N	
ASTERACEAE	Solidago gigantea	Smooth Goldenrod			X											G5	S5			N	
ASTERACEAE	Solidago ohioensis	Ohio Golderod												X		G4	S4			N	
ASTERACEAE	Solidago rugosa	Rough-leaf Goldenrod										X				G5	S5			N	
ASTERACEAE	Symphyotrichum lanceolatum	Panicled Aster		X	X					X						G5	S5			N	
ASTERACEAE	Symphyotrichum lateriflorum	Starved Aster			X							X				G5	S5			N	
ASTERACEAE	Symphyotrichum novae-angliae	New England Aster		X	X					X		X				G5	S5			N	
ASTERACEAE	Symphyotrichum puniceum	Swamp Aster		X	X											G5	S5			N	
ASTERACEAE	Taraxacum officinale	Brown-seed Dandelion										X				G5	SE5			N	
BALSAMINACEAE	Impatiens capensis	Spotted Jewel-weed		X		X				X	X		X	X	X	G5	S5			N	
BETULACEAE	Alnus incana	Speckled Alder		X								X				G5	S5			N	
BETULACEAE	Betula alleghaniensis	Yellow Birch													X	G5	S5			N	
BETULACEAE	Betula papyrifera	Paper Birch		X				X				X			X	G5	S5			N	
CAPRIFOLIACEAE	Sambucus canadensis	Common Elderberry										X		X	X	G5	S5			N	
CAPRIFOLIACEAE	Viburnum lentago	Nannyberry					X									G5	S5			N	
CAPRIFOLIACEAE	Viburnum trilobum	Highbush Cranberry		X			X					X	X			G5T5	S5			N	
CLUSIACEAE	Hypericum punctatum	Common St. John's-wort				X										G5	S5			N	

			Wetland Communities[2]													Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	Scientific Name	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	G RANK	S RANK	COSEWIC	MNR	TRACK	
CORNACEAE	Cornus amomum	Silky Dogwood										X				G5	S5			N	
CORNACEAE	Cornus rugosa	Roundleaf Dogwood					X			X						G5	S5			N	
CORNACEAE	Cornus stolonifera	Red-osier Dogwood	X	X								X				G5	S5			N	
CUCURBITACEAE	Echinocystis lobata	Wild Mock-cucumber								X				X		G5	S5			N	
CUPRESSACEAE	Thuja occidentalis	Eastern White Cedar		X			X	X	X			X		X	X	G5	S5			N	
CYPERACEAE	Carex bebbii	Bebb's Sedge				X				X		X	X			G5	S5			N	
CYPERACEAE	Carex digitalis	Slender Wood Sedge								X						G5	S4S5			N	
CYPERACEAE	Carex flava	Yellow Sedge							X							G5	S5			N	
CYPERACEAE	Carex gracillima	Graceful Sedge					X			X			X			G5	S5			N	
CYPERACEAE	Carex granularis	Meadow Sedge										X				G5	S5			N	
CYPERACEAE	Carex hyalinolepis	Shore-line Sedge		X												G4G5	S4			N	
CYPERACEAE	Carex intumescens	Bladder Sedge					X						X			G5	S5			N	
CYPERACEAE	Carex lupulina	Hop Sedge					X		X		X	X	X			G5	S5			N	
CYPERACEAE	Carex pedunculata	Longstalk Sedge				X										G5	S5			N	
CYPERACEAE	Carex retrorsa	Retrorse Sedge								X		X				G5	S5			N	
CYPERACEAE	Carex rosea	Rosy Sedge					X				X		X			G5	S5			N	
CYPERACEAE	Carex stipata	Stalk-grain Sedge				X	X			X	X		X			G5	S5			N	
CYPERACEAE	***Carex virescens***	***Ribbed Sedge***											***X***			***G5***	***S3***			***Y***	
CYPERACEAE	Carex vulpinoidea	Fox Sedge										X		X		G5	S5			N	
CYPERACEAE	Eleocharis obtusa	Blunt Spike-rush		X												G5	S5			N	
CYPERACEAE	Schoenoplectus acutus	Hard-stem Club-rush							X							G5	S5			N	
CYPERACEAE	Schoenoplectus tabernaemontani	Soft-stem Club-rush		X												G?	S5			N	
CYPERACEAE	Scirpus atrovirens	Dark-green Bulrush									X	X				G5?	S5			N	
DIPSACACEAE	Dipsacus fullonum	Fuller's Teasel				X										G?	SE5			N	
DRYOPTERIDACEAE	Athyrium filix-femina	Lady Fern					X							X		G5	S5			N	
DRYOPTERIDACEAE	Dryopteris cristata	Crested Shield-fern					X					X	X			G5	S5			N	
DRYOPTERIDACEAE	Dryopteris marginalis	Marginal Wood-fern					X				X		X	X		G5	S5			N	
DRYOPTERIDACEAE	Gymnocarpium dryopteris	Oak Fern												X		G5	S5			N	
DRYOPTERIDACEAE	Matteuccia struthiopteris	Ostrich Fern											X	X		G5	S5			N	
DRYOPTERIDACEAE	Onoclea sensibilis	Sensitive Fern					X					X	X	X	X	G5	S5			N	
EQUISETACEAE	Equisetum arvense	Field Horsetail										X				G5	S5			N	
EQUISETACEAE	Equisetum fluviatile	Water Horsetail										X				G5	S5			N	
EQUISETACEAE	**Equisetum palustre**	**Marsh Horsetail**					**X**				**X**		**X**	**X**		**G5**	**S5**			**N**	**X**
FABACEAE	Lotus corniculatus	Birds-foot Trefoil			X							X				G?	SE5			N	
FABACEAE	Medicago lupulina	Black Medic				X										G?	SE5			N	
GERANIACEAE	**Geranium maculatum**	**Wild Crane's-bill**					**X**									**G5**	**S5**			**N**	
GERANIACEAE	Geranium robertianum	Herb-robert					X							X		G5	SE5			N	
GROSSULARIACEAE	Ribes cynosbati	Prickly Gooseberry					X									G5	S5			N	
GROSSULARIACEAE	**Ribes glandulosum**	**Skunk Currant**											**X**			**G5**	**S5**			**N**	
GROSSULARIACEAE	**Ribes hirtellum**	**Smooth Gooseberry**											**X**			**G5**	**S5**			**N**	**X**
GROSSULARIACEAE	Ribes hudsonianum	Northern Black Currant									X					G5	S5			N	
GROSSULARIACEAE	Ribes triste	Swamp Red Currant												X		G5	S5			N	
JUNCACEAE	Juncus dudleyi	Dudley's Rush											X			G5	S5			N	
LAMIACEAE	Lycopus americanus	American Bugleweed					X		X		X		X			G5	S5			N	
LAMIACEAE	Lycopus uniflorus	Northern Bugleweed										X				G5	S5			N	
LAMIACEAE	Mentha arvensis	Corn Mint		X												G5	S5			N	

			Wetland Communities[2]													Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	Scientific Name	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	G RANK	S RANK	COSEWIC	MNR	TRACK	
LAMIACEAE	Mentha x piperita	Hybrid							X		X					HYB	SE4			N	
LAMIACEAE	Prunella vulgaris	Self-heal			X							X				G5	S5			N	
LAMIACEAE	Scutellaria lateriflora	Mad Dog Skullcap									X					G5	S5			N	
LILIACEAE	Maianthemum canadense	Wild-lily-of-the-valley		X										X		G5	S5			N	
OLEACEAE	Fraxinus americana	White Ash							X							G5	S5			N	
OLEACEAE	Fraxinus nigra	Black Ash										X			X	G5	S5			N	
OLEACEAE	Fraxinus pennsylvanica	Green Ash					X	X				X	X	X	X	G5	S5			N	
ONAGRACEAE	Circaea alpina	Small Enchanter's Nightshade					X		X					X		G5	S5			N	
ONAGRACEAE	Circaea lutetiana	Southern Broadleaf Enchanter's Nightshade										X		X		G5	S5			N	
ONAGRACEAE	Epilobium ciliatum	Hairy Willow-herb										X				G5	S5			N	
ONAGRACEAE	Epilobium hirsutum	Great-hairy Willow-herb									X					G?	SE5			N	
ORCHIDACEAE	Epipactis helleborine	Eastern Helleborine					X			X				X		G?	SE5			N	
PINACEAE	Larix laricina	American Larch										X			X	G5	S5			N	
PINACEAE	Pinus sylvestris	Scotch Pine										X				G?	SE5			N	
POACEAE	Calamagrostis canadensis	Canada Blue-joint		X						X			X			G5	S5			N	
POACEAE	Dactylis glomerata	Orchard Grass								X						G?	SE5			N	
POACEAE	**Deschampsia flexuosa**	**Crinkled Hairgrass**					**X**									**G5**	**S5**			**N**	
POACEAE	Festuca rubra	Red Fescue		X												G5	S5			N	
POACEAE	Glyceria striata	Fowl Manna-grass					X				X		X	X		G5	S5			N	
POACEAE	Phalaris arundinacea	Reed Canary Grass		X							X	X				G5	S5			N	
POACEAE	Phleum pratense	Meadow Timothy										X				G?	SE5			N	
POACEAE	Phragmites australis	Common Reed		X								X				G5	S5			N	
POACEAE	Poa pratensis	Kentucky Bluegrass							X							G5	S5			N	
POLYGONACEAE	Rumex crispus	Curly Dock								X						G?	SE5			N	
PYROLACEAE	Pyrola elliptica	Shinleaf										X				G5	S5			N	
RANUNCULACEAE	Anemone canadensis	Canada Anemone				X										G5	S5			N	
RANUNCULACEAE	Clematis virginiana	Virginia Virgin-bower					X					X	X	X	X	G5	S5			N	
RANUNCULACEAE	Coptis trifolia	Goldthread										X				G5	S5			N	
RANUNCULACEAE	Ranunculus abortivus	Kidney-leaved Buttercup					X						X			G5	S5			N	
RANUNCULACEAE	Ranunculus acris	Tall Butter-cup				X						X				G5	SE5			N	
RANUNCULACEAE	**Ranunculus pensylvanicus**	**Bristly Crowfoot**											**X**			**G5**	**S5**			**N**	
RHAMNACEAE	Rhamnus alnifolia	Alderleaf Buckthorn					X				X					G5	S5			N	
RHAMNACEAE	Rhamnus cathartica	Buckthorn					X		X	X			X			G?	SE5			N	
ROSACEAE	Agrimonia striata	Woodland Agrimony								X		X		X		G5	S4?			N	
ROSACEAE	Crataegus mollis	Downy Hawthorn								X						G5	S5			N	
ROSACEAE	Crataegus monogyna	English Hawthorn										X				G5	SE5			N	
ROSACEAE	Fragaria vesca	Woodland Strawberry										X			X	G5	S5			N	
ROSACEAE	Geum aleppicum	Yellow Avens							X							G5	S5			N	
ROSACEAE	Geum canadense	White Avens				X	X			X		X		X		G5	S5			N	
ROSACEAE	**Geum laciniatum**	**Rough Avens**										**X**				**G5**	**S4**			**N**	**X**
ROSACEAE	Malus pumila	Common Apple										X				G5	SE5			N	
ROSACEAE	Potentilla recta	Sulphur Cinquefoil				X				X		X				G?	SE5			N	
ROSACEAE	Prunus serotina	Wild Black Cherry												X		G5	S5			N	
ROSACEAE	Prunus virginiana	Choke Cherry							X							G5	S5			N	
ROSACEAE	Rubus allegheniensis	Allegheny Blackberry				X						X			X	G5	S5			N	

			Wetland Communities[2]													Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	**Scientific Name**	**Common Name**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**G RANK**	**S RANK**	**COSEWIC**	**MNR**	**TRACK**	
ROSACEAE	Rubus occidentalis	Black Raspberry					X							X		G5	S5			N	
ROSACEAE	Rubus pubescens	Catherinettes Berry					X					X	X	X		G5	S5			N	
RUBIACEAE	**Galium lanceolatum**	**Torrey's Wild Licorice**					**X**									**G5**	**S5**			**N**	
RUBIACEAE	Galium palustre	Marsh Bedstraw									X		X			G5	S5			N	
RUBIACEAE	Galium triflorum	Sweet-scent Bedstraw								X		X				G5	S5			N	
SALICACEAE	Populus balsamifera	Balsam Poplar					X					X	X	X	X	G5	S5			N	
SALICACEAE	Populus grandidentata	Large-tooth Aspen										X				G5	S5			N	
SALICACEAE	Populus tremuloides	Trembling Aspen						X	X			X		X	X	G5	S5			N	
SALICACEAE	Salix alba	White Willow		X	X											G5	SE4			N	
SALICACEAE	Salix fragilis	Crack Willow		X								X				G?	SE5			N	
SALICACEAE	Salix petiolaris	Meadow Willow		X								X				G5	S5			N	
SALICACEAE	Salix sp.	Willow	X																		
SAXIFRAGACEAE	Mitella nuda	Naked Bishop's-cap										X				G5	S5			N	
SOLANACEAE	Solanum dulcamara	Climbing Nightshade		X			X			X	X	X	X		X	G?	SE5			N	
THELYPTERIDACEAE	Thelypteris palustris	Marsh Fern			X							X	X	X		G5	S5			N	
TYPHACEAE	Typha angustifolia	Narrow-leaved Cattail	X	X												G5	SE5			N	
TYPHACEAE	Typha latifolia	Broad-leaf Cattail		X	X											G5	S5			N	
ULMACEAE	Ulmus americana	American Elm		X			X		X			X	X		X	G5?	S5			N	
URTICACEAE	Boehmeria cylindrica	False Nettle											X			G5	S5			N	
URTICACEAE	Laportea canadensis	Wood Nettle											X	X	X	G5	S5			N	
URTICACEAE	Urtica dioica	Stinging Nettle					X									G5	S5			N	
VERBENACEAE	Verbena hastata	Blue Vervain				X						X				G5	S5			N	
VIOLACEAE	Viola sp.	Violet										X									
VITACEAE	Parthenocissus vitacea	Virginia Creeper					X		X		X		X	X		G5	S5			N	
VITACEAE	Vitis riparia	Riverbank Grape				X			X			X	X	X	X	G5	S5			N	

[1] Nomenclature based on Ontario Ministry of Natural Resources (OMNR), Natural Heritage Information Centre (NHIC) database - http://nhic.mnr.gov.on.ca/MNR/nhic/species.cfm

[2] Refer to Figure 2b and associated table for ELC community codes and descriptions.

[3] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (http://nhic.mnr.gov.on.ca/nhic_.cfm). Provincially rare species (I.e. S1, S2 or S3 species) are in ***italicized bold*** print.

[4] Regional - From Lake Simcoe Environmental Management Strategy 2003. State of the Lake Simcoe Watershed. Regionally rare species are in **bold** print.

Yellow shadding represents units in study area north of 6th Line associated with the woodlot

Table 9a: Plant Species Observations for Upland Communities, Alcona South Secondary Plan Area

Highlighted Communities Occur within the Property Limits

Azimuth Environmental 07-013

Observers: J. Broadfoot, B. Clayton, T. Etwell, L.Moran

			Upland Communities[2]																												Other Communities (No ELC Code)	Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	Scientific Name	Common Name	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	Forested Hedgerows	G RANK	S RANK	COSE WIC	MNR	TRACK	
ACERACEAE	Acer negundo	Box Elder	X							X									X													X	G5	S5			N	
ACERACEAE	Acer platanoides	Norway Maple												X																				G?	SE5			N	
ACERACEAE	Acer rubrum	Red Maple											X																			X	X	G5	S5			N	
ACERACEAE	Acer saccharinum	Silver Maple											X																			X	X	G5	S5			N	
ACERACEAE	Acer saccharum	Sugar Maple					X	X						X	X					X		X				X			X			X	X	G5	S5			N	
ANACARDIACEAE	Rhus radicans	Poison Ivy										X				X		X		X	X		X			X			X			X	X	G5	S5			N	
ANACARDIACEAE	Rhus typhina	Staghorn Sumac	X		X								X																			X	X	G5	S5			N	
APIACEAE	Aegopodium podagraria	Goutweed	X																															G?	SE5			N	
APIACEAE	Cicuta maculata	Spotted Water-hemlock																			X													G5	S5			N	
APIACEAE	Daucus carota	Wild Carrot	X	X	X	X	X	X	X	X		X					X				X				X		X			X			X	G?	SE5			N	
APOCYNACEAE	Apocynum androsaemifolium	Spreading Dogbane		X					X											X						X			X					G5	S5			N	
AQUIFOLIACEAE	Ilex verticillata	Winterberry															X								X									G5	S5			N	
ARACEAE	Arisaema triphyllum	Jack-in-the-pulpit											X	X	X		X								X									G5	S5			N	
ARALIACEAE	Aralia nudicaulis	Wild Sarsaparilla																		X						X			X					G5	S5			N	
ARISTOLOCHIACEAE	Asarum canadense	Canada Wild-ginger										X																						G5	S5			N	
ASCLEPIADACEAE	**Asclepias exaltata**	**Poke Milkweed**																			**X**													**G5**	**S4**			**N**	
ASCLEPIADACEAE	Asclepias syriaca	Kansas Milkweed	X	X	X	X				X		X		X			X								X		X			X			X	G5	S5			N	
ASCLEPIADACEAE	Asclepias variegata	White Milkweed																				X												G5	SX			N	
ASCLEPIADACEAE	Cynanchum nigrum	Black Swallow-wort		X					X	X		X				X	X	X		X	X				X	X			X	X			X	G?	SE			N	
ASTERACEAE	Achillea millefolium	Yarrow		X			X	X				X																		X				G5	S5			N	
ASTERACEAE	Ambrosia artemisiifolia	Annual Ragweed	X																													X		G5	S5			N	
ASTERACEAE	Arctium minus ssp. minus	Common Burdock																		X						X			X				X	G?	SE5			N	
ASTERACEAE	Artemisia absinthium	Common Wormwood	X																															G?	SE3			N	
ASTERACEAE	Cichorium intybus	Chicory	X	X								X																		X			X	G?	SE5			N	
ASTERACEAE	Cirsium arvense	Crepping Thistle		X																										X				G?	SE5			N	
ASTERACEAE	Cirsium vulgare	Bull Thistle		X																										X				G5	SE5			N	
ASTERACEAE	Doellingeria umbellata	Flat-top White Aster		X																														G5	S5			N	
ASTERACEAE	Erigeron annuus	White-top Fleabane	X						X	X							X								X									G5	S5			N	
ASTERACEAE	Erigeron hyssopifolius	Daisy Fleabane										X	X																					G5	S5			N	
ASTERACEAE	Erigeron philadelphicus	Philadelphia Fleabane								X				X		X							X										X	G5	S5			N	
ASTERACEAE	Erigeron strigosus	Daisy Fleabane	X						X																									G5	S5			N	
ASTERACEAE	Eupatorium maculatum	Spotted Joe-pye Weed				X																												G5	S5			N	
ASTERACEAE	Eupatorium perfoliatum	Common Boneset				X						X																						G5	S5			N	
ASTERACEAE	Eupatorium rugosum	White Snakeroot		X																														G5	S5			N	
ASTERACEAE	Eurybia macrophylla	Large-leaf Wood-aster		X																														G5	S5			N	
ASTERACEAE	Euthamia graminifolia	Flat-top Fragrant-golden-rod	X	X	X	X			X	X				X	X														X					G5	S5			N	
ASTERACEAE	Heliopsis helianthoides	Ox-eye	X	X	X		X	X		X		X									X								X					G5	S5			N	
ASTERACEAE	Hieracium pilosella	Mouseear															X		X	X	X								X					G?	SE5			N	
ASTERACEAE	Hieracium praealtum	King Devil																					X											G?	SE1			N	
ASTERACEAE	Inula helenium	Elecampane Flower		X		X	X	X								X			X				X											G?	SE5			N	
ASTERACEAE	**Packera paupercula**	**Balsam Ragweed**		**X**																														**G5**	**S5**			**N**	**X**
ASTERACEAE	Prenanthes alba	White Rattlesnake-root					X					X		X	X																			G5	S5			N	

			Upland Communities[2]																													Other Communities (No ELC Code)	Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	Scientific Name	Common Name	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	Forested Hedgerows	G RANK	S RANK	COSEWIC	MNR	TRACK	
ASTERACEAE	Rudbeckia hirta	Black-eyed Susan		X			X	X				X																			X		G5	S5			N	
ASTERACEAE	Solidago sp.	Goldenrod																													X							
ASTERACEAE	Solidago canadensis	Canada Goldenrod	X	X	X	X	X	X	X	X		X	X	X	X												X			X			X	G5	S5			N	
ASTERACEAE	Solidago flexicaulis	Broad-leaved Goldenrod					X							X	X																			G5	S5			N	
ASTERACEAE	Solidago gigantea	Smooth Goldenrod	X	X						X																							X	G5	S5			N	
ASTERACEAE	Solidago nemoralis	Field Goldenrod		X																													X	G5	S5			N	
ASTERACEAE	Solidago rugosa	Rough-leaf Goldenrod		X			X																											G5	S5			N	
ASTERACEAE	Sonchus asper	Spiny-leaf Sowthistle																															X	G?	SE5			N	
ASTERACEAE	Sonchus oleraceus	Common Sowthistle		X									X																				X	G?	SE5			N	
ASTERACEAE	Symphyotrichum sp.	Aster																													X	X	X	G5	S5			N	
ASTERACEAE	**Symphyotrichum laeve**	**Smooth Aster**				**X**						**X**																						**G5**	**S5**			**N**	**X**
ASTERACEAE	Symphyotrichum lanceolatum	Panicled Aster	X	X	X	X			X	X				X																				G5	S5			N	
ASTERACEAE	Symphyotrichum lateriflorum	Starved Aster	X	X			X					X	X	X																			X	G5	S5			N	
ASTERACEAE	Symphyotrichum novae-angliae	New England Aster		X	X	X	X	X	X	X		X	X	X	X											X			X				X	G5	S5			N	
ASTERACEAE	Symphyotrichum pilosum	White Heath Aster		X																														G5	S5			N	
ASTERACEAE	Symphyotrichum puniceum	Swamp Aster				X																												G5	S5			N	
ASTERACEAE	Symphyotrichum urophyllum	Arrow-leaved Aster		X			X	X						X	X																		X	G4	S4			N	
ASTERACEAE	Taraxacum officinale	Brown-seed Dandelion					X	X		X		X		X	X		X		X	X	X		X		X	X			X				G5	SE5			N	
ASTERACEAE	Tragopogon pratensis	Meadow Goat's-beard		X								X																						G?	SE5			N	
ASTERACEAE	Tussilago farfara	Colt's Foot	X																														X	G?	SE5			N	
BALSAMINACEAE	Impatiens capensis	Spotted Jewel-weed				X			X			X				X				X			X						X					G5	S5			N	
BERBERIDACEAE	Caulophyllum thalictroides													X																				G4G5	S5			N	
BETULACEAE	Betula alleghaniensis	Yellow Birch																					X									X		G5	S5			N	
BETULACEAE	Betula papyrifera	Paper Birch												X	X																X	X		G5	S5			N	
BETULACEAE	Ostrya virginiana	Eastern Hop-hornbeam												X	X					X						X			X			X		G5	S5			N	
BORAGINACEAE	Echium vulgare	Common Viper's-bugloss	X	X	X							X																		X				G?	SE5			N	
BRASSICACEAE	Alliaria petiolata	Garlic Mustard											X																					G?	SE5			N	
BRASSICACEAE	**Arabis hirsuta**	**Hairy Rock-cress**																		**X**									X					**G5**	**S5**			**N**	
BRASSICACEAE	Cardamine diphylla	Two-leaf Toothwort												X																				G5	S5			N	
BRASSICACEAE	Lepidium campestre	Field Pepper-grass							X																									G?	SE5			N	
CAPRIFOLIACEAE	Diervilla lonicera	Northern Bush-honeysuckle								X																								G5	S5			N	
CAPRIFOLIACEAE	Lonicera canadensis	American Fly-honeysuckle										X																						G5	S5			N	
CAPRIFOLIACEAE	Lonicera tatarica	Tartarian Honeysuckle			X	X				X		X				X	X			X						X			X					G?	SE5			N	
CAPRIFOLIACEAE	Viburnum acerifolium	Maple-leaf Viburnum																	X															G5	S5			N	
CAPRIFOLIACEAE	Viburnum lantana	Wayfaring-tree																					X											G?	SE2			N	
CAPRIFOLIACEAE	Viburnum trilobum	Highbush Cranberry				X				X		X								X			X			X			X						S5			N	
CARYOPHYLLACEAE	Saponaria officinalis	Bouncing-bet		X																													X	G?	SE5			N	
CARYOPHYLLACEAE	Silene vulgaris	Maiden's Tears	X									X																						G?	SE5			N	
CLUSIACEAE	Hypericum perforatum	A St. John's-wort	X	X																														G?	SE5			N	
CLUSIACEAE	Hypericum punctatum	Common St. John's-wort	X		X	X	X	X		X		X					X		X	X	X				X	X			X					G5	S5			N	
CORNACEAE	Cornus alternifolia	Alternate-leaf Dogwood					X							X	X		X		X	X	X	X			X	X		X	X			X		G5	S5			N	
CORNACEAE	Cornus amomum	Silky Dogwood		X																X			X			X			X					G5	S5			N	
CORNACEAE	Cornus foemina	Stiff Dogwood				X								X																				G5	S5			N	

			Upland Communities[2]																												Other Communities (No ELC Code)	Global and Provincial Conservation Ranking[3]					Regionally Rare Species[4]
FAMILY[1]	Scientific Name	Common Name	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	Forested Hedgerows	G RANK	S RANK	COSEWIC	MNR	TRACK	
CORNACEAE	Cornus rugosa	Roundleaf Dogwood	X		X	X	X	X		X		X		X	X	X	X		X				X	X	X								G5	S5			N	
CORNACEAE	Cornus stolonifera	Red-osier Dogwood		X		X	X	X				X												X				X					X	G5	S5			N	
CUPRESSACEAE	Juniperus virginiana	Eastern Red Cedar		X								X																					X	G5	S5			N	
CUPRESSACEAE	Thuja occidentalis	Eastern White Cedar		X	X							X					X		X	X	X	X	X		X	X		X	X	X	X	X		G5	S5			N	
CYPERACEAE	Carex bebbii	Bebb's Sedge				X				X									X															G5	S5			N	
CYPERACEAE	Carex blanda	Woodland Sedge															X																	G5?	S5			N	
CYPERACEAE	Carex digitalis	Slender Wood Sedge				X												X	X															G5	S4S5			N	
CYPERACEAE	**Carex eburnea**	**Ebony Sedge**												**X**																				**G5**	**S5**			**N**	**X**
CYPERACEAE	**Carex echinata**	**Little Prickly Sedge**				**X**								**X**																				**G5**	**S5**			**N**	**X**
CYPERACEAE	Carex flava	Yellow Sedge		X		X																												G5	S5			N	
CYPERACEAE	Carex gracillima	Graceful Sedge		X	X	X										X			X	X	X		X						X				G5	S5			N	
CYPERACEAE	Carex granularis	Meadow Sedge		X																														G5	S5			N	
CYPERACEAE	Carex hystericina	Porcupine Sedge	X			X																												G5	S5			N	
CYPERACEAE	Carex lacustris	Lake-bank Sedge																					X											G5	S5			N	
CYPERACEAE	Carex lupulina	Hop Sedge				X										X							X											G5	S5			N	
CYPERACEAE	Carex pedunculata	Longstalk Sedge			X																X													G5	S5			N	
CYPERACEAE	Carex retrorsa	Retrorse Sedge																		X			X						X					G5	S5			N	
CYPERACEAE	Carex rosea	Rosy Sedge										X				X				X			X						X					G5	S5			N	
CYPERACEAE	Carex stipata	Stalk-grain Sedge		X		X				X						X	X						X											G5	S5			N	
CYPERACEAE	Carex vulpinoidea	Fox Sedge	X	X		X											X		X															G5	S5			N	
CYPERACEAE	Schoenoplectus acutus	Hard-stem Club-rush																																G5	S5			N	
CYPERACEAE	Schoenoplectus tabernaemontani	Soft-stem Club-rush	X																															G?	S5			N	
CYPERACEAE	Scirpus atrovirens	Dark-green Bulrush			X	X											X																	G5?	S5			N	
CYPERACEAE	Scirpus cyperinus	Cottongrass Bulrush																			X													G5	S5			N	
CYPERACEAE	Scirpus pendulus	Rufous Bulrush		X																	X													G5	S5			N	
DENNSTAEDTIACEAE	Pteridium aquilinum	Bracken Fern			X							X					X			X					X	X		X					X	G5	S5			N	
DIPSACACEAE	Dipsacus fullonum	Fuller's Teasel	X	X		X																											X	G?	SE5			N	
DRYOPTERIDACEAE	Dryopteris cristata	Crested Shield-fern										X																						G5	S5			N	
DRYOPTERIDACEAE	Dryopteris marginalis	Marginal Wood-fern										X				X				X			X						X					G5	S5			N	
DRYOPTERIDACEAE	Onoclea sensibilis	Sensitive Fern										X		X	X								X											G5	S5			N	
DRYOPTERIDACEAE	Polystichum acrostichoides	Christmas Fern												X	X																			G5	S5			N	
EQUISETACEAE	Equisetum fluviatile	Water Horsetail																	X															G5	S5			N	
EQUISETACEAE	Equisetum hyemale	Scouring Rush					X																											G5	S5			N	
EQUISETACEAE	**Equisetum palustre**	**Marsh Horsetail**		X																**X**									**X**					**G5**	**S5**			**N**	**X**
EQUISETACEAE	**Equisetum pratense**	**Meadow Horsetail**	**X**				**X**												**X**		**X**	**X**												**G5**	**S5**			**N**	**X**
FABACEAE	Coronilla varia	Common Crown-vetch																															X	G?	SE5			N	
FABACEAE	**Desmodium paniculatum**	**Narrow- leaf Tick Trefoil**										**X**																						**G5**	**S4**			**N**	**X**
FABACEAE	Lotus corniculatus	Birds-foot Trefoil	X	X								X																						G?	SE5			N	
FABACEAE	Medicago lupulina	Black Medic		X								X																					X	G?	SE5			N	
FABACEAE	Medicago sativa	Alfalfa		X					X																									G?	SE5			N	
FABACEAE	Melilotus alba	White Sweet Clover	X	X			X	X																									X	G5	SE5			N	
FABACEAE	Melilotus altissima	Tall Yellow Sweetclover																	X															G?	SE1			N	
FABACEAE	Melilotus officinalis	Yellow Sweetclover	X																															G?	SE5			N	
FABACEAE	Trifolium arvense	Rabbit-foot Clover								X																								G?	SE4			N	

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			14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	Forested Hedgerows	G RANK	S RANK	COSEWIC	MNR	TRACK	
FABACEAE	Trifolium aureum	Yellow Clover	x	x																														G?	SE5			N	
FABACEAE	Trifolium campestre	Low Hop Clover	x																															G?	SE5			N	
FABACEAE	Trifolium pratense	Red Clover	x		x		x	x				x					x		x		x				x									G?	SE5			N	
FABACEAE	Trifolium repens	White Clover								x																								G?	SE5			N	
FABACEAE	Vicia cracca	Tufted Vetch	x		x	x						x					x		x															G?	SE5			N	
FAGACEAE	Fagus grandifolia	American Beech												x	x																	x		G5	S4			N	
FAGACEAE	Quercus rubra	Northern Red Oak												x	x																	x		G5	S5			N	
GENTIANACEAE	Centaurium erythraea	Common Centaury		x																														G?	SE3			N	
GERANIACEAE	**Geranium maculatum**	**Wild Crane's-bill**								**x**											**x**													**G5**	**S5**			**N**	
GERANIACEAE	Geranium robertianum	Herb-robert											x							x						x		x	x			x	x	G5	SE5			N	
GROSSULARIACEAE	Ribes cynosbati	Prickly Gooseberry					x					x		x	x																			G5	S5			N	
GROSSULARIACEAE	**Ribes hirtellum**	**Smooth Gooseberry**																		**x**									**x**					**G5**	**S5**			**N**	**X**
GROSSULARIACEAE	Ribes hudsonianum	Northern Black Currant														x																		G5	S5			N	
GROSSULARIACEAE	Ribes triste	Swamp Red Currant										x	x				x											x						G5	S5			N	
HYDROPHYLLACEAE	Hydrophyllum virginianum	John's Cabbage					x																											G5	S5			N	
IRIDACEAE	Iris versicolor	Blueflag	x																															G5	S5			N	
IRIDACEAE	Sisyrinchium montanum	Strict Blue-eyed-grass		x																														G5	S5			N	
JUGLANDACEAE	***Juglans cinerea***	***Butternut***												***x***																				***G3G***	***S3?***	***END***	***EN***	***Y***	
JUNCACEAE	Juncus dudleyi	Dudley's Rush				x																												G5	S5			N	
JUNCACEAE	Juncus filiformis	Thread Rush		x																														G5	S4S5			N	
JUNCACEAE	Juncus greenei	Greene's Rush															x																	G5	S3			Y	
JUNCACEAE	Juncus sp.	Rush		x																																			
JUNCACEAE	Juncus tenuis	Path Rush																																G5	S5			N	
LAMIACEAE	Clinopodium vulgare	Field Basil								x		x									x							x						G5	S5			N	
LAMIACEAE	Glechoma hederacea	Ground Ivy								x																								G?	SE5			N	
LAMIACEAE	Lycopus americanus	American Bugleweed				x	x									x																		G5	S5			N	
LAMIACEAE	Mentha arvensis	Corn Mint																		x									x					G5	S5			N	
LAMIACEAE	Mentha x piperita	Hybrid														x							x											HYB	SE4			N	
LAMIACEAE	Monarda fistulosa	Wild Bergamot Bee-balm			x																x													G5	S5			N	
LAMIACEAE	Nepeta cataria	Catnip																															x	G?	SE5			N	
LAMIACEAE	Prunella vulgaris	Self-heal		x		x	x	x				x					x		x						x				x		x			G5	S5			N	
LILIACEAE	Allium tricoccum	Small White Leek												x	x																			G5	S5			N	
LILIACEAE	Clintonia borealis	Blue Bead-lily																		x									x					G5	S5			N	
LILIACEAE	Erythronium americanum	Yellow Trout-lily					x	x						x	x																			G5	S5			N	
LILIACEAE	Maianthemum canadense	Wild-lily-of-the-valley												x	x					x						x			x					G5	S5			N	
LILIACEAE	Maianthemum racemosum																															X		G5	S5			N	
LILIACEAE	Trillium grandiflorum	White Trillium												x	x																			G5	S5			N	
LYTHRACEAE	Lythrum salicaria	Purple Loosestrife																																G5	SE5			N	
NYCTAGINACEAE	Mirabilis nyctaginea	Wild Four-o'clock								x																								G5	S4			N	
OLEACEAE	Fraxinus americana	White Ash		x			x	x				x		x	x		x								x						x	x		G5	S5			N	
OLEACEAE	Fraxinus nigra	Black Ash														x		x					x									x		G5	S5			N	
OLEACEAE	Fraxinus pennsylvanica	Green Ash												x	x	x			x	x	x		x			x		x	x					G5	S5			N	
OLEACEAE	Syringa vulgaris	Common Lilac																			x													G?	SE5			N	
ONAGRACEAE	Circaea alpina	Small Enchanter's Nightshade																x	x	x			x			x			x					G5	S5			N	

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ONAGRACEAE	Circaea lutetiana	Southern Broadleaf Enchanter's Nightshade								x		x		x	x		x								x									G5	S5			N	
ONAGRACEAE	Epilobium hirsutum	Great-hairy Willow-herb				x																												G?	SE5			N	
ONAGRACEAE	Epilobium leptophyllum	Linear-leaved Willow-herb		x																x						x			x					G5	S5			N	
ONAGRACEAE	Epilobium parviflorum	Small-flower Willow-herb				x																												G?	SE4			N	
ONAGRACEAE	Oenothera biennis	Common Evening-primrose	x	x			x	x																										G5	S5			N	
ONAGRACEAE	**Oenothera oakesiana**	**Evening Primrose**																																**Q**	**S4?**			**N**	
ORCHIDACEAE	Cypripedium parviflorum	Yellow Lady's-slipper																					x												S5			N	
ORCHIDACEAE	Epipactis helleborine	Eastern Helleborine					x	x				x		x	x			x	x	x	x	x						x	x					G?	SE5			N	
PINACEAE	Abies balsamea	Balsam Fir															x						x		x			x				x		G5	S5			N	
PINACEAE	Picea glauca	White Spruce		x																x						x		x	x			x		G5	S5			N	
PINACEAE	**Pinus resinosa**	**Red Pine**									x																							**G5**	**S5**			**N**	**X**
PINACEAE	Pinus strobus	Eastern White Pine										x																				x		G5	S5			N	
PINACEAE	Pinus sylvestris	Scotch Pine			x							x																						G?	SE5			N	
PINACEAE	Tsuga canadensis	Eastern Hemlock																														X		G5	S5			N	
PLANTAGINACEAE	Plantago lanceolata	English Plantain		x		x						x									x													G5	SE5			N	
PLANTAGINACEAE	Plantago major	Nipple-seed Plantain	x	x	x																									x				G5	SE5			N	
POACEAE	Agropyron cristatum	Crested Wheatgrass																																G5	SE2			N	
POACEAE	Agrostis gigantea	Black Bentgrass										x																							SE5			N	
POACEAE	Agrostis stolonifera	Spreading Bentgrass																																G5	S5			N	
POACEAE	Bromus inermis	Awnless Brome		x	x				x	x		x		x			x									x							x	G5	S5			N	
POACEAE	Calamagrostis canadensis	Canada Blue-joint																		x									x					G5	S5			N	
POACEAE	Crypsis schoenoides	Swamp Timothy				x																												G?	SE1			N	
POACEAE	Dactylis glomerata	Orchard Grass				x	x	x				x					x				x													G?	SE5			N	
POACEAE	**Deschampsia flexuosa**	**Crinkled Hairgrass**																		**x**									**x**					**G5**	**S5**			**N**	
POACEAE	Echinochloa crusgalli	Barnyard Grass				x																												G?	SE5			N	
POACEAE	Elymus repens	Creeping Wild-rye										x																						G5	SE5			N	
POACEAE	Festuca pratensis	Meadow Fescue	x	x														x																G5	SE5			N	
POACEAE	Festuca rubra	Red Fescue		x		x																												G5	S5			N	
POACEAE	Glyceria striata	Fowl Manna-grass				x										x				x			x						x					G5	S5			N	
POACEAE	Panicum acuminatum	Panic Grass																	x															G5	S5			N	
POACEAE	Panicum capillare	Old Witch Panic-grass																			x													G5	S5			N	
POACEAE	**Panicum latifolium**	**Broad-leaf Witchgrass**		**x**																														**G5**	**S4**			**N**	**X**
POACEAE	Phalaris arundinacea	Reed Canary Grass	x	x		x			x																									G5	S5			N	
POACEAE	Phleum pratense	Meadow Timothy	x	x	x	x	x	x	x			x								x														G?	SE5			N	
POACEAE	Phragmites australis	Common Reed								x																								G5	S5			N	
POACEAE	Poa compressa	Canada Bluegrass	x	x																x														G?	SE5			N	
POACEAE	Poa palustris	Fowl Bluegrass				x			x																									G5	S5			N	
POACEAE	Poa pratensis	Kentucky Bluegrass	x			x	x	x				x								x		x		x									x	G5	S5			N	
POLYGONACEAE	Rumex acetosella	Sheep Sorrel		x																														G?	SE5			N	
POLYGONACEAE	Rumex crispus	Curly Dock		x		x																								x			x	G?	SE5			N	
PYROLACEAE	Pyrola elliptica	Shinleaf										x		x																				G5	S5			N	
RANUNCULACEAE	Actaea pachypoda	White Baneberry												x	x					x									x					G5	S5			N	

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RANUNCULACEAE	Actaea rubra	Red Baneberry												X																				G5	S5			N	
RANUNCULACEAE	Anemone acutiloba	Liverleaf												X																				G5	S5			N	
RANUNCULACEAE	Anemone canadensis	Canada Anemone																X		X	X					X			X				X	G5	S5			N	
RANUNCULACEAE	Anemone quinquefolia	Wood Anemone																	X				X											G5	S5			N	
RANUNCULACEAE	Anemone virginiana	Virginia Anemone			X	X											X				X													G5	S5			N	
RANUNCULACEAE	Clematis virginiana	Virginia Virgin-bower																		X						X			X					G5	S5			N	
RANUNCULACEAE	Ranunculus abortivus	Kidney-leaved Buttercup												X		X																		G5	S5			N	
RANUNCULACEAE	Ranunculus acris	Tall Butter-cup		X								X					X	X	X	X	X		X		X	X			X	X				G5	SE5			N	
RHAMNACEAE	Rhamnus cathartica	Buckthorn		X			X	X		X						X	X	X	X	X			X		X	X			X	X				G?	SE5			N	
ROSACEAE	Agrimonia gryposepala	Tall Hairy Groovebur										X							X															G5	S5			N	
ROSACEAE	Agrimonia pubescens	Soft Groovebur																		X						X			X					G5	S4			N	
ROSACEAE	Agrimonia striata	Woodland Agrimony			X							X		X	X						X													G5	S4?			N	
ROSACEAE	Aruncus dioicus	Common Goatsbeard			X																													G5	SE1			N	
ROSACEAE	Crataegus crus-galli	Cockspur Hawthorn				X																												G5	S5			N	
ROSACEAE	Crataegus monogyna	English Hawthorn		X																														G5	SE5			N	
ROSACEAE	Crataegus punctata	Dotted Hawthorn					X																										X	G5	S5			N	
ROSACEAE	Crataegus sp.	Hawthorn																														X	X						
ROSACEAE	Fragaria vesca	Woodland Strawberry	X	X			X	X				X		X	X	X	X		X	X					X	X			X	X			X	G5	S5			N	
ROSACEAE	Fragaria virginiana	Virginia Strawberry			X																X		X											G5	S5			N	
ROSACEAE	Geum aleppicum	Yellow Avens										X								X			X						X					G5	S5			N	
ROSACEAE	Geum canadense	White Avens				X	X							X	X		X	X		X			X						X				X	G5	S5			N	
ROSACEAE	**Geum laciniatum**	**Rough Avens**										**X**																						**G5**	**S4**			**N**	**X**
ROSACEAE	Geum macrophyllum	Large-leaved Avens	X															X																G5	S5			N	
ROSACEAE	Malus pumila	Common Apple		X	X	X	X	X				X	X	X																X			X	G5	SE5			N	
ROSACEAE	Potentilla argentea	Silvery Cinquefoil	X																															G?	SE5			N	
ROSACEAE	Potentilla canadensis	Canada Cinquefoil					X	X																										G5	SU			N	
ROSACEAE	Potentilla norvegica	Norwegian Cinquefoil		X																														G5	S5			N	
ROSACEAE	Potentilla recta	Sulphur Cinquefoil	X		X	X																												G?	SE5			N	
ROSACEAE	**Potentilla simplex**	**Old-field Cinquefoil**		**X**								**X**																						**G5**	**S5**			**N**	**X**
ROSACEAE	Prunus pensylvanica	Pin Cherry	X																															G5	S5			N	
ROSACEAE	Prunus serotina	Wild Black Cherry			X							X	X	X	X					X	X		X			X			X			X		G5	S5			N	
ROSACEAE	Prunus virginiana	Choke Cherry		X	X		X	X	X			X	X	X	X		X	X	X											X			X	G5	S5			N	
ROSACEAE	Rubus allegheniensis	Allegheny Blackberry	X																															G5	S5			N	
ROSACEAE	Rubus idaeus	Common Red Raspberry							X			X		X	X																		X	G5	S5			N	
ROSACEAE	Rubus occidentalis	Black Raspberry	X						X									X		X									X					G5	S5			N	
ROSACEAE	Rubus pubescens	Catherinettes Berry																		X			X						X					G5	S5			N	
ROSACEAE	Sorbus aucuparia	European Mountain-ash	X									X	X							X	X								X				X	G5	SE4			N	
ROSACEAE	Spiraea alba	Narrow-leaved Meadow-sweet								X																								G5	S5			N	
RUBIACEAE	Galium asprellum	Rough Bedstraw																		X									X					G5	S5			N	
RUBIACEAE	Galium concinnum	Shining Bedstraw															X																	G5	S1			Y	
RUBIACEAE	Galium mollugo	Great Hedge Bedstraw			X																													G?	SE5			N	
RUBIACEAE	Galium palustre	Marsh Bedstraw										X				X				X									X					G5	S5			N	
RUBIACEAE	Galium triflorum	Sweet-scent Bedstraw			X											X																		G5	S5			N	
SALICACEAE	Populus balsamifera	Balsam Poplar	X	X						X				X	X			X	X	X		X	X			X		X	X		X			G5	S5			N	

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SALICACEAE	Populus tremuloides	Trembling Aspen		X			X	X				X		X	X	X	X	X	X	X	X	X			X	X		X	X	X	X			G5	S5			N	
SALICACEAE	Salix alba	White Willow		X																														G5	SE4			N	
SALICACEAE	Salix bebbiana	Bebb's Willow	X																															G5	S5			N	
SALICACEAE	Salix discolor	Pussy Willow	X																															G5	S5			N	
SALICACEAE	Salix eriocephala	Heart-leaved Willow	X							X											X													G5	S5			N	
SALICACEAE	Salix exigua	Sandbar Willow	X																															G5	S5			N	
SALICACEAE	Salix petiolaris	Meadow Willow								X		X									X													G5	S5			N	
SALICACEAE	**Salix serissima**	**Autumn Willow**				**X**						**X**																						**G4**	**S4**			**N**	**X**
SALICACEAE	Salix sp.	Willow											X																										
SCROPHULARIACEAE	Linaria vulgaris	Butter-and-eggs	X	X	X																								X				X	G?	SE5			N	
SCROPHULARIACEA	**Penstemon digitalis**	**Foxglove Beardtongue**																		**X**									**X**					**G5**	**S4**			**N**	
SCROPHULARIACEAE	Verbascum blattaria	White Moth Mullein	X																															G?	SE5			N	
SCROPHULARIACEAE	Verbascum thapsus	Great Mullein	X	X								X																	X				X	G?	SE5			N	
SCROPHULARIACEAE	Veronica americana	American Speedwell				X																												G5	S5			N	
SMILACACEAE	Smilax herbacea	Smooth Herbaceous Greenbrier										X																						G5	S4			N	
SOLANACEAE	Solanum dulcamara	Climbing Nightshade														X				X			X			X		X	X				X	G?	SE5			N	
THELYPTERIDACEAE	**Thelypteris noveboracensis**	**New York Fern**																			**X**													**G5**	**S4S5**			**N**	
TILIACEAE	Tilia americana	American Basswood		X			X	X				X		X	X																X		X	G5	S5			N	
TYPHACEAE	Typha angustifolia	Narrow-leaved Cattail				X																												G5	SE5			N	
ULMACEAE	Ulmus americana	American Elm		X			X	X	X			X	X			X				X			X						X	X	X		X	G5?	S5			N	
URTICACEAE	Laportea canadensis	Wood Nettle												X	X																			G5	S5			N	
URTICACEAE	Urtica dioica	Stinging Nettle				X																	X											G5	S5			N	
VALERIANACEAE	Valeriana officinalis	Common Valerian				X																												G?	SE3			N	
VIOLACEAE	Viola pubescens	Downy Yellow Violet										X																						G5	S5			N	
VITACEAE	Parthenocissus vitacea	Virginia Creeper	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			X	G5	S5			N	
VITACEAE	Vitis riparia	Riverbank Grape	X	X		X			X	X		X	X	X	X	X	X		X	X	X		X		X	X		X	X	X			X	G5	S5			N	

[1] Nomenclature based on Ontario Ministry of Natural Resources (OMNR), Natural Heritage Information Centre (NHIC) database - http://nhic.mnr.gov.on.ca/MNR/nhic/species.cfm

[2] Refer to Figure 2 and associated table for ELC community codes and descriptions.

[3] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (http://nhic.mnr.gov.on.ca/nhic_.cfm). Provincially rare species (I.e. S1, S2 or S3 species) are in ***italicized bold*** print.

[4] Regional - From Lake Simcoe Environmental Management Strategy 2003. State of the Lake Simcoe Watershed. Regionally rare species are in **bold** print.

Yellow shadding represents units in study area north of 6th Line associated with the woodlot

Table 9b Cultural Thicket Vegetation Community in North-East Corner Surveyed August 18 2011

Family	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Track	LRSCA
Aceraceae	*Acer negundo*	Box Elder	G5	S5			N	
Anacardiaceae	*Toxicodendron radicans*	Poison Ivy	G5T5	S5			N	
Apiaceae	*Daucus carota*	Wild Carrot	GNR	SNA			N	
Asclepiadaceae	*Asclepias syriaca*	Kansas Milkweed	G5	S5			N	
Asteraceae	*Euthamia graminifolia*	Flat-top Fragrant-golden-rod	G5	S5			N	
Asteraceae	*Onopordum acanthium*	Scotch Cotton-thistle	GNR	SNA			N	
Asteraceae	*Rudbeckia hirta*	Black-eyed Susan	G5	S5			N	
ASTERACEAE	*Solidago canadensis*		G5T5	S5			N	
Asteraceae	*Solidago rugosa*	Rough-leaf Goldenrod	G5	S5			N	
Asteraceae	*Symphyotrichum lanceolatum*	Panicled Aster	G5T5	S5			N	X
Asteraceae	*Taraxacum officinale*	Common Dandelion	G5	SNA			N	
Betulaceae	*Betula papyrifera*	Paper Birch	G5	S5			N	
Clusiaceae	*Hypericum punctatum*	Common St. John's-wort	G5	S5			N	X
Cornaceae	*Cornus sericea*	Red-osier Dogwood	G5	S5			N	
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar	G5	S5			N	
Fabaceae	*Melilotus albus*	White Sweet Clover	G5	SNA			N	
Fabaceae	*Trifolium campestre*	Low Hop Clover	GNR	SNA			N	
Fabaceae	*Vicia cracca*	Tufted Vetch	GNR	SNA			N	
Juncaceae	*Juncus tenuis*	Path Rush	G5	S5			N	
Lamiaceae	*Prunella vulgaris*	Self-heal	G5T5	S5			N	
Oleaceae	*Fraxinus pennsylvanica*	Green Ash	G5	S5			N	
Onagraceae	*Epilobium coloratum*	Purple-leaf Willow-herb	G5	S5			N	X
Pinaceae	*Pinus sylvestris*	Scotch Pine	GNR	SNA			N	
Poaceae	*Bromus arvensis*	Field Brome	GNR	SNA			N	
Poaceae	*Phleum pratense*	Meadow Timothy	GNR	SNA			N	
Poaceae	*Poa compressa*	Canada Bluegrass	GNR	SNA			N	
Polygonaceae	*Rumex crispus*	Curly Dock	GNR	SNA			N	
Rhamnaceae	*Rhamnus cathartica*	Buckthorn	GNR	SNA			N	
Rosaceae	*Fragaria virginiana*	Virginia Strawberry	G5	S5			N	
Rosaceae	*Potentilla recta*	Sulphur Cinquefoil	GNR	SNA			N	

Table 9b Cultural Thicket Vegetation Community in North-East Corner Surveyed August 18 2011

Family	Scientific Name	English Name	G-rank	S-rank	COSEWIC Status	SARO Status	Track	LRSCA
Rubiaceae	*Galium aparine*	Catchweed Bedstraw	G5	S5			N	
Salicaceae	*Populus balsamifera*	Balsam Poplar	G5	S5			N	
Salicaceae	*Populus tremuloides*	Trembling Aspen	G5	S5			N	
Salicaceae	*Salix bebbiana*	Bebb's Willow	G5	S5			N	
Salicaceae	*Salix discolor*	Pussy Willow	G5	S5			N	
Salicaceae	*Salix petiolaris*	Meadow Willow	G5	S5			N	
Vitaceae	*Parthenocissus vitacea*	Virginia Creeper	G5	S5			N	
Vitaceae	*Vitis riparia*	Riverbank Grape	G5	S5			N	

Table 11: Results of the Breeding Bird Surveys, Alcona South Secondary Plan Area

Azimuth Environmental 07-013
Observers: J. Broadfoot, T. Etwell, L. Moran

Species in **BOLD** indicate area sensitive species (OMNR 2000)

			Conservation Ranking[1]					June 21, 2005[2]	June 22, 2005[3]	June 7, 2005[4]	June 14, 2006[5]	
FAMILY	**Scientific Name**	**Common Name**	**GRANK**	**SRANK**	**COSEWIC**	**MNR**	**TRACK**	1	2	3	3(West)	3 (East)
ANATIDAE	*Anas platyrhynchos*	Mallard	G5	S5B,SZN			N	X[7]				
BOMBYCILLIDAE	*Bombycilla cedrorum*	Cedar Waxwing	G5	S5B,SZN			N	X		X		
CARDINALIDAE	*Cardinalis cardinalis*	Northern Cardinal	G5	S5			N	S	S	S		
CARDINALIDAE	*Passerina cyanea*	Indigo Bunting	G5	S5B,SZN			N	S	S		S	
CARDINALIDAE	*Pheucticus ludovicianus*	Rose-breasted Grosbeak	G5	S5B,SZN			N	X			S	
CATHARTIDAE	*Cathartes aura*	Turkey Vulture	G5	S4B,SZN			N					X
CHARADRIIDAE	*Charadrius vociferus*	Killdeer	G5	S5B,SZN			N				X	
COLUMBIDAE	*Zenaida macroura*	Mourning Dove	G5	S5B,SZN			N		S	X		
CORVIDAE	*Corvus brachyrhynchos*	American Crow	G5	S5B,SZN			N	X	S	S	X	
CORVIDAE	*Cyanocitta cristata*	Blue Jay	G5	S5			N	S	S	S	X	
CUCULIDAE	*Coccyzus erythropthalmus*	Black-billed Cuckoo	G5	S4B,SZN			N	S		S		
EMBERIZIDAE	*Melospiza melodia*	Song Sparrow	G5	S5B,SZN			N	S, A	S	S	S	
EMBERIZIDAE	***Passerculus sandwichensis***	**Savannah Sparrow**	**G5**	**S5B,SZN**			**N**	**S**				
EMBERIZIDAE	*Spizella pallida*	Clay-colored Sparrow	G5	S4B,SZN			N			S		
EMBERIZIDAE	*Spizella passerina*	Chipping Sparrow	G5	S5B,SZN			N	S			S	X
EMBERIZIDAE	*Spizella pusilla*	Field Sparrow	G5	S5B,SZN			N	S		S		S
EMBERIZIDAE	*Zonotrichia albicollis*	White-throated Sparrow	G5	S5B,SZN			N		S			S
FALCONIDAE	*Falco sparverius*	American Kestrel	G5	S5B,SZN			N					X
FRINGILLIDAE	*Carduelis tristis*	American Goldfinch	G5	S5B,SZN			N	S		S	X	
HIRUNDINIDAE	*Hirundo rustica*	Barn Swallow	G5	S5B,SZN	THR	THR	N	X	X	X	X	
HIRUNDINIDAE	*Tachycineta bicolor*	Tree Swallow	G5	S5B,SZN			N	X		X		
ICTERIDAE	*Agelaius phoeniceus*	Red-winged Blackbird	G5	S5B,SZN			N	S		S	X	
ICTERIDAE	*Dolichonyx oryzivorus*	Bobolink	G5	S4B,SZN	THR	THR	N	S				S
ICTERIDAE	*Icterus galbula*	Baltimore Oriole	G5	S5B,SZN			N			X		X
ICTERIDAE	*Molothrus ater*	Brown-headed Cowbird	G5	S5B,SZN			N	S		S		S
ICTERIDAE	*Quiscalus quiscula*	Common Grackle	G5	S5B,SZN			N	X	X			
ICTERIDAE	*Sturnella magna*	Eastern Meadowlark	G5	S5B,SZN	THR	THR	N	X				
MIMIDAE	*Dumetella carolinensis*	Gray Catbird	G5	S5B,SZN			N	S		S	S	
PARIDAE	*Poecile atricapillus*	Black-capped Chickadee	G5	S5			N	S	X	S	S	
PARULIDAE	*Dendroica coronata*	Yellow-rumped Warbler	G5	S5B,SZN			N		S			
PARULIDAE	***Dendroica magnolia***	**Magnolia Warbler**	**G5**	**S5B,SZN**			**N**			**S**		
PARULIDAE	*Dendroica petechia*	Yellow Warbler	G5	S5B,SZN			N	S		S	S	
PARULIDAE	*Geothlypis trichas*	Common Yellowthroat	G5	S5B,SZN			N	S		S	S	
PARULIDAE	***Mniotilta varia***	**Black-and-white Warbler**	**G5**	**S5B,SZN**			**N**		**S**	**S**		
PARULIDAE	*Oporornis philadelphia*	Mourning Warbler	G5	S5B,SZN			N				S	
PARULIDAE	***Seiurus aurocapillus***	**Ovenbird**	**G5**	**S5B,SZN**			**N**	**S**	**S**			**S**
PARULIDAE	*Seiurus noveboracensis*	Northern Waterthrush	G5	S5B,SZN			N		S			
PARULIDAE	*Setophaga ruticilla*	American Redstart	G5	S5B,SZN			N			S		S
PASSERIDAE	*Passer domesticus*	House Sparrow	G5	SE			N					X
PHASIANIDAE	*Meleagris gallopavo*	Wild Turkey	G5	S4			N	X				
PICIDAE	*Colaptes auratus*	Northern Flicker	G5	S5B,SZN			N	S				X
PICIDAE	***Dryocopus pileatus***	**Pileated Woodpecker**	**G5**	**S4S5**			**N**	**X**			**S**	
PICIDAE	*Picoides pubescens*	Downy Woodpecker	G5	S5			N		X			
PICIDAE	***Picoides villosus***	**Hairy Woodpecker**	**G5**	**S5**			**N**	**X**			**X**	
STURNIDAE	*Sturnus vulgaris*	European Starling	G5	SE			N			X		
TROGLODYTIDAE	*Troglodytes aedon*	House Wren	G5	S5B,SZN			N	S		S	S	S
TROGLODYTIDAE	***Troglodytes troglodytes***	**Winter Wren**	**G5**	**S5B,SZN**			**N**		**S**			
TURDIDAE	***Catharus fuscescens***	**Veery**	**G5**	**S4B,SZN**			**N**	**S**	**S**	**S**		**S**
TURDIDAE	*Hylocichla mustelina*	Wood Thrush	G5	S5B,SZN			N	S	S		S	
TURDIDAE	*Turdus migratorius*	American Robin	G5	S5B,SZN			N	S	S	S	S	

			Conservation Ranking[1]					June 21, 2005[2]	June 22, 2005[3]	June 7, 2005[4]	June 14, 2006[5]	
FAMILY	**Scientific Name**	**Common Name**	**GRANK**	**SRANK**	**COSEWIC**	**MNR**	**TRACK**	1	2	3	3(West)	3 (East)
TYRANNIDAE	*Contopus virens*	Eastern Wood-pewee	G5	S5B,SZN			N		S		S	
TYRANNIDAE	*Empidonax alnorum*	Alder Flycatcher	G5	S5B,SZN			N	S		S		S
TYRANNIDAE	***Empidonax minimus***	**Least Flycatcher**	**G5**	**S5B,SZN**			**N**			**S**		
TYRANNIDAE	*Empidonax traillii*	Willow Flycatcher	G5	S5B,SZN			N					S
TYRANNIDAE	*Myiarchus crinitus*	Great Crested Flycatcher	G5	S5B,SZN			N	S	S	S	S	
TYRANNIDAE	*Sayornis phoebe*	Eastern Phoebe	G5	S5B,SZN			N	S			S	
TYRANNIDAE	*Tyrannus tyrannus*	Eastern Kingbird	G5	S5B,SZN			N	X		X		X
VIREONIDAE	*Vireo olivaceus*	Red-eyed Vireo	G5	S5B,SZN			N		S	S	S	

[1] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (http://nhic.mnr.gov.on.ca/nhic_.cfm)

[2] Weather: Temperature +10 C, Wind W Beaufort Wind Scale 1, Cloud Cover 50%, Precipitation NIL, Search Time 05:20hr to 08:15hr

[3] Weather: Temperature +15 C, Wind NE Beaufort Wind Scale 4-5, Cloud Cover 25%, Precipitation NIL, Search Time 05:35hr to 09:00hr

[4] Weather: Temperature +12 C, Wind W Beaufort Wind Scale 1, Cloud Cover 20%, Precipitation NIL, Search Time 05:30hr to 07:00hr

[5] Weather: Temperature +10 C, Beaufort Wind Scale 1, Cloud Cover Nil, Precipitation NIL, Search Time 05:15hr to 08:30hr

[6] Breeding Bird Evidence Codes: X - Species observed; S - Singing male (Possible Breeding), A - Agitated behaviour or axiety calls from male (Possible Breeding)

Table 12: Results of the Spring Breeding Anuran Amphibian Surveys (call code levels by species) Azimuth Environmental 07-013

Observers: L. Brosseau, B. Clayton, T. Etwell, L. Moran

			Species						
Date	**Sampling Station Number (Refer to Figure 2)**	**Start Time (pm)**	**Wood Frog (Rana sylvatica)[1]**	**Spring Peeper (Pseudacris crucifer)[1]**	**Chorus Frog (Pseudacris triseriata)[1]**	**American Toad (Bufo americanus)[1]**	**Green Frog (Rana clamitans)[1]**	**Gray Treefrog (Hyla versicolor)[1]**	**Nothing Heard**
29-Apr-05	1	9:30	1[2](1)[3]	3	2(10)	1(2)			
04-May-05	1	8:30		3	1(2)				
04-May-05	2	8:30	1(1)		3		1(1)		
04-May-05	10	8:45			1(10)				
13-Jun-05	2	8:30						1(3)	
13-Jun-05	1	9:50						3	
13-Jun-05	10	10:01						1(3)	
12-Apr-06	2 [4]	9:00	1(3)	3	2(10)				
12-Apr-06	2	9:05		3					
12-Apr-06	10	9:10	1(2)	3	2(8)				
28-Apr-06	1	9:30		3	2(4)				
03-May-06	1	11:15		3	1(2)				

[1] Global Rank (Grank) = G5, Provincial Rank (Srank) = S5 according to Ontario Ministry of Natural Resources Natural Heritage Information Centre

[2] Call Code Levels: 0 = none heard, 1 = males could be individually counted, 2 = calls overlap but numbers could be estimated, 3 = overlapping calls, not possible to estimate numbers involved in chorus.

[3] Number in brackets indicates the number of individuals heard (estimate)

[4] Calls heard north of 6th Line

Weather Conditions

Date	**Air Temperature (^{o}C)**	**Wind (Beaufort/Direction)**	**Cloud Cover**	**Precipitation**
29-Apr-05	5	North/1	Unknown	None
04-May-05	10	NE/1	Unknown	None
13-Jun-05	18	Nil	100%	light rain
12-Apr-06	11	1	100%	light rain
28-Apr-06	11	1	None	None
03-May-06	10	1	None	None

Table 14: Species at Risk Habitat Summary

Common Name	Species Name	MNR	Key Habitats Used By Species[1]	Initial Assessment
Restricted Species	*Not Applicable*	END	Broadly Speaking, this species is associated with hardwood deciduous vegetation units	No upland hardwood habitat on-site to provide potential habitat.
Spotted Turtle	*Clemys guttata*	END	Marsh, swamp, fen (poor fen), vernal pools, open areas of sand or fine gravel, rock-barren. ESA Protection: Species protection only	Property lacks permanent standing or pooled water in proximity to areas of sand or fine gravel for nesting. No suitable potential habitat present on-site.
Barn Swallow	*Hirundo rustica*	THR	Ledges and walls of man-made structures such as buildings, barns, boathouses Cliffs or caves ESA Protection: Species and general habitat protection	Presence or absence of the species should be confirmed during breeding bird surveys in June 2013.
Black Tern	*Chlidonias niger*	SC	Colony ESA Protection: N/A	No shallow marshes on-site to provide habitat.
Blanding's Turtle	*Enydoidea blandingii*	THR	Fen (poor fens), marsh, swamp Open areas of sand or fine gravel Rock-barren ESA Protection: Species protection only	Property lacks permaent standing or pooled water in proximity to areas of sand or fine gravel for nesting. No suitable potential habitat present on-site.
Bobolink	*Dolichonyx oryzivorus*	THR	Large old fields and meadows, tall grasslands, hayfields ESA Protection: Species and general habitat protection	Breeding pairs were identified within the area. Marginal habitat exists within cultural thicket communities. Presence or absence of the species should be confirmed during breeding bird surveys in June 2013.
Butternut	*Juglans cinerea*	END	Forests (Known to occur in Southern edges of Parry Sound MNR District) ESA Protection: Species protection only	No Butternut identified in the study area.
Chimney Swift	*Chaetura pelagica*	THR	Man-made structures such as chimneys Hollow trees or cavities in old growth or mature forests ESA Protection: Species and general habitat protection	No structures or old growth forest on site to provide potential habitat.
Red-Headed Woodpecker	*Melanerpes erythrocephalus*	SC	Oak and Beech Forests, graasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemetaries, beaver ponds and burns (COSEWIC, 2007#). ESA Protection: N/A	Woodlot lacks mature trees with cavity opportunities for nesting, species not expected to utilize woodlot for potential habitat.
Eastern Meadowlark	*Sturnella magna*	THR	Grasslands, pastures, agricultural fields, old fields, meadows; often overgrown with shrubs Can also use golf courses and sand dunes ESA Protection: Species and general habitat protection	Breeding pairs were identified within the area. Marginal habitat exists within cultural thicket communities. Presence or absence of the species should be confirmed during breeding bird surveys in June 2013.
Henslow's Sparrow	*Ammodramus henslowii*	END	Nests in large, open, usually moist to wet, often flat fields with a high graminoid to forb/shrub ratio. Vegetation must be dense and over 30cm in height ESA Protection: Species protection only	No suitable habitat within the woodlot or succesional areas adjacent to woodlot.

Table 14: Species at Risk Habitat Summary

Common Name	Species Name	MNR	Key Habitats Used By Species[1]	Initial Assessment
Least Bittern	*Ixobrychus exilis*	THR	Marsh (cattail) ESA Protection: Species protection only	No suitable habitat within the woodlot or succesional areas adjacent to woodlot.

1. Habitat as outlined within the Species at Risk in MNR's Parry Sound District Excel file version 3, updated as of May 10, 2012, Royal Ontario Museum website files (http://www.rom.on.ca/ontario/risk.php), or Species Specific COSEWIC Reports referenced in this document.

Table 15. Significant Woodland assessment, Sleeping Lion property, Alcona South Secondary Plan, Town of Innisfil , 2012.

CRITERIA[1]	STANDARDS	ASSESSMENT
Woodland Size Criteria		
• Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership) • Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges. • Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions). • Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types.	Where woodlands cover: • Is less than about 5% of land cover, woodlands 2ha in size or larger should be considered significant • Is about 5-15% of land cover, woodlands 4ha in size or larger should be considered significant • Is about 15-30% of land cover, woodlands 20ha in size or larger should be considered significant • Is about 30-60% of land cover, woodlands 50ha in size or larger should be considered significant • Occupies more than 60% of the land, a minimum size is not suggested, and other factors should be considered	• According to NSE (2006) the Town of Innisfil contains 23% forest cover. • Therefore, based on size criteria forest cover of the property would not be considered part of a significant woodland in the context of the PPS.
Ecological Function Criteria		
Woodland Interior		
• Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species. • For purposes of this criterion, a maintained public road would create an edge even if the opening was not wider than 20m and did not create a separate woodland.	Woodlands should be considered significant if they have: • Any interior habitat where woodlands cover less than about 15% of the land cover • 2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover • 8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover • 20 ha or more of interior habitat where woodlands cover about 60% of the land cover	• Property contained approximately 1.2ha of interior habitat. Therefore, since landscape contains between 15% and 30% woodland cover (i.e., 23% forest cover in Town of Innisfil [NSE 2006], woodland interior does not compel identification as significant. The breeding bird survey confirmed this low functioning condition, identifying of 3 of 12 areas sensitive forest breeding birds and 7 of 27 forest birds expected to be found using the forest habitat based on numerous surveys in comparable size woodlots in Simcoe County.
Proximity to Other Woodlands or Other Habitats		
• Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not. • Patches close to each other are of greater mutual benefit and value to wildlife.	Woodlands should be considered significant if: • A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (e.g., 0.5-20ha, depending on circumstance)	• Woodland not located within 30m of an evaluated wetland • Fish habitat function of municipal drainage ditches not benefitting significantly from woodland cover. • Proximity to other woodlands or other habitats does not compel identification as significant.

CRITERIA[1]	STANDARDS	ASSESSMENT
Linkages		
• Linkages are important connections providing for movement between habitats. • Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as “stepping stones” for movement between habitats.	Woodlands should be considered significant if they: • Are located within a defined natural heritage system or provide a connecting link between two other significant features, each of which is within a specified distance (e.g., 120m) and meets minimum area thresholds (e.g., 1-20ha, depending on circumstance)	• Woodland not identified as part of a habitat linkage. • Woodland would be surrounded by residential development therefore no un-impaired linkage function potential through property. • Potential linkage function does not compel identification as significant.
Water Protection		
• Source water protection is important. • Natural hydrological processes should be maintained.	Woodlands should be considered significant if they: • Are located within a sensitive or threatened watershed or a specific distance (e.g., 50m or top of valley bank if greater) or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or fish habitat and meet minimum area thresholds (e.g., 0.5-10ha, depending on circumstance)	• Property does not contain ground water discharge features (i.e., seeps and springs) and is not identified as within a sensitive recharge area • Water protection potential does not compel identification as significant.
Woodland Diversity		
• Certain woodland species have had major reductions in representation on the landscape and may need special consideration. • More native diversity is more valuable than less diversity.	Woodlands should be considered significant if they have: • A naturally occurring composition of native forest species that have declined significantly south and east of the Canadian Shield and meet minimum area thresholds (e.g., 1-20ha, depending on circumstance) • A high native diversity through a combination of composition and terrain (e.g., a woodland extending from a hilltop to a valley bottom or to opposite slopes) and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance)	• Forest communities of property predominately popular, lacking diversity of forest habitat types. • No terrain features such as hilltops or valley slopes. • Woodland diversity does not compel identification as significant.
Uncommon Characteristics Criteria		
• Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected. • Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity.	Woodlands should be considered significant if they have: • A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5ha, depending on circumstance) • A vegetation community with a provincial ranking of S1, S2 or S3 (as ranked by the NHIC and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance) • Habitat (e.g., with 10 individual stems or 100m^2 of leaf coverage) of a rare, uncommon or restricted woodland plant species and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance): vascular plant species for which the NHIC’s Southern Ontario Coefficient of Conservatism is 8, 9 or 10; tree species of restricted distribution such as sassafras or rock elm; species existing only in a limited number of sites within the planning area • Characteristics of older woodlands or woodlands with larger tree size structure in native species meet minimum area thresholds (e.g., 1-10ha, depending on circumstance): older woodlands could be defined as having 10 or more trees/ha greater than 100 years old; larger tree size structure could be defined as 10 or more trees/ha at least 50cm in diameter, or a basal area of 8 or more m^2/ha in trees that are at least 40cm in diameter	• Forest community in the woodlot has composition and structures of types common within the planning area. • No forest characteristics that would rank it as provincially significant by the NHIC. • No forest species that are rare, uncommon or restricted woodland plant species. • Forest community on the property is young. • No uncommon characteristics does not compel identification of the woodland cover on the property as significant.

CRITERIA[1]	STANDARDS	ASSESSMENT
Economic and Social Function Values Criteria		
• Woodlands that have high economic or social values through particular site characteristics or deliberate management should be protected.	Woodlands should be considered significant if they have: • High productivity in terms of economically viable products together with continuous native natural attributes and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance) • A high value in special services such as air-quality improvement or recreation at a sustainable level that is compatible with long-term retention and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance) • Important identified appreciation, education, cultural or historical value and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance)	• Woodlot does not generate economically viable forest products. • No formal recreational use of property or of adjacent lands. • Woodlot not identified as providing education, cultural or historical value. • Economic and social values do not compel identification as significant.

[1]From: MNR. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005: Second Edition. Queen's Printer for Ontario, Toronto, ON.

NSE (North-South Environmental Inc.). 2006. Innisfil Official Plan review, environmental background report. Report prepared for the Town of Innisfil. 48 pp + app.

APPENDICES

Appendix A: Provincial Natural Heritage Information

Appendix B: Municipal Planning Information

Appendix C: Lake Simcoe Region Conservation Authority Information

Appendix D: Soils and Water Well Information

Appendix E: Ontario Breeding Bird Atlas Information

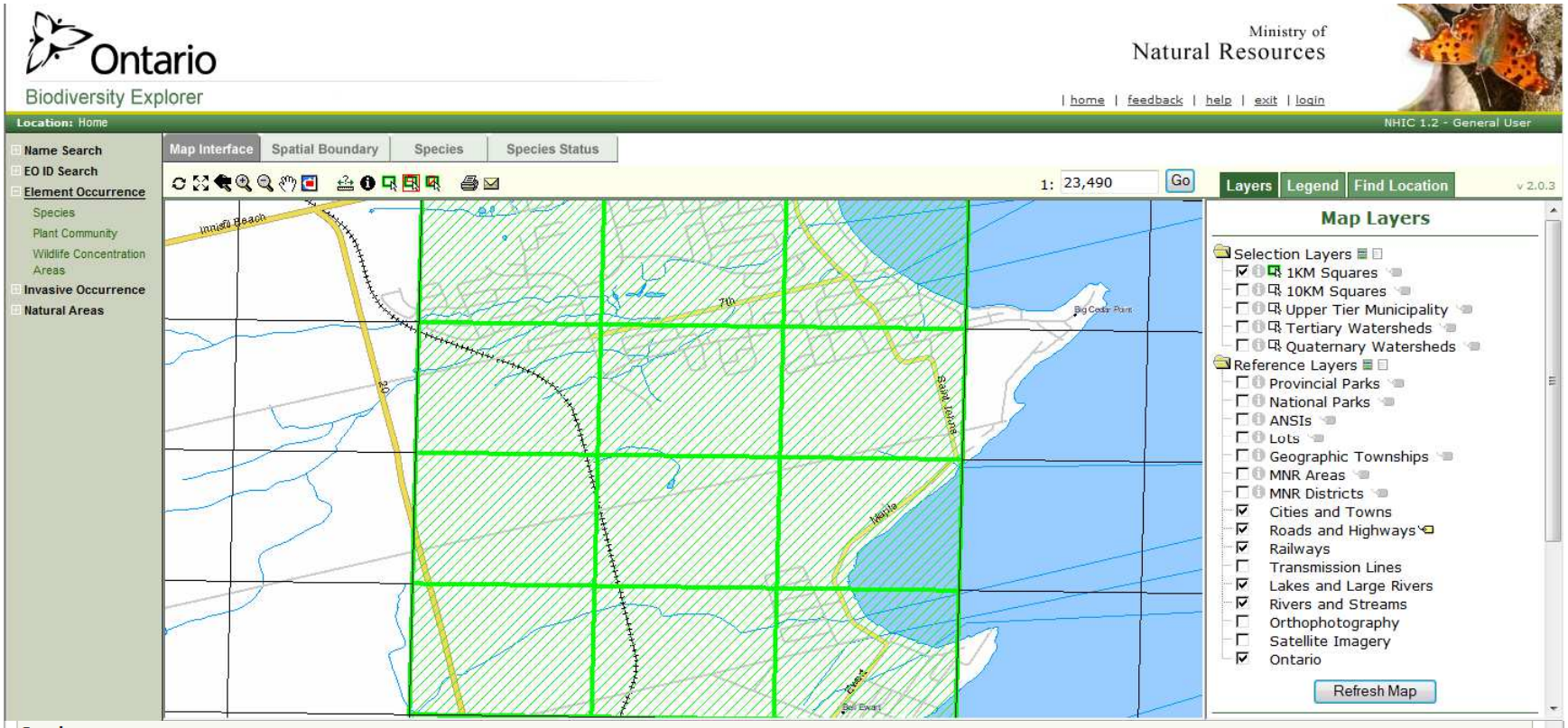
Appendix F: Alcona South Secondary Plan – Concept Plan

Appendix H: Historic Aerial Photographs

APPENDIX A

Provincial Natural Heritage Information

Natural Heritage Information Centre Report. Accessed March 15, 2013.
(https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/mainSubmit.do)



Species
Element Occurrence Search (3 records found)

Sort Order Phylogenetic Ascending help

Your search includes restricted records. Please contact NHIC for details.

Taxon	Family	Scientific Name	Common Name	Rank		At Risk Status		# of EOs	EO Summary Report
				Global (G-rank)	Ontario (S-rank)	Committee on the Status of Endangered Wildlife in Canada (COSEWIC)	Species At Risk in Ontario (SARO)		
Birds	Emberizidae	*Ammodramus henslowii*	Henslow's Sparrow	G4	SHB	END	END	1	
Dragonflies and Damselflie	Gomphidae	*Stylurus spiniceps*	Arrow Clubtail	G5	S2			1	
Dragonflies and Damselflie	Corduliidae	*Somatochlora ensigera*	Plains Emerald	G4	S1			1	

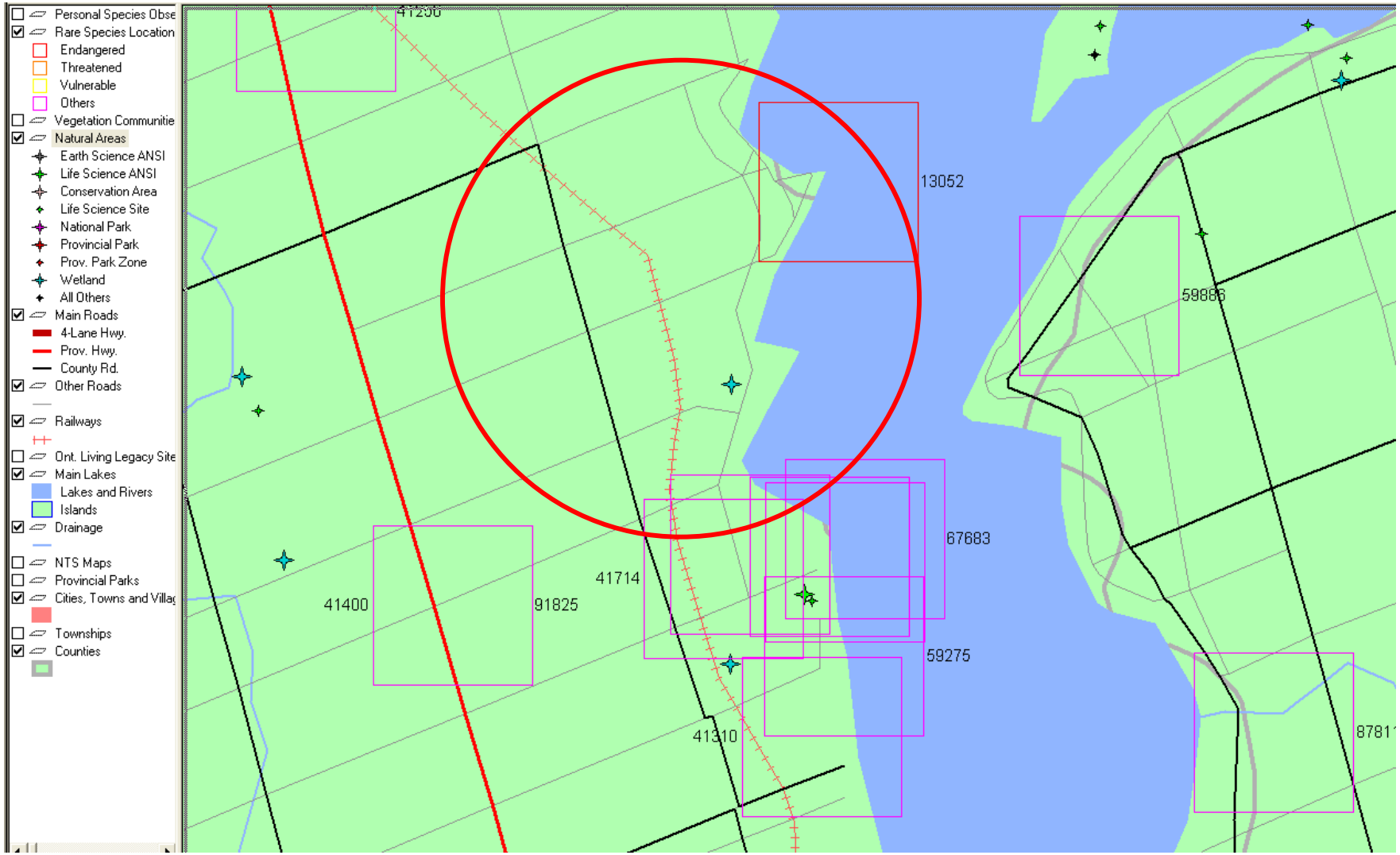
Natural Area Search (1 record found)

Sort Order Name Ascending help

Area ID	Name	Area Type	Significance	Zone	Easting	Northing	Natural Area Detailed Report
8983	LITTLE CEDAR POINT SWAMP	Wetland	Other	17,61581	615811	4903623	

Page 1 of 1

Appendix A: Rare Species Observations (Ministry of Natural Resources Natural Heritage Information Centre http://nhic.mnr.gov.on.ca/nhic_.cfm) (Study area encompassed within red circle)



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There are **1** element occurrence records in this area that you have public access to. Each occurrence record (EO_ID) may have more than one separate observation associated with it (i.e. more than one row in this table). Coordinates are rounded down to within 1km. Please contact the local MNR district office ecologist if you require more details for these records.

EO_ID	Scientific Name	Common Name	UTM Centroid (rounded)	Srank	MNR	COSEWIC	Date
67683	Brachythecium calcareum	A Moss	17 618000 4901000	S2			1972-09-26

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EO_ID	Scientific Name	Common Name	UTM Centroid (rounded)	Srank	MNR	COSEWIC	Date
41714	Enallagma aspersum	Azure Bluet	17 616000 4901000	S3			1955-06-26

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EO_ID	Scientific Name	Common Name	UTM Centroid (rounded)	Srank	MNR	COSEWIC	Date
41328	Somatochlora tenebrosa	Clamp-tipped Emerald	17 616000 4901000	S2			1940-08-03

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EO_ID	Scientific Name	Common Name	UTM Centroid (rounded)	Srank	MNR	COSEWIC	Date
33799	Trichophorum clintonii	Clinton's Leafless-bulrush	17 617000 4901000	S2			1975-05-25

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SPECIES INFO | RANK INFO | RANK HISTORY | EO Totals | REFERENCES

General Element Report: *Cordulegaster diastatops*

Scientific Name: *Cordulegaster diastatops*
Common Name: Delta-spotted Spiketail
Authority: Seyls, 1854

Family Name: CORDULEGASTERIDAE
Family Number:

Tracked: Y
Code: CORDIA
Coefficient of Wetness: W

Introduced: No
Slide:
Coeff. of Conservatism

NRVIS ID: 181112
Updated: 2000-06-12

Ranking Information

GNAME: *Cordulegaster diastatops*
GRANK: G5 **GRANK DATE:** 1985-12-30
NRANK: N? **COSEWIC:**
MNR Status: **SRANK:** S3
Ontario General Status:
Ontario General Status Date:
Notes:

Rank History

Rank Type	Old Rank	Old Rank Date	Date Changed	Reason Changed	Changed By
SRANK	S4	16-Oct-97	12-Jun-00	Paul Catling (pers. comm. April 2000) suggests S3 is a more accurate rank.	dsutherland

EO Totals

Total EOs	A	B	C	D	E	F	H	X	None
38	0	0	0	0	10	0	6	0	22

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SPECIES INFO | RANK INFO | RANK HISTORY | EO Totals | REFERENCES

General Element Report: *Somatochlora forcipata*

Scientific Name: *Somatochlora forcipata*
Common Name: Forcipate Emerald
Authority: (Scudder, 1866)

Family Name: CORDULIIDAE
Family Number:

Tracked: Y
Code: SOMFOR
Coefficient of Wetness: W

Introduced: No
Slide:
Coeff. of Conservatism

NRVIS ID: 181169
Updated: 2002-12-17

Ranking Information

GNAME: *Somatochlora forcipata*
GRANK: G5 **GRANK DATE:** 1985-12-30
NRANK: N? **COSEWIC:**
MNR Status: **SRANK:** S2
Ontario General Status:
Ontario General Status Date:
Notes:

Rank History

Rank Type	Old Rank	Old Rank Date	Date Changed	Reason Changed	Changed By
NHIC	S1S3	09-Jun-00	17-Dec-02	OOD records and recent surveys suggest that S2 is the most appropriate rank	cjones
SRANK	S2S3	20-Mar-98	09-Jun-00	Recent rank review based primarily on OOD suggests that S1S3 is a more appropriate rank.	dsutherland
SRANK	S3?	14-Jan-96	20-Mar-98		mholder

EO Totals

Total EOs	A	B	C	D	E	F	H	X	None
13	0	0	0	0	9	0	3	0	1

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SPECIES INFO | RANK INFO | RANK HISTORY | EO Totals | REFERENCES

General Element Report: *Carex formosa*

Scientific Name: *Carex formosa*
Common Name: Handsome Sedge
Authority: Dewey

Family Name: CYPERACEAE
Family Number: 23

Tracked: Y
Code: CARFORM
Coefficient of Wetness: -2

Introduced: No
Slide:
Coeff. of Conservatism 6

NRVIS ID: 23174
Updated: 1998-03-30

Ranking Information

GNAME: *Carex formosa*
GRANK: G4 **GRANK DATE:** 1994-03-13
NRANK: N3? **COSEWIC:**
MNR Status: **SRANK:** S3S4
Ontario General Status: SENSITIVE
Ontario General Status Date: 19-Apr-00
Notes:

Rank History

Rank Type	Old Rank	Old Rank Date	Date Changed	Reason Changed	Changed By

EO Totals

Total EOs	A	B	C	D	E	F	H	X	None
63	1	3	2	5	13	0	3	0	36

References

8438 Argus, G.W., K.M. Pryer, D.J. White and C.J. Keddy (eds.) 1982-1987. Atlas of the Rare Vascular Plants of Ontario. Four parts. National Museum of Natural Sciences, Botany Division, Ottawa. Looseleaf.

79886 Flora of North America (FNA) Editorial Committee. 2002. Flora of North America, Volume 24, draft species accounts for Cyperaceae. Unpublished draft species accounts.

57021 Oldham, M.J., and W.J. Crins. 1998. Atlas of the Vascular Flora of southern Ontario. Draft 2. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario. 378 pp.

4565 Voss, E.G. 1972. Michigan Flora: A Guide to the Identification and Occurrence of the Native and Naturalized Seed-Plants of the State. Part I: Gymnosperms and Monocots. Cranbrook Institute of Science and University of Michigan Herbarium, Ann Arbor, Michigan. 488 pp.

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EO_ID	Scientific Name	Common Name	UTM Centroid (rounded)	Srank	MNR	COSEWIC	Date
13052	Ammodramus henslowii	Henslow's Sparrow	17 618000 4906000	S1B,SZN	END-R	END	1942-06-03

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SPECIES INFO | RANK INFO | RANK HISTORY | EO Totals | REFERENCES

General Element Report: *Gomphus graslinellus*

Scientific Name: *Gomphus graslinellus*
Common Name: Pronghorn Clubtail
Authority: Walsh, 1862

Family Name: GOMPHIDAE
Family Number:

Tracked: Y
Code: GOMGRA
Coefficient of Wetness: W

Introduced: No
Slide:
Coeff. of Conservatism

NRVIS ID: 181123
Updated: 2002-12-17

Ranking Information

GNAME: *Gomphus graslinellus*
GRANK: G5 **GRANK DATE:** 1985-12-30
NRANK: N? **COSEWIC:**
MNR Status: **SRANK:** S2
Ontario General Status:
Ontario General Status Date:
Notes:

Rank History

Rank Type	Old Rank	Old Rank Date	Date Changed	Reason Changed	Changed By
NHIC	S2S3	20-Mar-98	17-Dec-02	Despite recent survey coverage, this remains a rare species with fewer than 20 EOs	cjones
SRANK	S2	14-Jan-96	20-Mar-98		mholder

EO Totals

Total EOs	A	B	C	D	E	F	H	X	None
18	0	0	0	0	15	0	3	0	0

References

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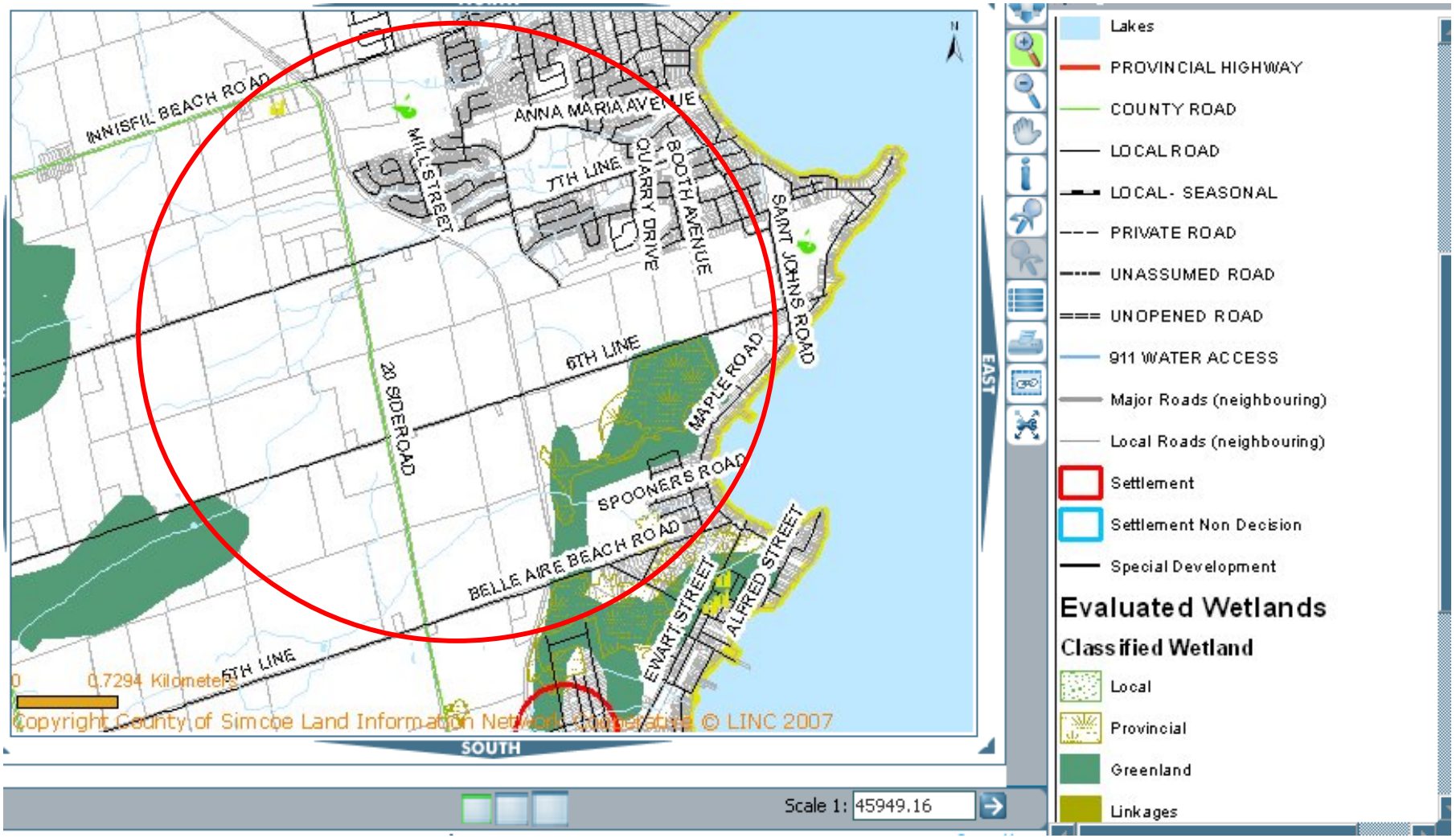
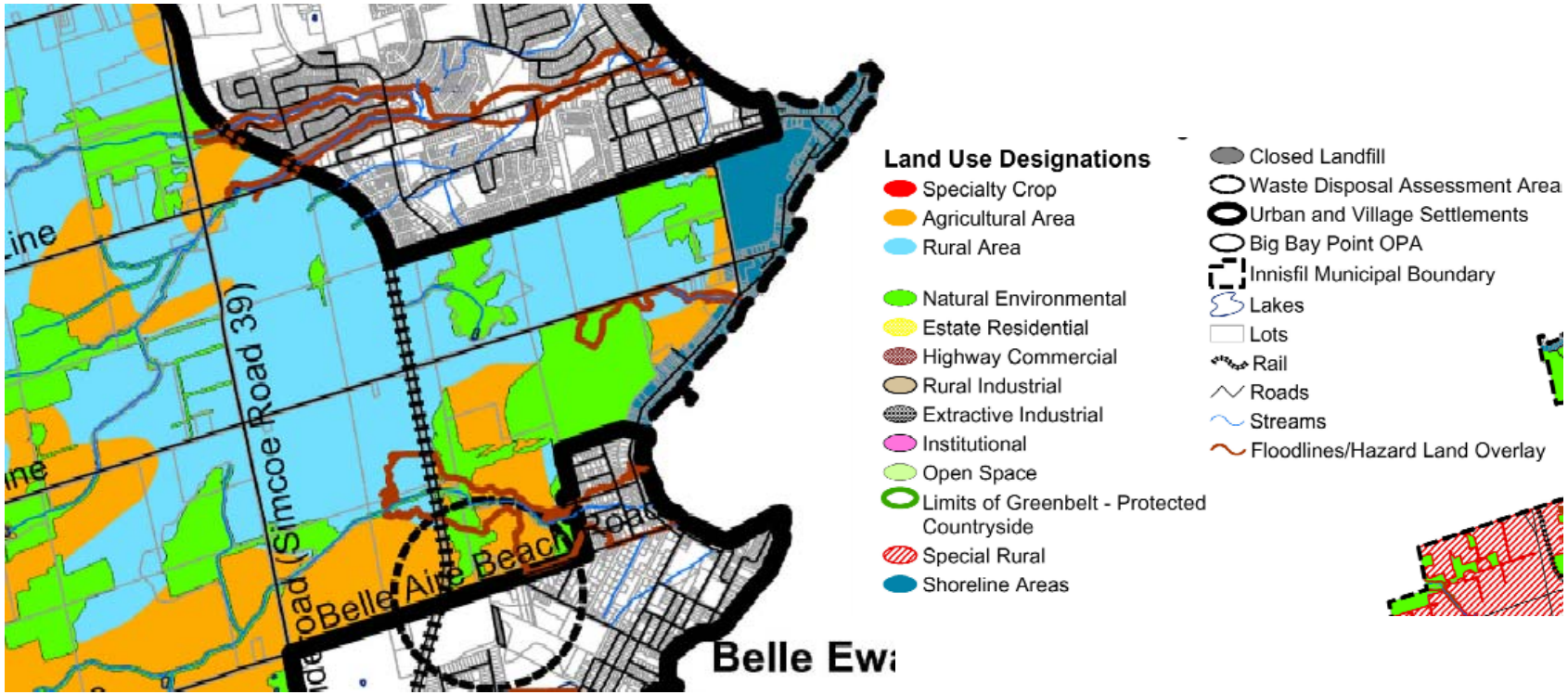
EO_ID	Scientific Name	Common Name	UTM Centroid (rounded)	Srank	MNR	COSEWIC	Date
41400	Somatochlora williamsoni	Williamson's Emerald	17 612000 4901000	S3			1940-08-04
41400	Somatochlora williamsoni	Williamson's Emerald	17 616000 4901000	S3			
41400	Somatochlora williamsoni	Williamson's Emerald	17 617000 4901000	S3			1948-07-01

APPENDIX B

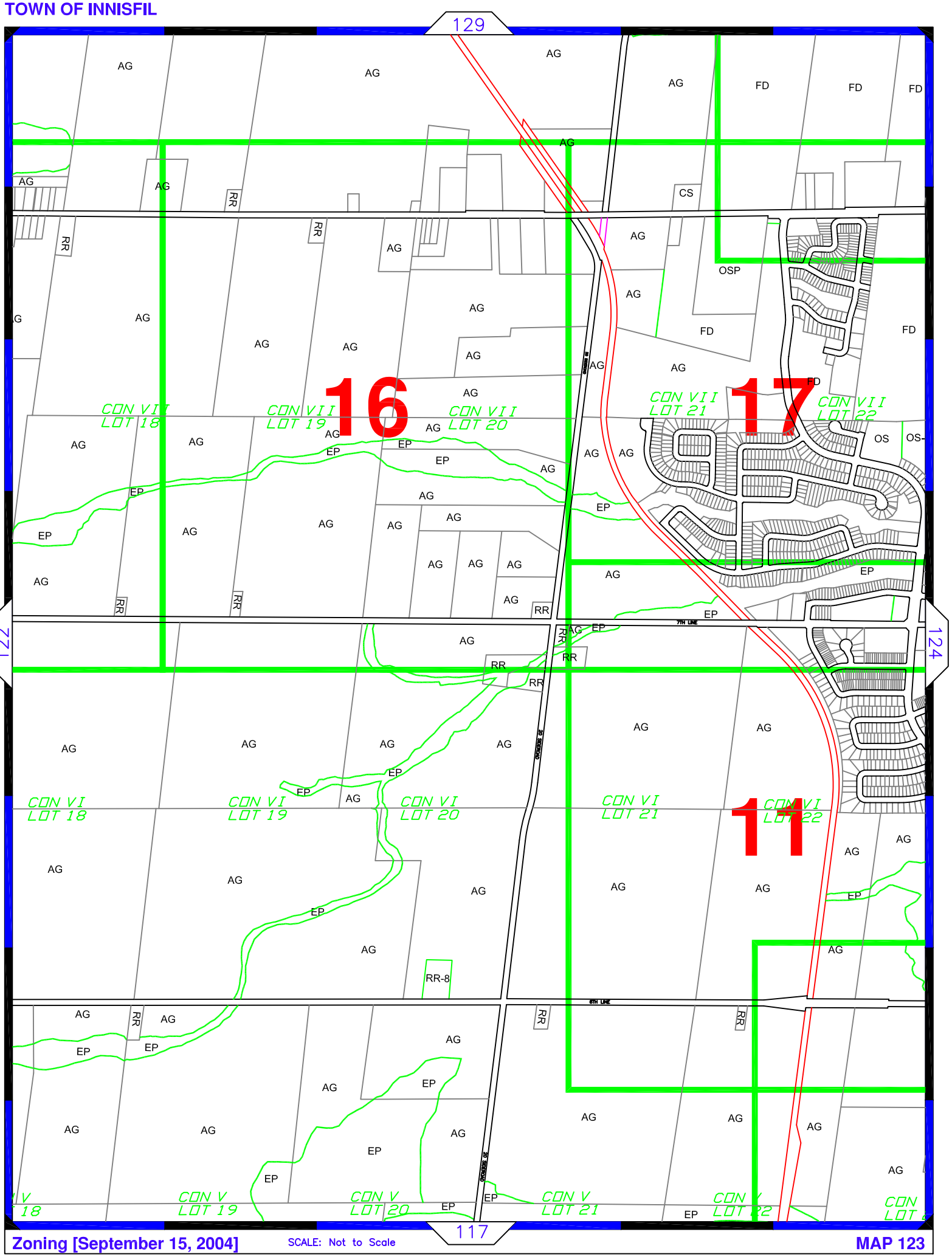
Municipal Planning Information

Appendix B: Simcoe County Greenlands (Simcoe County Interactive Mapping (maps.simcoe.ca)). Little Cedar Point/Degrassi Point Greenlands Unit (ITP4), of the Innisfil Till Plain group.
(Study Area located in red circle)

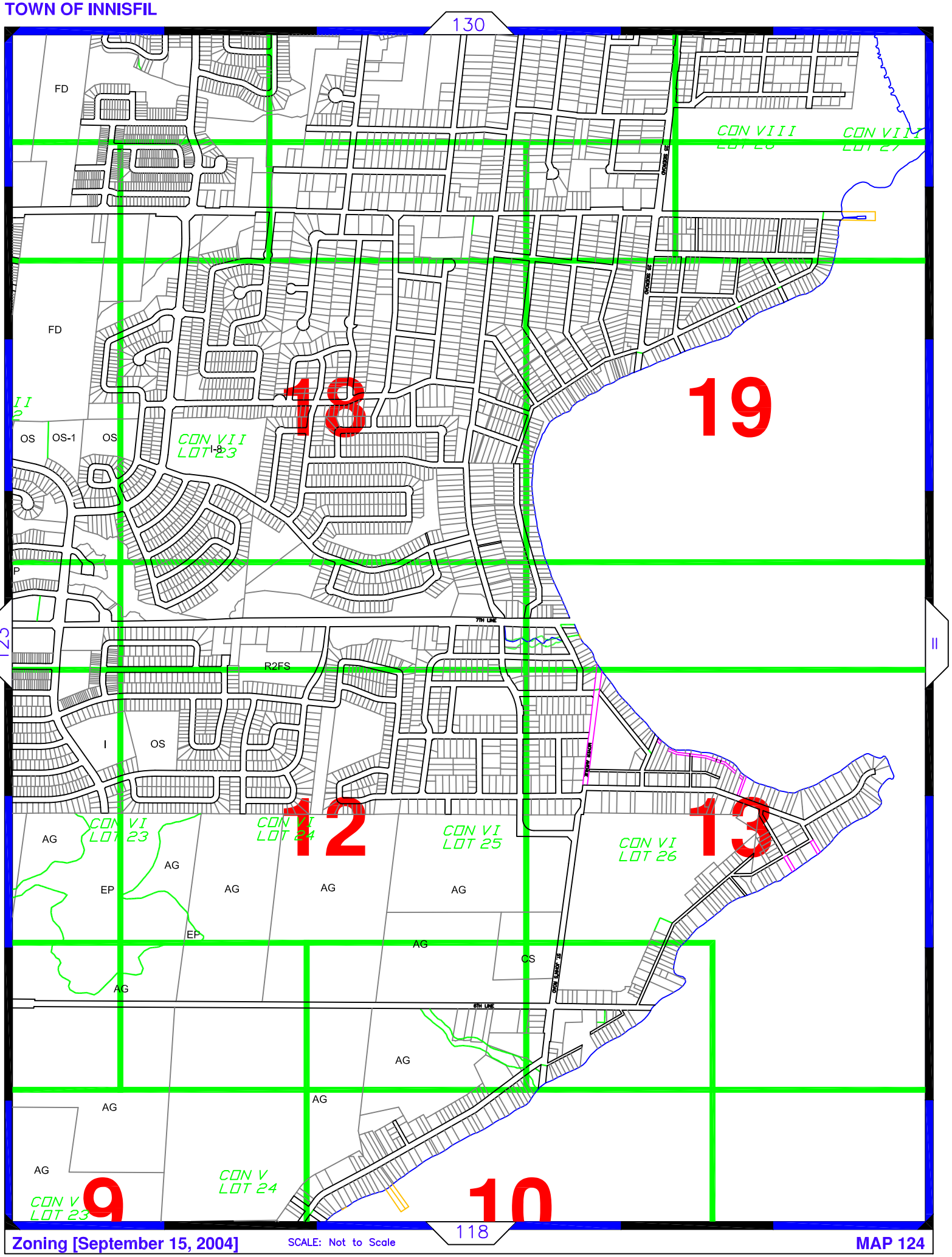




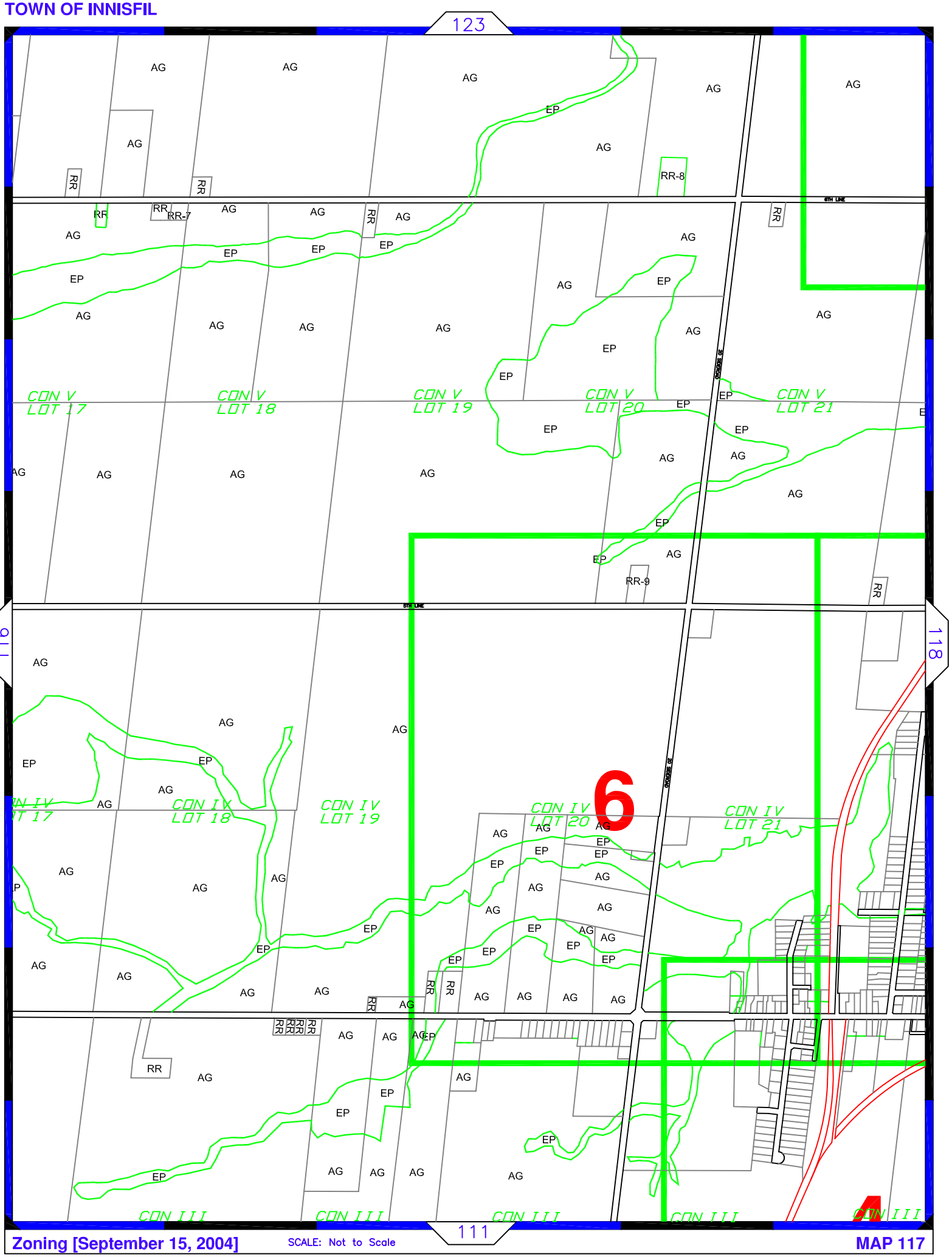
Appendix B: Land Use Plan, Town of Innisfil (Schedule B, Town of Innisfil Official Plan, 2006).


129
122
124
117
16
17
11
CON VII LOT 18
CON VII LOT 19
CON VII LOT 20
CON VII LOT 21
CON VII LOT 22
CON VI LOT 18
CON VI LOT 19
CON VI LOT 20
CON VI LOT 21
CON VI LOT 22
CON V LOT 18
CON V LOT 19
CON V LOT 20
CON V LOT 21
CON V LOT 22
7TH LINE
6TH LINE
AG
RR
EP
FD
OSP
CS
OS
RR-8

TOWN OF INNISFIL



Zoning [September 15, 2004] SCALE: Not to Scale MAP 124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116
118
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6TH LINE
GWOSDOS SR
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RR-7
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CON V
LOT 17
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LOT 18
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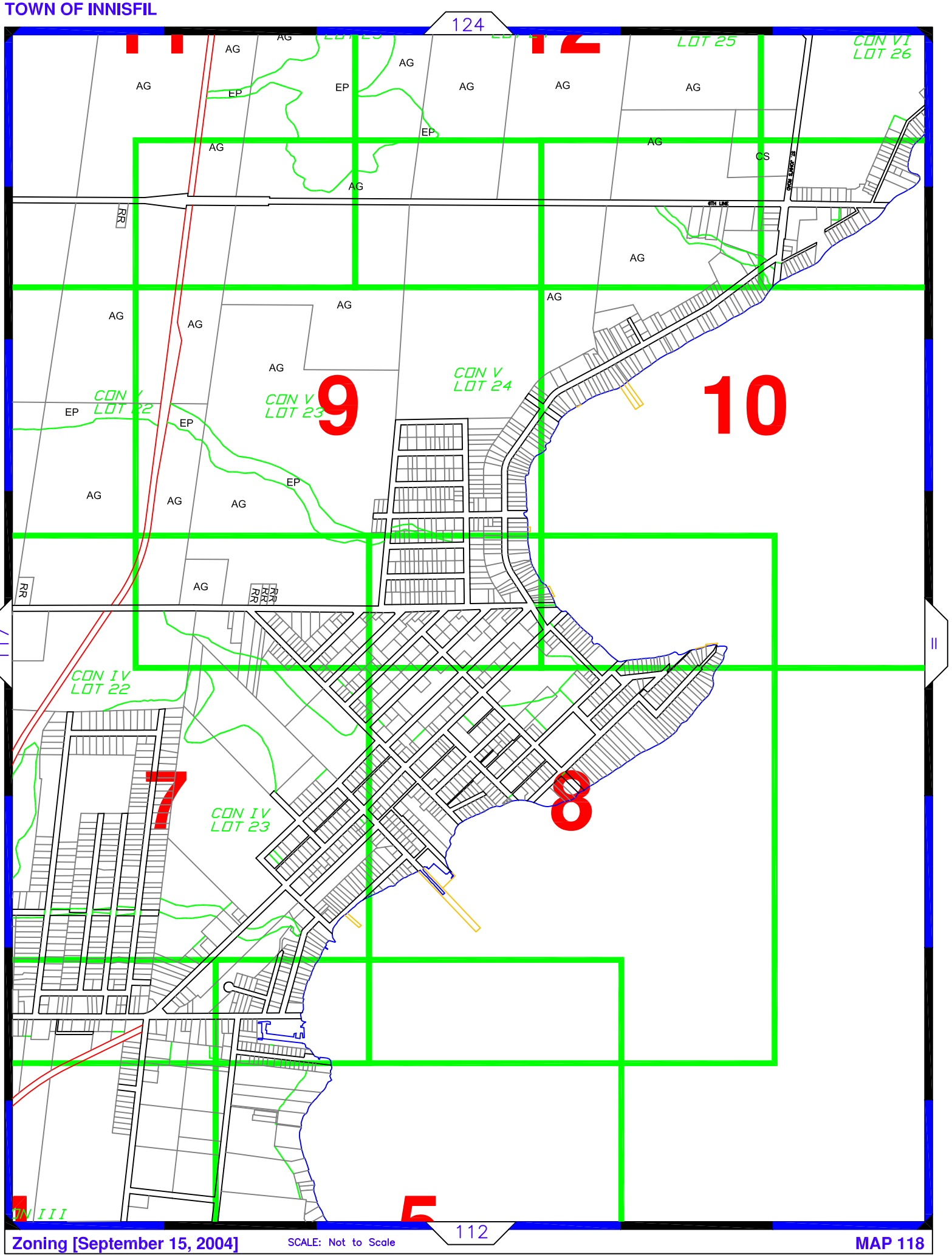


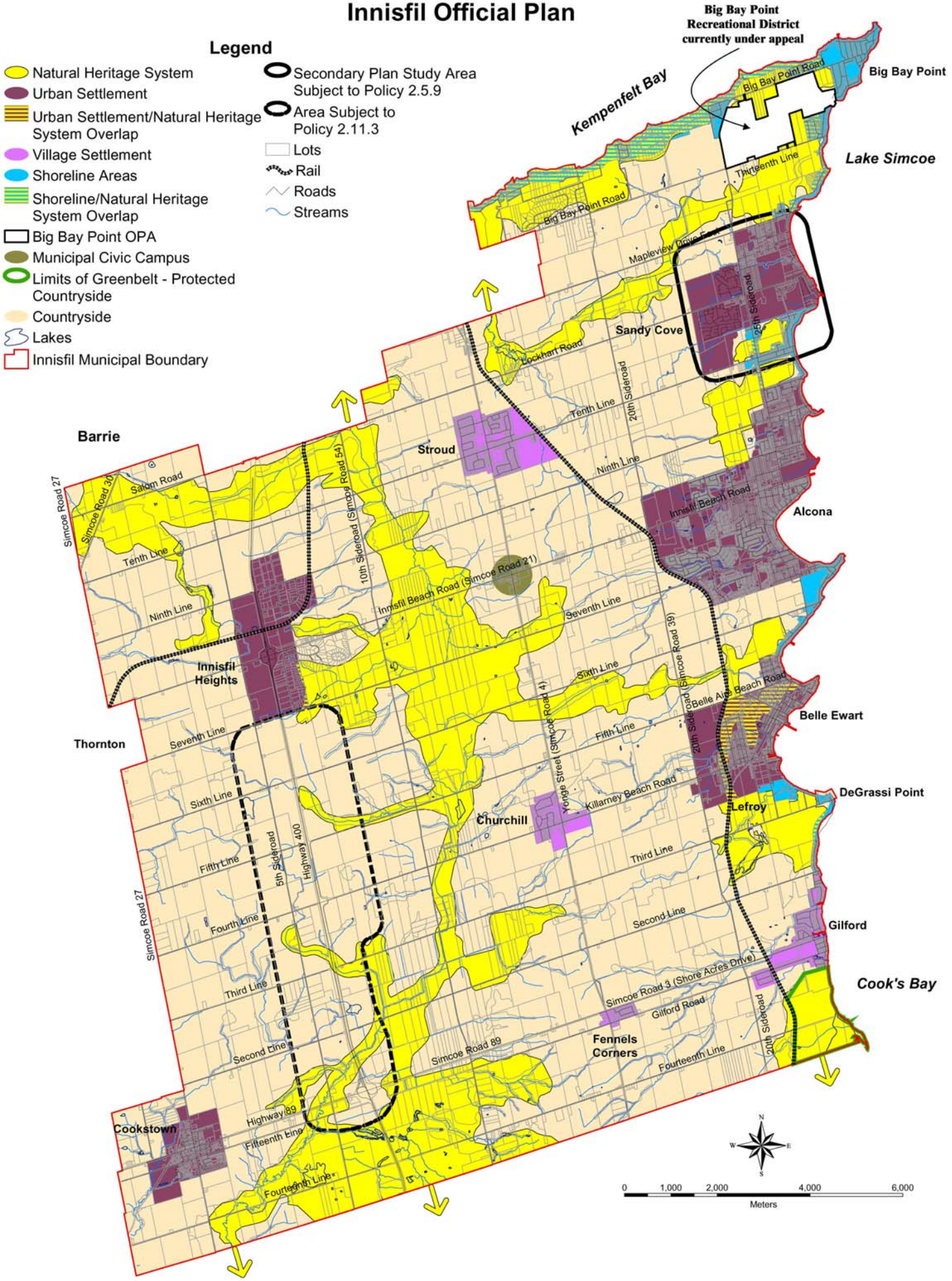
Zoning [September 15, 2004]

SCALE: Not to Scale

MAP 118

Schedule A: Municipal Structure

Innisfil Official Plan



July 2006

McCarthy Tétrault LLP
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Fax: 416-868-0673

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Assistant: Chiu, Stephanie Ying Hui
Direct Line: (416) 601-7863

mccarthy tétrault

July 17, 2012

Cortel Group
2800 Highway #7 West
Suite 301
Concord ON L4K 1W8

Attention: Mr. Luka Kot

Dear Sirs/Mesdames:

Re: Alcona South Property
Memorandum of Bousfields Inc. ("Bousfields") dated July 16, 2012

Further to your direction, we have reviewed the above-captioned Memorandum. In doing so, we independently reviewed O.Reg 219/09 and the Lake Simcoe Protection Plan. In reliance on the characterization of the facts set out in the Memorandum, from a legal perspective we concur with the conclusions of Bousfields respecting both the Regulation and Plan.

Should you have any further questions in this regard, please do not hesitate to contact us.

Yours truly,

John A.R. Dawson

JAD/sc

200266/419090
DOCS 11642855v1

BOUSFIELDS INC.

MEMORANDUM - DRAFT

To: Luka Kot Project No.: 0960

From: Michael Bissett

Copy: Peter Smith, John Dawson, Daniel Artenosi

Date: July 16, 2012

Re: Alcona South - Woodlot
Applicability of Lake Simcoe Protection Plan

Purpose

The purpose of this memorandum is to assess the applicability of the Lake Simcoe Protection Plan with specific regard for its effect on restricting the removal of the woodlot on the Sleeping Lion lands (designated as Natural Heritage within the Town of Innisfil OP, 2008).

Effect of Lake Simcoe Protection Act O.Reg. 219/09 (the "Reg")

Summary

Pursuant to Clause 9 of the Reg, the municipally-initiated Alcona South Secondary Plan and any related rezoning, subdivision and site plan applications would be required to be disposed of in accordance with the LSPP, since they were not commenced prior to the LSPP coming into effect.

Commencement of Matters

Given that the current strategy is for the land use designations on the Sleeping Lion lands to be implemented through the municipally-initiated Alcona South Secondary Plan (scoped to Sleeping Lion only), clause 7(b) is relevant. The date of commencement of the Alcona South Secondary Plan would be the date of the by-law adopting the plan (See Attachment "A" for wording from the Reg). Given that no by-law has been passed to adopt the Alcona South Secondary Plan, it hasnot commenced.

In addition to the above, Clauses 7(c), (d), (e) and (h) dealing with zoning, site plan and subdivision would also be applicable. Given that no applications have been filed for these applications, they have not commenced.

Transition of Matters Commenced Before the Plan comes into Effect

Based on the above conclusion that the applicable matters (i.e. Alcona Secondary Plan, rezoning, subdivision) did not commence prior to the LSPP coming into effect, this section of the Regdoes not apply.

Transition of Matters Commenced On or After the Plan comes into Effect

Clause 9(1) provides that an OP, OPA, rezoning, subdivision or site plan commenced on or after the LSPP comes into effect shall be disposed of in accordance with the LSPP. This does apply to the Alcona South Secondary Plan and any subsequent rezoning, subdivision and site plan applications.

Effect of the LSPP

The policies restricting development of the woodlot are Policies 6.20DP to 6.29DP. Policy 6.20DP provides that Policies 6.20 to 6.29 apply only to areas "outside of existing settlement areas".

In our view these policies are intended to deal with lands that are located in rural areas and are not intended to apply to urban and future urban areas. This intent is clarified by the preamble to Section 6.32, which provides that the Settlement Area policies of the LSPP are intended to apply to "existing settlement areas" as well as "settlement area expansions".

Existing settlement areas are defined by the LSPP as "*settlementareas* that are designated in an official plan on the date the Plan comes into effect." (emphasis added). We note that the definition does not qualify the words "official plan" with the words "adopted" or "approved".

In this case, the 2008 County of Simcoe Official Plan identifies "Alcona" as a "Settlement" with a dot on Schedule 5.1 and includes no boundary. These settlements are intended to be based on a municipal growth management strategy (pursuant to Policy 4.1.1). In this regard, the Innisfil Growth Management Strategy completed in February 2009 (prior to the LSPP), identified the Sleeping Lion lands within the Alcona settlement area. In this regard, the OMB has confirmed that the Sleeping Lion lands were designated as Settlement in the Simcoe OP through its decision on the Sleeping Lion appeal.

With respect to the Innisfil OP, OPA 1 was adopted in April 2009 (prior to the LSPP) and included the Sleeping Lion lands within the Alcona settlement area. Prior to the adoption of OPA 1, the in-force 2002 Innisfil Official Plan did not include a settlement area boundary at all.

Conclusion

Based on the above, it is our opinion that, for the purposes of the LSPP, the Sleeping Lion lands were located within an “existing area of settlement” at the date the LSPP came into effect and therefore the applicable policies are the Settlement Area policies 6.32DP to 6.35DP and not Policies 6.20DP to 6.29DP.

APPENDIX C

Lake Simcoe Region Conservation Authority Information

ALCONA SOUTH SECONDARY PLAN

Legend

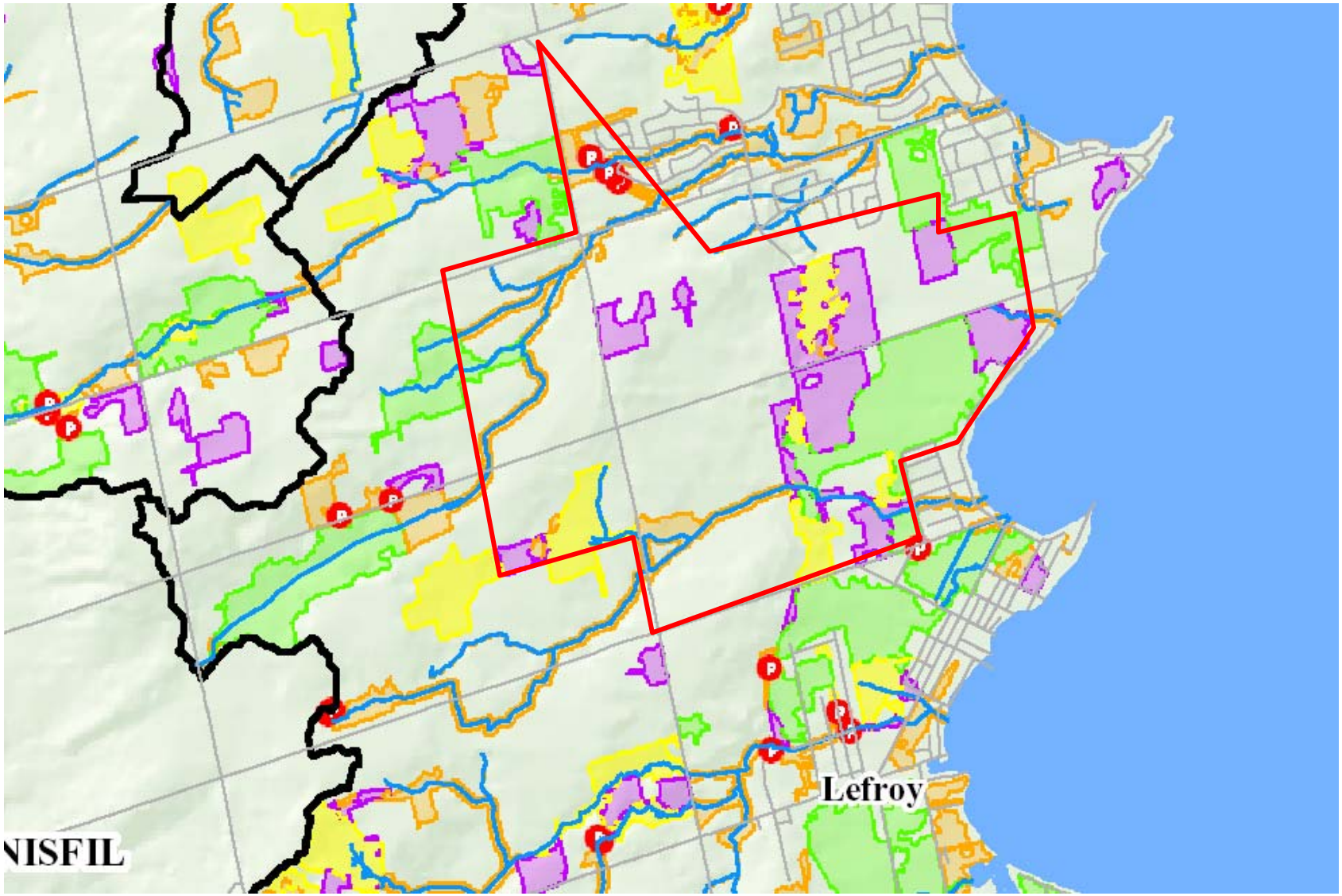
- Watercourse
- ELC & Land Use

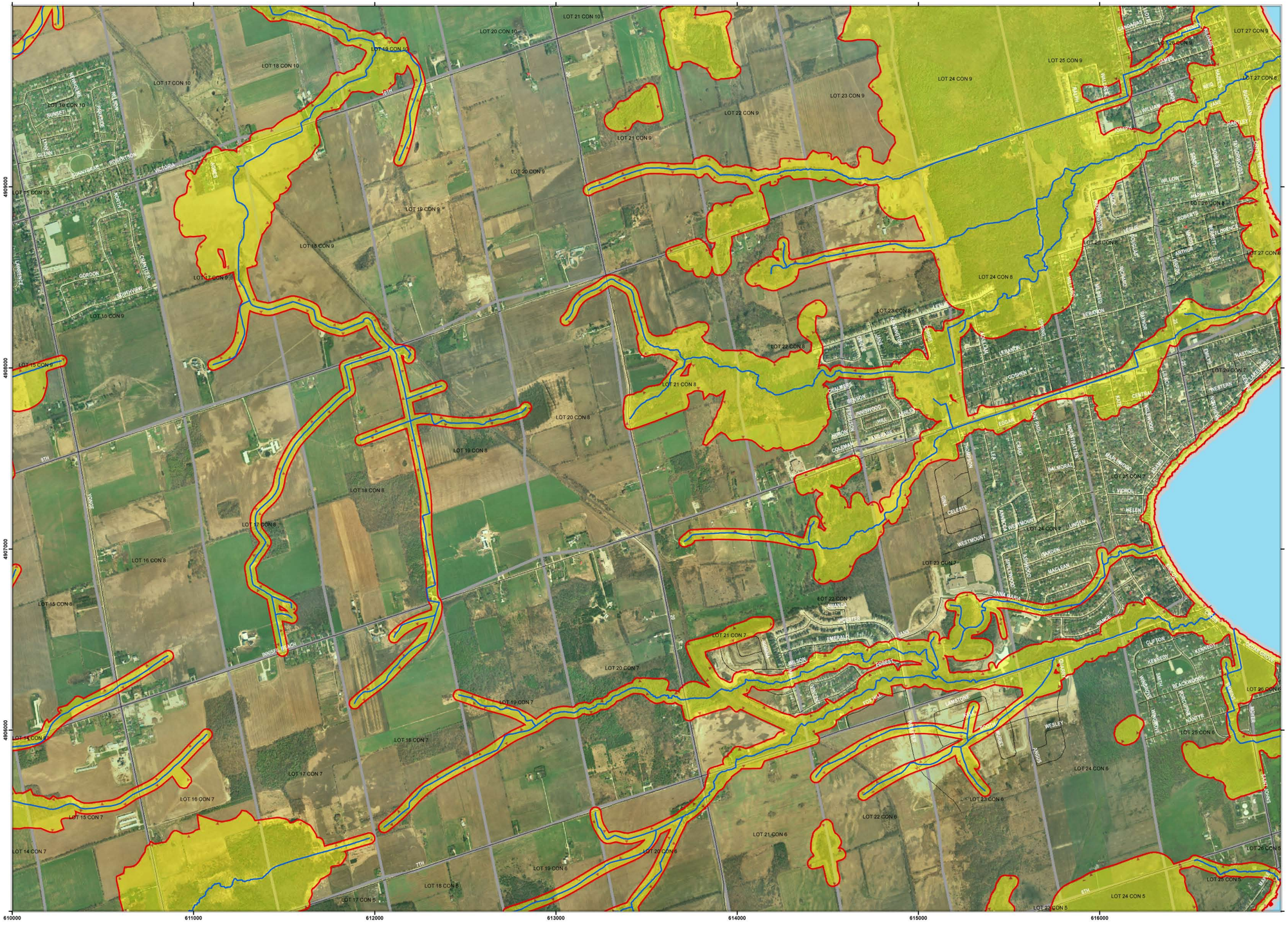
ELC CODE	COMMUNITY NAME
FOC	Coniferous Forest
FOM	Mixed Forest
FOD	Deciduous Forest
FEO	Open Fen
FES	Shrub Fen
CUP	Cultural Plantation
CUM	Cultural Meadow
CUT	Cultural Thicket
CUW	Cultural Woodland
SWC	Coniferous Swamp
SWM	Mixed Swamp
SWD	Deciduous Swamp
SWT	Thicket Swamp
MAM	Meadow marsh
MAS	Shallow Marsh
OAO	Open Water
SAF	Floating Shallow Aquatic
SAS	Submerged Shallow Aquatic
SAM	Mixed Shallow Aquatic
TPO	Tall Grass Prairie
ALO	Alvar
BOS	Shrub Bog

0 0.15 0.3 0.6 0.9 1.2 1.5 Kilometres

The information depicted on this map has been compiled from various sources.
While every effort has been made to accurately depict the information, data / mapping errors may exist.
This map has been produced for illustrative purposes only.
Imagery capture date spring 2002
LSRCA GIS Services DRAFT printed April 2007.

Appendix C: Natural Heritage System Mapping for the Lake Simcoe Watershed (in part) (2007)
(*Approximate study area boundary indicated in red polygon*)

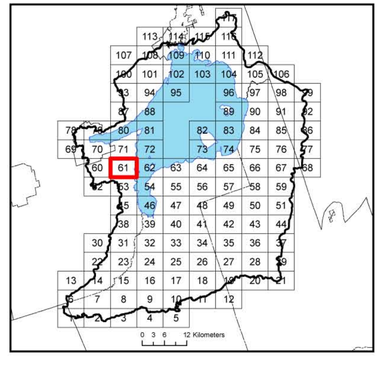




N

Legend

- WATERCOURSE
- ROAD
- REGULATION AREA
- LOT_CONCESSION
- LSRCA JURISDICTION
- MUNICIPAL BOUNDARY
- LAKE SIMCOE



THE REGULATION AREA IS A COMPILATION OF VARIOUS INFORMATION SOURCES. 2002 ORTHOPHOTOS WERE CAPTURED BY FIRST BASE SOLUTIONS. RIVERINE HAZARDS WERE BASED ON EXISTING FLOOD PLAIN MAPPING. FLOOD PLAIN LIMITS WHERE ENGINEERING PRODUCTS DID NOT EXIST WERE DETERMINED BY LSRCA STAFF. RIVERINE EROSION HAZARDS WERE DETERMINED BY LSRCA STAFF. A 15-METER SETBACK WAS APPLIED FROM THE LIMITS OF ALL RIVERINE HAZARDS. SHORELINE FLOOD HAZARDS WERE DETERMINED BY LSRCA STAFF BY APPLYING THE EQUATIONS PREVIOUSLY DEVELOPED THROUGH AN ENGINEERING STUDY. SHORELINE EROSION HAZARDS WERE DETERMINED BY LSRCA STAFF. WETLANDS WERE DELINEATED BY LSRCA STAFF USING THE ECOLOGICAL LAND CLASSIFICATION (ELC) SYSTEM AND BY THE MINISTRY OF NATURAL RESOURCES. SETBACKS OF 120-M FROM PROVINCIALLY SIGNIFICANT WETLANDS (PSWs) AND 30-M FROM ALL OTHER WETLANDS WERE APPLIED. MEANDERBELT WIDTHS WERE CALCULATED AS 20 TIMES THE BANKFULL WIDTHS ESTIMATED FROM THE CORRESPONDING DRAINAGE AREAS. PLEASE REFER TO "REFERENCE MANUAL FOR DETERMINATION OF REGULATION LIMITS" (LSRCA, 2005) OR CONTACT LSRCA (905-895-1281) FOR MORE INFORMATION

1:10,000

0 0.25 0.5 1 1.5 2

Kilometers

NO.	REVISIONS	DATE
0	ONTARIO REGULATION 179/06 APPROVED	MAY 8, 2006
1	Mapping revisions to the regulation limit have been completed as referenced in the document "Regulation Limit Changes, May 2007"	SEPTEMBER 28, 2007

CHECKED - NATURAL HERITAGE: KB
CHECKED - REGULATIONS: JP
CHECKED - ENGINEERING: JP
APPROVED: TH
DATE: JANUARY 2006
MAPPED BY: JB

(ONTARIO REGULATION 97/04)

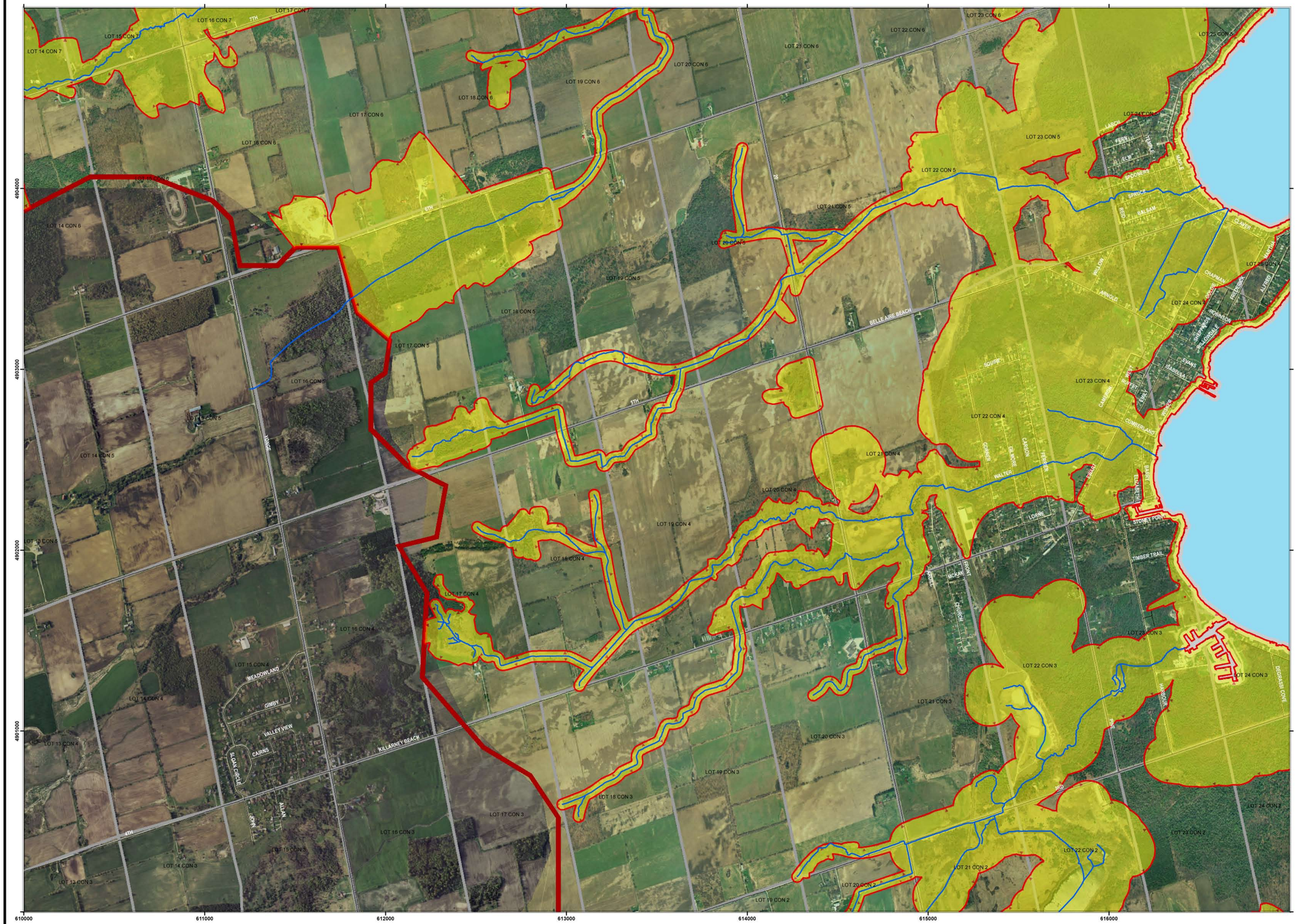
REGULATION OF DEVELOPMENT, INTERFERENCE WITH WETLANDS AND ALTERATIONS TO SHORELINES AND WATERCOURSES.

ONTARIO REGULATION 179/06

PLOT DATE: SEPTEMBER 2007

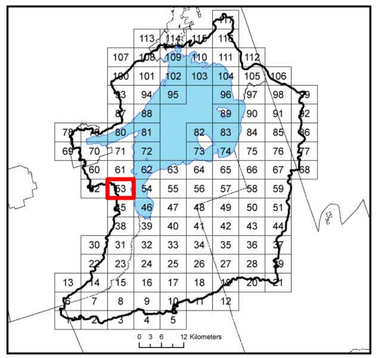
FILE LOCATION:

SHEET NO. 61 OF 117



Legend

- WATERCOURSE
- ROAD
- REGULATION AREA
- LOT_CONCESSION
- LSRCA JURISDICTION
- MUNICIPAL BOUNDARY
- LAKE SIMCOE



THE REGULATION AREA IS A COMPILATION OF VARIOUS INFORMATION SOURCES. 2002 ORTHOPHOTOS WERE CAPTURED BY FIRST BASE SOLUTIONS. RIVERINE HAZARDS WERE BASED ON EXISTING FLOOD PLAIN MAPPING. FLOOD PLAIN LIMITS WHERE ENGINEERING PRODUCTS DID NOT EXIST WERE DETERMINED BY LSRCA STAFF. RIVERINE EROSION HAZARDS WERE DETERMINED BY LSRCA STAFF. A 15-METER SETBACK WAS APPLIED FROM THE LIMITS OF ALL RIVERINE HAZARDS. SHORELINE FLOOD HAZARDS WERE DETERMINED BY LSRCA STAFF BY APPLYING THE EQUATIONS PREVIOUSLY DEVELOPED THROUGH AN ENGINEERING STUDY. SHORELINE EROSION HAZARDS WERE DETERMINED BY LSRCA STAFF. WETLANDS WERE DELINEATED BY LSRCA STAFF USING THE ECOLOGICAL LAND CLASSIFICATION (ELC) SYSTEM AND BY THE MINISTRY OF NATURAL RESOURCES. SETBACKS OF 120-M FROM PROVINCIALLY SIGNIFICANT WETLANDS (PSWs) AND 30-M FROM ALL OTHER WETLANDS WERE APPLIED. MEANDERBELT WIDTHS WERE CALCULATED AS 20 TIMES THE BANKFULL WIDTHS ESTIMATED FROM THE CORRESPONDING DRAINAGE AREAS. PLEASE REFER TO "REFERENCE MANUAL FOR DETERMINATION OF REGULATION LIMITS" (LSRCA, 2005) OR CONTACT LSRCA (905-895-1281) FOR MORE INFORMATION

1:10,000

0 0.25 0.5 1 1.5 2

Kilometers

NO.	REVISIONS	DATE
0	ONTARIO REGULATION 179/06 APPROVED	MAY 8, 2006
1	Mapping revisions to the regulation limit have been completed as referenced in the document "Regulation Limit Changes, May 2007"	SEPTEMBER 28, 2007

CHECKED - NATURAL HERITAGE	KB
CHECKED - REGULATIONS	JP
CHECKED - ENGINEERING	JP
APPROVED	TH
DATE:	JANUARY 2006
MAPPED BY:	JB

(ONTARIO REGULATION 97/04)

REGULATION OF DEVELOPMENT, INTERFERENCE WITH WETLANDS AND ALTERATIONS TO SHORELINES AND WATERCOURSES.

ONTARIO REGULATION 179/06

PLOT DATE: SEPTEMBER 2007

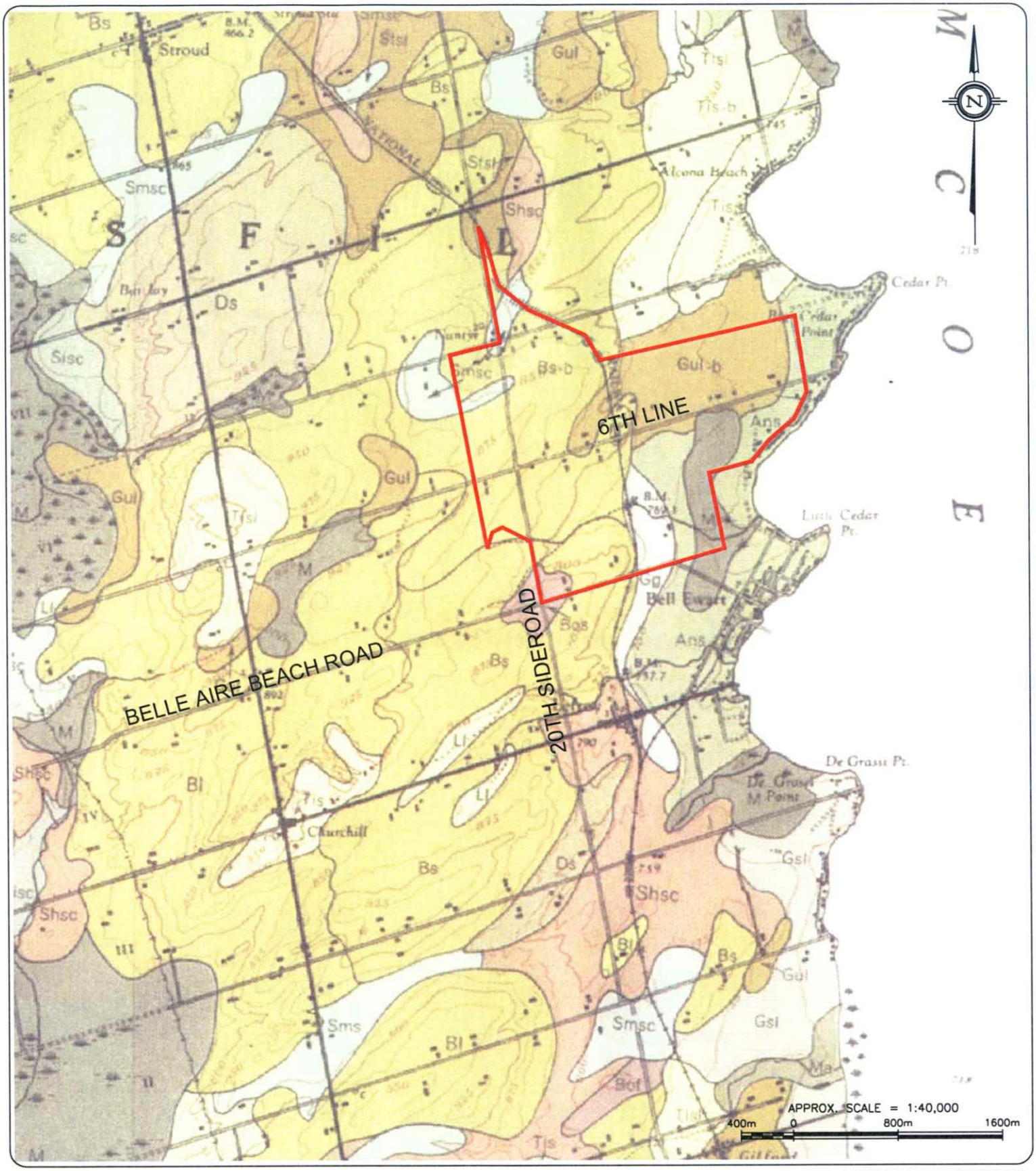
FILE LOCATION:

SHEET NO. 53

OF 117

APPENDIX D

Soils and Well Water Information



Legend:

Study Area

Actively Cultivated Soils

- Bs Bondhead sandy loam
- Bs-b Bondhead sandy loam stony
- Gul-b Guerin loam stony phase
- Bes Berrien sandy loam
- M Muck poor drainage
- Gg Gwillimbury sand loam
- Ans Alliston sandy loam imperfect

Source: Base map provided by the Soils Research Institute Research Branch, Canada Department of Agriculture, 1959

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

SOILS MAP

Date Issued:	March 2007
Created By:	PHD
Project No.	07-013
File Name:	Soils Appendix

ALCONA SOUTH SECONDARY PLAN

Figure No.

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	05	021	57-14359	614400 4904250	0825	1976/12	3135	05	FR	0092	065	080	0002	04:30	DO	0092	03	RIZOS JIM LOAM 0001 YLLW CLAY 0007 BRWN CLAY GRVL STNS 0014 GREY CLAY 0092 SAND GRVL WBRG 0095 SAND GRVL CLAY 0095
CON	05	021	57-10851	614547 4903039	0830	1974/01	3203	05	FR	0117	090	092	0006	01:10	DO	0119	03	SKREBUTENAS J PRDG 0058 GREY CLAY 0117 BRWN SAND 0122
CON	05	021	57-05474	614380 4903070	0825	1968/11	4102	30	FR	0024	024		0004	:	DO			AEKENS R BRWN CLAY 0008 BLUE CLAY 0024 CLAY MSND 0031 BLUE CLAY 0057
CON	05	022	57-01003	614753 4903746	0770	1958/10	3414	04	FR	0020	FLW			:	DO	0023	04	WHALER C PRDG 0012 CLAY 0020 CSND 0027
CON	05	022	57-01002	615442 4903471	0760	1958/10	3414	04	FR	0064	FLW	020	0001	01:00	DO	0069	04	SHEWAN J MALACARNE J PRDG 0012 CLAY 0064 FSND 0069 CLAY 0190
CON	05	022	57-20854	999999 9999999		1985/08	4778	06	FR	0108	065	080	0010	03:00	DO		03	LEBLANC, HAROLD BRWN CLAY BLDR 0018 BLUE CLAY GRVL SAND 0045 BLUE CLAY 0086 BLUE CLAY CMTD SAND 0108 MSND CSND 0111
CON	05	023	57-08355	615945 4903750	0725	1969/07	4102	30	FR	0017	FLW			:	DO			SHANK T BLCK LOAM 0002 BLUE CLAY 0017
CON	05	023	57-28432	999999 9999999		1991/09	3660	05	FR	0068	011	059	0006	01:00	DO	0069	05	CAVENOUGH, SHAINE BRWN CLAY 0016 GREY CLAY 0050 GREY CLAY SOFT 0062 GREY CLAY HARD 0068 GREY SILT FSND WBRG 0075 GREY CLAY HARD 0075
CON	05	023	57-19468	615550 4903400	0750	1984/10	3660	05	FR	0030	007	017	0015	02:00	DO	0035	03	REID A BLCK LOAM 0001 BRWN CLAY GRVL 0020 BRWN GRVL DRTY 0026 GREY CLAY 0030 BRWN MSND 0038
CON	05	023	57-26575	999999 9999999		1990/04	1467	05	FR	0200		180	0004	02:30	DO	0200	05	FALCONER, HUGH LOAM 0001 BRWN SAND CLAY 0012 GREY CLAY 0029 GREY GRVL CLAY 0074 GREY CLAY 0128 GREY CLAY GRVL 0195 GREY SILT 0199 CSND 0200 MSND FSND 0204
CON	05	023	57-31240	999999 9999999		1994/10	2513	06	FR	0055		055	0005	01:30	DO	0059	03	GLASS, S. LOAM 0001 YLLW SAND 0003 BRWN MUCK 0016 GREY SILT SAND CLAY 0055 GREY SAND SILT 0062
CON	05	023	57-24645	999999 9999999		1989/02	2513	06	FR	0022	002	017	0020	01:00	DO	0027	03	REID, L. BRWN SAND GRVL 0002 LOAM 0003 YLLW SAND CLAY BLDR 0010 GREY CLAY 0022 GREY SAND LYRD 0030
CON	05	023	57-29315	999999 9999999		1992/06	3660	06	FR	0016	005	017	0010	01:00	DO	0029	03	BROWN, DAN BLCK MUCK 0007 GREY CLAY 0011 GREY CLAY GRVL 0016 BRWN SAND WBRG 0032
CON	05	023	57-27004	999999 9999999		1990/08	1851	07	FR	0025		010	0020	01:00	DO	0029	03	MOLIZIA, GUY BLCK LOAM 0001 GREY CLAY 0025 GREY SAND WBRG 0032
CON	05	023	57-29314	999999 9999999		1992/06	3660	06	FR	0018	001	026	0004	01:00	DO	0034	03	PEART, G. BRWN SAND FILL 0004 BLCK MUCK 0011 GREY CLAY 0018 BRWN SAND 0037
CON	05	024	57-01017	616106 4903873	0726	1961/07	2516	06	FR	0024	002	005	0002	01:30	DO			EADIE A BRWN CLAY 0003 BLUE CLAY 0023 FSND 0024
CON	05	024	57-01018	616262 4903881	0722	1961/07	2516	06	FR	0013	FLW			:	DO			CAMPBELL U BLCK MUCK 0003 BLUE CLAY 0012 FSND 0013
CON	05	024	57-01019	616127 4903872	0725	1961/07	2516	06	FR	0026	006	006	0003	02:00	DO			KNEESHAW D BRWN CLAY 0005 BLUE CLAY 0025 FSND 0026
CON	05	024	57-01020	616169 4903772	0724	1961/07	2516	06	FR	0016	FLW			:	DO			BULL R BLCK MUCK 0003 BLUE CLAY 0015 FSND 0016

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	STAT WATER FOUND FEET	LVL FEET	PUMP TEST LVL FEET	TEST RATE GPM	TIME HR:MN	WATER USE	SCREEN DEPTH FEET	LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	05	024	57-13855	616320 4903600	0720	1976/11	3660	05	SU	0060	FLW	045	0006	02:00	DO	0060	03
CON	05	024	57-01021	616321 4903775	0722	1961/07	2516	06	FR	0020	FLW			:	DO		
CON	05	024	57-01022	616164 4903673	0722	1961/07	2516	06	FR	0016	FLW			:	DO		
CON	05	024	57-01033	616388 4903838	0722	1966/04	5414	02	FR	0049	FLW			:	DO		
CON	05	024	57-01024	616185 4903805	0723	1961/08	2516	06	FR	0019	FLW			:	DO		
CON	05	024	57-01015	616282 4904024	0724	1961/06	2516	06	FR	0015	FLW			:	DO		
CON	05	024	57-01026	616030 4903853	0730	1962/08	2516	06	FR	0019	002	018	0008	02:00	DO		
CON	05	024	57-01028	615532 4903345	0760	1962/08	2516	06	FR	0021	FLW	020	0006	01:00	DO		
CON	05	024	57-01029	616046 4903863	0730	1962/08	2516	06	FR	0018	001	015	0005	01:00	DO		
CON	05	024	57-01030	616322 4903630	0622	1965/06	5414	02	FR	0118	FLW			:	DO		
CON	05	024	57-01031	616153 4904034	0625	1964/07	5414	02	FR	0012	FLW			:	DO		
CON	05	024	57-01032	616140 4903820	0624	1964/07	5414	02	FR	0037	FLW			:	DO		
CON	05	024	57-01023	616094 4903732	0723	1961/08	2516	06	FR	0030	009	012	0003	02:00	DO		
CON	05	024	57-01007	616377 4904201	0722	1955/12	5434	02	FR	0011	FLW			:	DO		
CON	05	024	57-16484	616200 4903850	0725	1979/11	3660	05	FR	0025	FLW	025	0010	03:00	DO	0030	03
CON	05	024	57-16176	616100 4903900	0730	1979/07	3660	05			002	015	0012	02:00	DO	0031	03
CON	05	024	57-16068	616400 4903600	0725	1979/05	3203	05	UK	0232	FLW	002	0030	10:00	DO	0241	04
CON	05	024	57-15571	616000 4903900	0730	1978/08	3660	05	FR	0039	004	025	0012	01:00	DO	0039	03
CON	05	024	57-15204	616500 4903700	0705	1978/03	3203	05	FR	0180	FLW	100	0005	02:00	DO		
CON	05	024	57-14833	616300 4903800	0715	1977/12	3660	05	SU	0060	001	045	0008	02:00	DO	0063	03
CON	05	024	57-01004	616257 4903917	0724	1953/07	5451	02	FR		FLW			:	DO		

NIZICH BOB
BRWN FILL 0002 BLCK LOAM 0004 GREY CLAY GRVL 0050
BLUE CLAY 0060 GREY FSND 0063
CHUVALO A
BLCK MUCK 0003 BLUE CLAY 0019 FSND 0020
QUINN S
BLCK MUCK 0003 BLUE CLAY 0015 FSND 0016
THOMAS K
BLCK MUCK 0004 GREY CLAY 0012 FSND 0028 GREY CLAY
0035 BLUE CLAY STNS 0049 GRVL MSND 0050
BARCLEY M
BLCK MUCK 0003 FSND 0019
RICE A
BLCK MUCK 0003 BLUE CLAY 0014 FSND 0015
ROSZELL A
BLUE CLAY BLDR 0015 MSND GRVL 0019
MCCLEVERTY R
BLCK MUCK 0015 BLUE CLAY 0020 MSND GRVL 0021
ABRAM T H
BLUE CLAY BLDR 0017 MSND GRVL 0018
PICCIONI D
BLCK MUCK 0005 GREY CLAY 0015 CSND 0035 GREY CLAY
0057 QSND 0092 BLUE CLAY STNS 0097 GREY GRVL 0105
WHIT CLAY 0118 MSND 0119
AUSTIN G
MUCK 0005 HPAN 0012
MONTEMURROS
BLCK MUCK 0004 FSND 0036 WHIT HPAN 0037 FSND 0038
SANNUTO J
BRWN CLAY STNS 0012 FSND 0028 FSND GRVL 0030
AXMITH L
LOAM FILL 0003 GRVL 0009 CLAY 0011 MSND GRVL 0014
BARCLAY M
BRWN SAND CLAY 0025 GREY MSND 0045
GOHEEN S
GREY CLAY 0016 GREY GRVL CMTD 0027 GREY SAND GRVL
WBRG 0033 BRWN MSND 0036
SZMEISER J
BLCK LOAM 0001 BRWN FILL 0003 BLCK MUCK WDFR STNS
0020 GREY SAND 0025 GREY CLAY 0160 GREY CLAY STNS
SILT 0232 GREY GRVL 0245 CLAY LMSN 0245
STROUD M
BRWN SAND FILL 0004 GREY CLAY BLDR 0032 GREY MSND
GRVL 0039 BRWN MSND 0042
BLANKENSTIEN A
PRDG 0010 BRWN SAND CLAY 0026 GREY CLAY 0180 GREY
GRVL 0185
LOSENNO ROCCO
BRWN FILL 0002 BLCK LOAM 0004 BRWN CLAY 0010 BLUE
CLAY 0041 GREY SAND GRVL 0044 GREY CLAY 0060 GREY
SAND FGRD 0066
KING H
BLCK MUCK 0003 MSND 0018 CSND 0025

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	05	024	57-06982	616140 4904010	0735	1969/11	5414	02	FR	0044	001	006	0030	02:00	DO		MALONEY A BLCK LOAM 0001 GREY GRVL BLDR 0015 BRWN GRVL MSND 0044
CON	05	024	57-01006	616316 4903804	0722	1955/05	3512	04	FR	0062	FLW			:	DO		BOWEN C BLCK MUCK 0010 MSND 0023 MSND GRVL 0066
CON	05	024	57-01016	616212 4903842	0724	1961/07	2516	06	FR	0021	004	011	0003	02:00	DO		HAGAN G BRWN CLAY 0002 BLUE CLAY 0020 FSND 0021
CON	05	024	57-01008	616207 4903836	0724	1952/08	2516	06	FR	0019	FLW			:	DO		LEE C MSND GRVL 0019
CON	05	024	57-01009	616078 4903862	0726	1957/08	2516	06	FR	0023	006	017	0001	02:00	DO		GREEN P W MSND GRVL 0023
CON	05	024	57-01010	616225 4904033	0726	1957/08	2516	06	FR	0025	006	019	0001	02:00	DO		NEWLY F MSND GRVL 0025
CON	05	024	57-01011	616019 4903996	0735	1957/08	2516	06	FR	0027	009	018	0001	02:00	DO		PARSINS J M MSND GRVL 0027
CON	05	024	57-01012	616269 4903854	0723	1957/08	2516	06	FR	0020	FLW			:	DO		SUTTON C MSND GRVL 0020
CON	05	024	57-01013	616058 4904006	0735	1957/08	2516	05	FR	0025	006	019	0001	01:00	DO		OTTER R MSND GRVL 0025
CON	05	024	57-01014	616150 4903550	0723	1957/08	2516	05	FR	0018	FLW			:	DO		LAVERY C GRVL MSND 0018
CON	05	024	57-01027	616269 4903847	0722	1962/08	2516	06	FR	0025	FLW	015	0005	02:00	DO		ASHTON H BLCK CLAY 0007 BLUE CLAY 0023 MSND GRVL 0025
CON	05	024	57-01005	616278 4904048	0723	1953/08	5451	02	FR		FLW			:	DO		CARAVELL J GRVL 0001 MUCK 0004 MSND 0010 CSND 0015
CON	05	024	57-08147	616180 4903550	0720	1971/08	3645	05	FR	0218	FLW	010	0007	24:00	DO		WEST E MSND LOAM 0003 STNS MSND CLAY 0020 HPAN 0068 MSND SILT 0080 CLAY HPAN 0127 MSND SILT 0145 HPAN 0218
CON	05	024	57-05557	616300 4903730	0720	1968/10	3203	05	FR	0034	FLW			:	DO	0033 03	HOLT C LOAM MUCK 0009 GREY CLAY MSND 0034 MSND GRVL 0036 MSND GRVL CLAY 0037
CON	05	024	57-05547	616380 4904100	0720	1968/09	3203	05	FR	0014	FLW			:	DO		BEATTY LOAM 0001 CLAY MSND 0011 BLDR 0014 FSND CLAY 0020
CON	05	024	57-01025	616021 4904056	0735	1962/08	2516	06	FR	0028	009	019	0010	01:00	DO		GAIR J BRWN CLAY 0010 BLUE CLAY 0025 GRVL 0028
CON	05	024	57-11285	616281 4903766	0725	1974/06	4102	05	FR	0046	001	055	0007	03:00	DO	0065 06	PARIS D LOAM 0004 BRWN CLAY STNS SAND 0017 GREY SILT 0032 GREY CLAY 0046 GRVL 0051 GREY SAND 0073
CON	05	024	57-11286	616224 4903777	0725	1974/06	4102	05	FR	0038	FLW	041	0002	01:30	DO	0041 03	BAKER P LOAM 0004 BLUE CLAY STNS 0030 BLUE CLAY GRVL 0038 GREY CSND 0044
ON	05	024	57-11624	616020 4903800	0725	1974/09	3203	06	FR	0021	FLW	012	0006	02:45	DO	0026 03	DORCAS C BRWN SAND 0002 BLCK LOAM 0006 GREY SAND CLAY 0012 GREY CLAY 0021 GREY SAND 0029
ON	05	024	57-06442	616060 4904050	0730	1969/07	4608	30	FR	0019	011	018		01:00	DO		BYRNE MABLE BRWN CLAY STNS 0019 GREY MSND 0021
ON	05	024	57-01034	616280 4903804	0722	1966/04	5414	02	FR	0039	FLW			:	DO		BOWER C BLCK MUCK 0005 GREY CLAY 0014 FSND 0029 BLUE CLAY 0039 GRVL MSND 0040
ON	05	024	57-28007	999999 9999999		1991/04	2513	06	FR	0024	002	015	0025	01:00	DO	0024 03	MONAGHAN, S. LOAM 0001 BRWN SAND SILT 0003 GREY SILT SAND CLAY 0013 GREY SILT SAND 0024 GREY CSND SILT 0027

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	05	024	57- 33070	999999 9999999		1997/09 2513	06	FR	0219		132	0010	01:00	DO	0219	03	MCCALLUM, D LOAM DKCL 0001 GREY SAND GRVL FILL 0002 BRWN MUCK SAND 0010 GREY SILT SAND 0022 GREY CLAY 0060 GREY SILT CLAY SAND 0083 GREY CLAY 0123 GREY CLAY SAND CMTD 0209 GREY SILT SAND CMTD 0219 GREY SILT SAND 0222
CON	05	024	57- 18811	616350 4903750	0700	1983/11 2514	06	FR	0197	FLW	180	0004	24:00	DO			WELSH H FILL 0001 BLCK MUCK 0002 GREY CLAY SAND 0032 GREY CLAY 0120 GREY SILT SAND HARD 0132 GREY CLAY GRVL 0197 GREY SAND GRVL CMTD 0210
CON	05	024	57- 16694	616300 4903650	0725	1979/03 2514	06	FR	0024	002	020	0018	01:30	DO	0025	03	GEORGE V BLCK LOAM 0001 BRWN CLAY STNS 0024 GREY SAND GRVL 0028
CON	05	024	57- 16770	616350 4904200	0725	1980/06 3660	05	FR	0025	FLW	020	0015	01:00	DO	0028	03	RINOMATO T BLCK LOAM 0001 GREY CLAY STNS 0015 BRWN SAND GRVL 0045
CON	05	024	57- 16771	616350 4904000	0725	1980/06 3660	05			005	185	0005	24:00	DO	0219	04	POLAN A BLCK LOAM 0002 GREY CLAY SOFT 0033 GREY CLAY HARD 0058 GREY SAND CLAY 0065 BLUE CLAY STKY 0130 GREY CLAY GRVL HARD 0212 GREY CLAY SAND GRVL 0220 GREY SAND GRVL 0223
CON	05	024	57- 17855	616150 4904100	0725	1981/05 2514	06	FR	0027	002	025	0010	01:00	DO	0027	03	TAYLOR A BLCK LOAM 0001 BRWN CLAY 0016 GREY CLAY 0027 GREY SAND 0033
CON	05	024	57- 20026	616100 4904150	0725	1985/07 4816	06			011		0002	02:00	DO	0040	03	ROBERTS A CLAY FILL 0004 FSND STNS 0015 GREY CLAY STNS SOFT 0032 MSND 0044
CON	05	024	57- 24566	999999 9999999		1989/01 1851	07	ER	0027	FLW	015	0015	04:00	DO	0027	06	JUNGET, PETER BLCK LOAM MUCK 0008 BRWN SAND GRVL 0027 GREY SAND LOOS WBRG 0033
CON	05	024	57- 24567	999999 9999999		1989/02 1851	07	SU	0062	015	055	0003	48:00	DO	0063	36	PARRENT BRWN FILL 0005 BRWN LOAM 0007 BRWN SAND GRVL 0023 GREY CLAY 0062 GREY SAND WBRG 0079
CON	05	024	57- 29153	999999 9999999		1992/05 3660	06	FR	0020	FLW	010	0007	01:00	DO	0023	03	WAGHORN,AF BLCK LOAM 0002 BLCK SAND 0014 GREY CLAY SAND GRVL 0020 GREY MSND WBRG CSND 0026
CON	05	024	57- 31083	999999 9999999		1994/09 2513	06	FR	0212	FLW	078	0020	01:30	DO	0212	03	HOLT C.G. YLLW SAND 0003 BRWN MUCK 0010 GREY CLAY STNS 0012 GREY SAND 0020 GREY CLAY SOFT 0032 GREY CLAY STNS 0060 GREY SILT FSND CLAY 0121 GREY CLAY SAND BLDR 0162 GREY CLAY SAND BLDR 0212 YLLW MSND 0215
CON	05	024	57- 28001	999999 9999999		1991/04 4645	06	FR	0032	FLW	032	0020	01:00	DO	0029	03	795399 ONT LTD. BLCK LOAM FILL 0004 GREY CLAY SILT SAND 0015 BRWN CSND LOOS 0040
CON	05	024	57- 28504	999999 9999999		1991/09 6386	05	FR	0018	001	004	0008	03:00		0022	04	WHITE DAN. BLUE SAND STNS PCKD 0006 BLUE GRVL SILT PCKD 0011 BRWN SAND GRVL LYRD 0026
CON	05	024	57- 24565	999999 9999999		1989/02 1851	07	FR	0024		010	0020	02:00	DO	0024	06	STRICKLAND, BORD BRWN LOAM 0001 BRWN CLAY SAND 0024 BRWN SAND CL WBRG 0030
CON	05	024	57- 18161	615950 4903950	0725	1982/08 3660	05	FR	0039	006	025	0009	01:00	DO	0042	03	HAMILTON T BRWN SAND 0015 GREY CLAY 0039 CSND 0045

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	05	024	57-25561	999999 9999999		1989/08	3660	05	FR	0015		010	0006	01:00	DO	0030	03	BROCKLEBANK TOM GREY CLAY STNS 0015 GREY MSND FSND WBRG 0033
CON	05	024	57-18438	616150 4903800	0700	1982/05	2514	06	FR	0020	FLW	021	0009	01:00	DO	0029	03	SANGIULIANO D BLCK MUCK 0002 GREY SILT SAND 0020 GREY SAND SILT 0032
CON	05	024	57-26120	999999 9999999		1989/03	3135	05	FR	0236	005	100	0004	04:00	DO	0238	04	YANDT, D. CLAY 0010 CLAY SAND 0040 CLAY GRVL 0085 CLAY 0134 CLAY SAND 0165 CLAY GRVL CMTD 0236 SAND 0242
CON	05	024	57-25655	999999 9999999		1988/03	2514	06	FR	0036		020	0010	03:00	DO			CRAFTON, K. GREY GRVL SAND CLAY 0034 GRVL SAND 0036
CON	05	024	57-26374	999999 9999999		1990/03	2513	06	FR	0218	FLW	020	0030	01:00	DO	0218	04	SHIFF, N. BRWN SAND GRVL FILL 0002 BRWN MUCK SAND 0021 GREY CLAY SILT BLDR 0212 GREY SILT SAND 0218 GREY SAND SILT 0222
CON	05	025	57-11651	616450 4904500	0725	1974/10	2514	06	FR	0028	008	020	0020	01:00	DO	0030	03	RAY PEARCE PRDG 0012 GREY SILT SAND BLDR 0028 GREY MSND CSND GRVL 0033
CON	05	025	57-14925	616950 4904900	0720	1977/08	4608		UK	0008	014			:	DO			KOZELJ SAND 0004 GRVL 0005 GREY CLAY 0024
CON	05	025	57-15151	617100 4905200	0725	1976/05	3660	05	FR	0042	005	030	0010	01:00	DO	0050	03	PARIS FRANK PRDG 0020 GREY SAND CLAY 0042 BRWN SAND 0053
CON	05	025	57-01042	616344 4903733	0722	1962/08	2516	06	FR	0023	FLW	012	0004	01:00	DO			LOGAN C BLCK MUCK 0007 BLUE CLAY 0015 MSND GRVL 0023
CON	05	025	57-09722	616450 4904500	0725	1972/08	2514	06	FR	0028	005	028	0015	01:30	DO	0028	03	HOLT H LOAM 0001 BRWN CLAY BLDR GRVL 0017 GREY CLAY SAND 0025 GREY CLAY GRVL 0028 GREY SAND GRVL 0031
CON	05	025	57-01041	616987 4905086	0730	1960/03	2514	06	FR	0080	006	075	0014	02:00	DO	0077	03	DENNIS R LOAM 0001 BRWN CLAY 0007 BLUE CLAY 0062 FSND 0075 MSND GRVL 0080
CON	05	025	57-01040	616556 4904698	0735	1958/10	3107	04	FR	0045	010			:	DO			CAPP R PRDG 0020 CLAY MSND GRVL 0045 GRVL 0046
CON	05	025	57-01039	616500 4904583	0730	1949/06	5451	02	FR	0035	FLW			:	DO			HIGGINS L GRVL FILL 0002 MSND 0015 CLAY 0028 GRVL 0035
CON	05	025	57-01038	616482 4904514	0730	1947/06	4404	02	MN					:	DO			SHARFE S MSND 0025 CLAY 0153
CON	05	025	57-01037	616651 4904696	0730	1946/08	4404	02	FR					:	DO			BERSTEIN
CON	05	025	57-01036	616567 4904624	0730	1946/08	4404	02	FR					:	DO			DOLMAN
CON	05	025	57-01035	616494 4904581	0730	1946/05	4404	02	FR					:	DO			FINE A
CON	05	025	57-16041	616750 4905050	0730	1978/06	3203	05	FR	0032	007	021	0011	01:00	DO	0040	03	FILICE P BRWN CLAY 0014 GREY CLAY 0032 GREY SAND GRVL 0043
CON	05	025	57-18033	616450 4904600	0725	1981/06	3135	05	FR	0030	008	020	0010	01:30	DO	0035	03	ABATE V LOAM 0001 CLAY 0030 SAND 0038
CON	05	025	57-19747	616800 4904650	0700	1984/12	2514	06	FR	0148	009	078	0020	01:00	DO	0148	03	POSLUNS A SAND FILL 0005 BRWN CLAY BLDR 0008 GREY CLAY GRVL BLDR 0070 GREY FSND VERY 0075 GREY CLAY 0124 GREY SILT FSND VERY 0148 BLCK CSND SILT 0151 GREY CLAY 0151
CON	05	025	57-27548	999999 9999999		1990/07	4919	30	UK	0060	020	040	0010	01:00	DO			DIMINIAN, II BRWN LOAM HARD 0001 BRWN CLAY HARD 0040 GREY CLAY SAND LYRD 0079

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	06	018	57-01052	612349 4904935	0930	1965/08	2514	FR	0050	020	035	0020	04:00	ST DO	0051	03	DUNCAN J PRDG 0034 BLUE CLAY MSND 0040 MSND GRVL CLAY 0050 MSND GRVL 0054
CON	06	018	57-28048	999999 9999999		1971/04	3660	05 FR	0039	010	027	0006	01:00	DO	0039	03	SENDAIL, F. J. MUCK SAND 0005 BRWN CLAY 0011 GREY CLAY HARD 0036 GREY FSND 0042
CON	06	019	57-08514	613100 4905220	0880	1971/10	3203	05 FR	0069	040	060	0006	01:00	DO			KELLOUGH M PRDG 0047 GREY CLAY 0067 GREY CLAY SILT 0069 GREY SAND 0070
CON	06	019	57-01053	612984 4905216	0865	1962/11	4102	30 FR	0040	020		0002	:	DO			STEWART B BLUE CLAY 0040 MSND 0048
CON	06	019	57-27571	999999 9999999		1990/11	2514	09 FR	0035	FLW	026	0010	02:30	DO	0035	09	BRONW D. NSS BLCK LOAM 0001 BRWN CLAY 0018 GREY CLAY SNDY 0034 GREY MSND 0045
CON	06	020	57-08932	613670 4905400	0870	1972/06	3203	05 FR	0139	075	080	0008	02:30	DO			BIRD W BRWN LOAM 0002 BRWN GRVL STNS 0019 BRWN CLAY GRVL 0026 GREY CLAY 0045 GREY CLAY SAND STNS 0098 GREY SAND CLAY 0128 GREY CLAY GRVL 0139
CON	06	020	57-27594	999999 9999999		1990/10	1467	05 SU	0036	002	025	0012	02:00	DO	0040	04	REID, MERIL BRWN FILL 0001 BRWN SAND STNS 0009 GREY SAND CLAY 0036 GREY SAND 0045 GREY CLAY SAND 0045
CON	06	020	57-25448	999999 9999999		1989/07	1467	05 FR	0039	FLW	028	0008	02:00	DO	0044	04	REID, ROSS SAND FILL 0001 BLCK LOAM 0003 BRWN CLAY 0017 GREY CLAY STNS 0030 GREY SAND CLAY 0039 GREY FSND 0039
CON	06	021	57-01054	613838 4905495	0825	1959/12	1308	30 FR	0006	006		0000	:	PS			SCHOOL BOARD AREA BRWN CLAY 0002 BRWN MSND 0012 BLUE CLAY MSND BLDR 0024
CON	06	021	57-01055	613855 4905357	0827	1965/10	2514	06 FR	0144	068	085	0010	01:30	DO			JOHNSON A LOAM 0001 BRWN CLAY MSND BLDR 0014 BLUE CLAY BLDR 0035 MSND 0057 MSND GRVL SILT 0110 CLAY 0118 GRVL MSND SILT 0143 CSND 0144 GRVL 0145
CON	06	022	57-24252	999999 9999999		1988/10	3903	06 FR	0175	019	087	0250	24:00	MN	0175	20	RIZZARDO, V. BRWN SAND GRVL LYRD 0020 GREY CLAY STNS HARD 0046 GREY CLAY DNSE 0076 GREY CLAY STNS HARD 0090 GREY CLAY SOFT DNSE 0125 GREY CLAY STNS HARD 0175 GREY SAND GRVL LYRD 0195 BRWN SAND CLAY LYRD 0198 GREY CLAY STNS HARD 0213
CON	06	022	69-14380	614750 4904550	0815	1977/12	3108	05 UK	0095	063	083	0015	02:00	DO	0104	03	MCQUARRIE GORD BRWN CLAY 0020 BLUE CLAY GVLY 0091 BLUE SAND 0107
CON	06	023	57-08266	615150 4905920	0760	1971/08	3203	05 FR	0175	030	180	0004	02:00	DO	0192	03	CARR L PRDG 0021 BRWN SAND GRVL 0026 BLUE CLAY 0175 GREY SAND SILT 0195
CON	06	023	57-26783	999999 9999999		1990/02	4645	06 FR	0050	FLW	040	0008	02:30	DO	0046	04	FORTUNE HERB BRWN CLAY SILT 0010 GREY CLAY SILT 0022 GREY SILT CLAY SAND 0040 BRWN SAND SILT 0050 GREY CLAY SILT 0050
CON	06	024	57-07405	615750 4906120	0745	1970/07	3203	05 FR	0135		060	0005	01:00	DO	0157	03	SPEARE BOB BRWN LOAM 0001 BRWN CLAY GRVL 0009 GREY CLAY GRVL 0018 GREY CLAY 0046 GREY CLAY GRVL STNS 0088 GREY CLAY 0134 GREY SILT 0157 MSND 0160
CON	06	024	57-16177	616100 4906300	0730	1977/03	3413	30 FR	0021	006	020	0004	04:00	DO			DOUG P LOAM 0002 BLUE CLAY 0021 GRVL LTCL 0026

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	06	024	57-06176	616450 4905900	0740	1969/02	3203	04	FR	0039		026	0005	01:00	DO	0049	03	POZNANSKI JOHN LOAM 0001 CLAY MSND 0010 MSND CLAY 0023 GREY CLAY 0039 FSND 0052 FSND CLAY 0059
CON	06	024	57-15454	616200 4905800	0740	1978/07	4816	06	FR	0176	008	120	0010	01:30	DO	0174	03	FARLEY W SAND GRVL CLAY 0040 CLAY SAND 0050 FSND CLAY 0062 CLAY 0080 FSND 0085 FSND GRVL CLAY 0176 MSND 0182
CON	06	024	57-32379	999999 9999999		1996/07	1583	06	FR	0164	037	154	0035	03:00	DO	0161	03	BRYAN, BONIS BRWN SAND CLAY STNS 0017 CLAY GRVL 0056 CLAY SILT 0125 GREY CLAY SOFT 0143 CLAY SILT 0162 CGVL 0164 CLAY HARD 0168
CON	06	024	57-27846	999999 9999999		1990/01	3203	05	FR	0081	016	075	0004	02:00	DO	0083	04	SMALL, J. BRWN CLAY SAND 0005 GREY CLAY 0039 GREY CLAY SAND 0081 GREY FSND 0089
CON	06	025	57-01061	616484 4906303	0725	1967/07	2514	06	FR	0042		042	0005	02:00	DO	0042	03	THOMPSON B L PRDG 0003 MSND 0012 BLUE CLAY MSND 0030 BLUE CLAY MSND STNS 0042 MSND 0045
CON	06	025	57-06225	616460 4905860	0745	1969/04	4608	30	FR	0018	018			:	DO			JALICK G BRWN CLAY MSND STNS 0025
CON	06	025	57-06191	616370 4906010	0740	1969/02	2514	06	FR	0056	015	057	0003	03:00	DO	0057	03	HOOPERS G FILL 0002 FSND 0007 MSND CLAY 0049 FSND CLAY 0056 GREY FSND 0060
CON	06	025	57-06177	616380 4905820	0730	1968/02	3203	04	FR	0039	008	034	0005	01:00	DO	0050	03	DWINNELL W LOAM 0001 CLAY MSND 0014 CLAY 0037 MSND SILT 0042 MSND 0053 CLAY MSND 0056
CON	06	025	57-13823	616350 4905740	0730	1976/08	3413	30	FR	0036	005	015	0006	04:00	DO			MILLINEUM HOMES BRWN CLAY 0004 BLUE CLAY 0036
CON	06	025	57-13811	616470 4905870	0730	1976/10	3742	30	FR	0040	010	035	0003	02:00	DO			MILLINEUM HOMES BRWN CLAY 0025 BLUE CLAY 0040 CSND 0042
CON	06	025	57-13810	616500 4905790	0730	1976/10	3742	30	FR	0035	006	025	0005	02:00	DO			MILLINEUM HOMES BRWN SAND 0012 BLUE CLAY 0035 CSND 0038
CON	06	025	57-01057	616636 4906196	0725	1960/05	1515	02	FR	0022	FLW		0006	00:30	DO	0022	04	MADZA J BLCK MUCK 0015 BLUE CLAY 0022 GRVL 0026
CON	06	025	57-01058	616565 4905808	0735	1961/06	3414	04	FR	0052	003	023	0010	02:00	DO	0052	04	BRADY B CLAY MSND STNS 0001 YLLW CLAY BLDR 0052 MSND 0056
CON	06	025	57-13824	616490 4905850	0730	1976/08	3413	30	FR	0036	005	015	0006	04:00	DO			MILLINEUM HOMES BRWN CLAY 0004 BLUE CLAY 0036
CON	06	025	57-01060	616668 4906127	0725	1966/09	5414	02	FR	0029	004	010	0006	03:00				LONG J LOAM 0003 GREY CLAY 0018 HPAN CLAY 0029 MSND 0030
CON	06	025	57-01062	616627 4906107	0725	1967/08	4608	30	FR	0007	007		0002	:	DO			PARKER LOAM 0001 GREY CLAY STNS 0018
CON	06	025	57-13385	616400 4906040	0730	1975/01	3203	05	FR	0032	004	018	0008	02:00	DO	0037	03	SINGLETON W BRWN SAND 0009 GREY CLAY 0032 GREY SAND 0040
CON	06	025	57-09509	616350 4906250	0730	1972/11	3203	05	FR	0040	006	035	0005	01:10	DO	0043	03	HISCOCK BLCK LOAM 0002 BRWN SAND 0015 GREY CLAY SAND 0030 GREY SAND CLAY 0040 GREY SAND 0046
CON	06	025	57-13408	616440 4905940	0730	1975/04	3203	05	FR	0028	004	010	0006	00:30	DO	0033	03	POSNANSKI TED BRWN CLAY SAND STNS 0008 GREY CLAY 0028 GREY SAND 0037
CON	06	025	57-09414	616460 4906050	0730	1972/12	1555	30	UK	0018	003	022	0018	02:00	DO			ROSSWAY J-OCCHINOO CLAY 0004 GRVL 0010 CLAY STNS 0016 CLAY STNS 0022
CON	06	025	57-11174	616298 4907638	0750	1974/07	3202	05	FR	0037	008	049	0004	01:45	DO	0054	03	RIUKIN L BRWN SAND ROCK 0035 GREY SAND 0037 GREY SAND 0053 GREY SAND CLAY 0057

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	06	025 57-13420	617000 4905260	0730	1975/11	3203	05	FR	0081		070	0003	02:00	DO	0080	05	BAKERS KEN R BRWN SAND CLAY 0006 GREY CLAY SAND 0050 GREY SAND 0055 GREY CLAY 0081 GREY SAND 0085
CON	06	025 57-01056	616542 4906331	0722	1956/06	5434	02	FR	0019	FLW			:	DO			HOOPER A G CSND GRVL 0015 CLAY 0019 QSND 0021
CON	06	025 57-01059	616166 4905977	0745	1966/08	5414	02	FR	0076	008	018	0002	03:00				HORTON M CLAY 0009 GRVL 0023 GREY CLAY 0048 HPAN CLAY 0053 MSND 0056 GREY CLAY 0075 MSND 0076
CON	06	025 57-06618	616560 4905770	0740	1969/08	3203	04	FR	0228	FLW	030	0005	01:00	DO	0229		BELL LOAM 0001 BRWN MSND 0005 CLAY STNS GRVL 0047 CLAY SILT 0073 CLAY 0228 MSND 0332 LMSN 0334
CON	06	025 57-11995	616550 4906100	0725	1974/10	4102	30	FR	0021	004			:	DO			MUISE J LOAM 0002 BRWN CLAY BLDR PCKD 0017 BLUE CLAY LOOS PORS 0021 BRWN FSND 0022
CON	06	025 57-07746	616650 4906360	0720	1970/12	1657	05	FR	0242	FLW	120	0015	04:00	DO			MCCOLEMAN M FILL 0005 BRWN PEAT 0017 GREY CLAY MSND 0024 MSND 0027 GREY CLAY MSND 0184 BLUE CLAY 0220 GREY CLAY MSND 0242 ROCK 0250
CON	06	025 57-14280	616450 4905400	0740	1977/04	3660	05	FR	0027	010	025	0006	01:00	DO	0032		BEAUMONT JIM GREY CLAY SILT 0025 GREY SAND CLAY 0027 BRWN SAND GRVL 0035
CON	06	025 57-06751	616400 4906390	0730	1969/10	4102	30	FR	0030	005			:	DO			DERRICK T BRWN CLAY 0005 CSND 0015 BLUE CLAY 0024 BLUE FSND SILT 0030
CON	06	025 57-12075	616300 4906200	0735	1974/10	4102	30	FR	0027	006			:	DO			HESTER E LOAM 0002 BRWN CLAY PORS 0016 BLUE CLAY PCKD 0027 GREY FSND 0028
CON	06	025 57-07415	616250 4906260	0730	1970/08	3203	05	FR	0047	010	038	0004	01:15	DO	0049	03	GORDENER H R BRWN MSND 0002 BRWN GRVL 0006 BRWN CLAY STNS 0011 GREY CLAY GRVL 0026 GREY CLAY MSND 0036 GREY SILT 0047 GREY MSND 0054
CON	06	025 57-16390	616250 4905850	0740	1979/08	4816	06	FR	0088	030		0006	04:00	DO	0084	05	FARLEY W SAND 0014 CLAY 0035 SAND 0055 CLAY 0057 CLAY SAND LYRD 0088 FSND SILT 0125 CLAY 0217 BLCK FSND 0251 CSND 0290
CON	06	025 57-13826	616700 4905850	0730	1976/08	3413	30	FR	0041	005	015	0006	04:00	DO			MILLINEUM HOMES BRWN CLAY 0004 BLUE CLAY 0041
CON	06	025 57-07604	616340 4905930	0740	1970/11	3203	05	FR	0038	010	028	0005	01:00	DO	0042	03	JAMES F BRWN FILL MSND 0002 BRWN CLAY STNS 0020 GREY CLAY STNS 0038 GREY MSND 0045
CON	06	025 57-13907	616500 4906390	0720	1976/12	1204	05	FR	0191	FLW	004	0007	17:30	DO	0191	03	NICHOLSON GEO BRWN SAND CLAY 0045 GREY SILT CLAY 0063 GREY CLAY 0191 BRWN SAND GRVL 0194
CON	06	025 57-13827	616430 4905750	0730	1976/09	3413	30	FR	0030	005	015	0006	04:00	DO			MILLINEUM HOMES BRWN CLAY 0004 BLUE CLAY 0030
CON	06	025 57-06229	616460 4905860	0745	1969/03	4608	30	FR		018			:	DO			JALICK G BRWN STNS CLAY MSND 0025
CON	06	025 57-28287	999999 9999999		1991/07	2652	06	SU	0114		118	0003	01:30	DO	0111	06	F. CONTRACTING. BRWN MSND 0010 GREY CLAY CMTD 0028 GREY HPAN 0052 GREY SAND GRVL SILT 0059 GREY CLAY 0114 GREY SAND 0121 GREY CLAY HPAN 0138

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	06	025 57-20321	616650 4905900	0725	1985/09	3203	05	FR	0226		010	0012	01:00	DO			SHIELDS.R BRWN CLAY 0018 GREY CLAY SAND 0029 GREY CLAY 0052 GREY CLAY SAND SLTY 0077 GREY CLAY 0224 GREY GRVL CMTD 0226 GREY GRVL LYRD 0228
CON	06	025 57-28331	999999 9999999		1991/08	1851	07	FR	0035	005	020	0015	02:00	DO	0031	04	STEVEN,.GUTTS BLCK LOAM 0001 GREY SAND BLDR CLAY 0026 BRWN SAND FGVL WBRG 0035
CON	06	025 57-26238	999999 9999999		1989/11	4919	30	UK	0060	010	030	0010	01:00	DO			JONES BRWN LOAM HARD 0001 BRWN CLAY HARD 0060 GREY SAND LOOS 0067
CON	06	025 57-31717	999999 9999999		1995/06	6875	24	FR	0018	008	035	0001	24:00	NU	0035	05	TWP OF INNISFIL BRWN SILT SNDY FILL 0008 GREY SILT SNDY TILL 0018 GREY FSND SLTY DNSE 0025 GREY SILT SNDY DNSE 0040
CON	06	025 57-26990	999999 9999999		1990/08	1467	05	FR	0029	014	028	0004	02:30	DO	0040	07	THORN DOUG & HARY LOAM 0001 BRWN SAND CLAY 0012 GREY CLAY SAND 0029 GREY SAND 0048 GREY SAND CLAY 0048
CON	06	025 57-19168	616300 4905950	0725	1984/03	3742	30			008	032	0004	04:00	DO			LETIZIA HOMES BRWN CLAY 0015 BLUE CLAY 0036 CSND 0040
CON	06	025 57-25471	999999 9999999		1989/08	2513	06	FR	0089	012	095	0010	01:00	DO	0099	04	CLEMENTS, A. YLLW SAND CLAY BLDR 0008 GREY CLAY SAND BLDR 0089 GREY FSND SILT VERY 0103
CON	06	025 57-19744	616550 4906400	0700	1984/11	2514	06	UK	0245	004	130	0020	02:30	DO			KING I LOAM DKCL 0001 YLLW SAND 0011 GREY SILT CLAY SAND 0078 GREY CLAY 0214 GREY SILT SAND GRVL 0234 GREY LMSN 0249
CON	06	025 57-20097	616600 4905850	0725	1984/11	3413	30	FR	0030	007	025	0005	02:00	DO			MORRIELLO CONSTR LOAM 0002 BLUE CLAY 0030 SAND 0033
CON	06	025 57-25721	999999 9999999		1989/08	1583	11	FR	0173	010	024	0030	24:30	NU	0165	06	MECKLINGER, SHELLY GREY CLAY GRVL STNS 0030 GREY CLAY SILT 0090 FSND SILT VERY 0102 GREY CLAY VERY DNSE 0137 GREY CLAY SILT 0150 GREY FSND DRTY 0157 GREY CLAY VERY DNSE 0163 GREY CSND 0175 GREY CLAY 0180
CON	06	025 57-31719	999999 9999999		1995/06	6875	24	FR	0020	008	035	0001	24:00	NU	0035	05	TOWNSHIP OF INNISFIL BRWN SAND SLTY DNSE 0012 GREY CLAY SAND DNSE 0040
CON	06	025 57-31720	999999 9999999		1995/06	6875	24	FR	0025	008	035	0000	24:00	NU	0035	05	TWP OF INNISFIL BRWN SAND SLTY FILL 0015 GREY CLAY SAND TILL 0025 GREY SILT FSND 0033 GREY CLAY STNS TILL 0040
CON	06	025 57-28577	999999 9999999		1991/09	1851	07	FR	0037		033	0004	03:45	DO	0038	03	JAME, GAUAGER BRWN SAND STNS BLDR 0010 GREY CLAY SAND GRVL 0037 BRWN SAND WBRG 0041 GREY CLAY 0041
CON	06	025 57-25469	999999 9999999		1989/08	2513	06	FR	0085	012	082	0010	01:00	DO	0087	04	PEACOCK, W. YLLW SAND CLAY 0019 GREY CLAY SAND BLDR 0085 GREY FSND VERY 0091
CON	06	025 57-31718	999999 9999999		1995/06	6875	24	FR	0025	008	035	0002	24:00	NU	0035	05	TWP OF INNISFIL GREY SILT SAND DNSE 0025 GREY SAND SLTY DNSE 0035 GREY SILT SAND DNSE 0040
CON	06	025 57-25470	999999 9999999		1989/08	2513	06	FR	0036	001	024	0010	01:00	DO	0043	03	VERHEUL, P. BRWN MUCK SAND 0008 BRWN CLAY 0036 GREY SAND SILT 0046
CON	06	025 57-19750	616650 4906200	0700	1984/09	2514	06	FR	0048		045	0015	01:00	DO	0048	03	MAGUIRE J LOAM MUCK GRVL 0002 GREY CLAY 0018 GREY SAND SILT CLAY 0048 GREY FSND 0051

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR:MN	WATER USE	SCREEN DEPTH FEET	SCREEN LENGTH FEET	OWNER DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
CONTINUING... INNISFIL TOWNSHIP																	
CON	06	026	57-01064	616978 4906098	0725	1947/06	4404	02	FR	0039	002			:	DO		SHARPE S MSND 0020 CLAY 0039
CON	06	026	57-13391	617050 4905950	0750	1975/03	3203	05	FR	0044	008	017	0007	01:00	DO	0052 03	TOMSIE F BRWN CLAY STNS 0019 GREY CLAY 0044 BRWN SAND 0050 GREY SAND 0055
CON	06	026	57-15189	616900 4906200	0725	1978/04	4816	06	FR	0045	FLW	028	0015	02:00	DO	0044 04	ARBCKEL J PRDG 0015 CLAY 0030 MSND CLAY LYRD 0040 FSND 0055
CON	06	026	57-08319	617020 4905260	0725	1971/09	4608	30	FR	0022	022	028	0005	01:00	DO		DIAMOND P BRWN CLAY STNS 0022 GREY CLAY STNS 0034
CON	06	026	57-10817	617350 4905750	0725	1973/11	3203	05	FR	0045	006	035	0006	01:15	DO	0049 04	ALLENDALE CONT-YOUNG BRWN SAND STNS 0017 GREY CLAY 0045 BRWN SAND 0053 CLAY 0053
CON	06	026	57-15589	616900 4906300	0725	1978/08	4816	06	FR	0040	FLW	040	0005	02:00	DO	0042 04	JEFFORD J SAND 0013 CLAY 0030 MSND CLAY LYRD 0040 FSND 0049
CON	06	026	57-09503	616870 4906200	0720	1972/11	3203	05	FR	0042	FLW		0005	01:00	DO	0056 03	GORRIE BLCK LOAM 0001 BRWN SAND 0007 GREY SAND CLAY 0042 GREY SAND CLAY 0059
CON	06	026	57-13988	617050 4905300	0730	1976/07	4608	30			020			:	DO		KOZELY J SAND 0004 GRVL 0005 GREY CLAY 0029
CON	06	026	57-14026	617200 4905730	0725	1976/11	2514	06	FR	0099	010	101	0003	02:30	DO	0099 04	ELLIOTT GORDON LOAM DKCL 0001 BRWN SAND BLDR 0003 GREY SILT CLAY SAND 0099 GREY FSND 0103 GREY SAND SILT CLAY 0103
CON	06	026	57-01063	616806 4906119	0726	1957/06	5434	02	FR	0045	FLW			:	DO		PRESTON M BLCK MUCK 0010 HPAN 0044 MSND 0045
CON	06	026	57-11803	616900 4906000	0735	1974/11	2648	06	FR	0142	FLW		0002	03:00	DO	0142 03	POSLUNS JACK LOAM 0001 BRWN CLAY SAND 0019 BLUE CLAY GRVL 0031 BLUE CLAY 0111 SILT 0135 SILT SAND 0142 SAND SILT 0145
CON	06	026	57-13413	616850 4905960	0730	1975/03	3203	05	FR	0036	007	023	0007	01:00	DO	0046 03	LUDVIK ED BRWN CLAY STNS 0016 GREY CLAY 0035 BRWN SAND 0036 GREY SAND 0046 GREY GRVL CLAY 0046
CON	06	026	57-13422	617200 4905700	0725	1975/11	3203	05	FR	0089	012	042	0005	01:00	DO	0093 04	MUCKNIK BRWN CLAY 0014 GREY CLAY SAND STNS 0051 GREY SAND CLAY 0054 GREY CLAY 0089 GREY FSND 0097
CON	06	026	57-08306	616750 4905850	0730	1971/09	4608	30	FR	0032	017	024	0004	01:00	DO		VOISIN J BRWN CLAY STNS 0020 GREY CLAY STNS 0032
CON	06	026	57-27100	999999 9999999		1990/04	4919	30	UK	0020	005	015	0010	01:00	DO		ABEANETHY BRWN CLAY HARD 0001 GREY CLAY HARD 0020 GREY SAND LOOS 0028
CON	06	026	57-28151	999999 9999999		1991/06	1851	07	FR	0044		045	0008	02:00	DO	0045 03	ALLISON, NORMAN BRWN FILL 0002 BLCK MUCK 0015 GREY CLAY 0044 GREY SAND 0048
CON	06	026	57-19589	616950 4905900	0725	1984/11	3030	36	FR	0020				:	DO		MORRIELLO CONSTR BRWN LOAM 0001 BRWN SAND 0012 GREY SAND 0014 GREY SILT 0025
CON	06	026	57-32167	999999 9999999		1996/03	3413	06	FR	0068	006	060	0010	03:00	DO	0071 03	GORDON E. NITCHELL BRWN SAND 0008 BRWN CLAY 0021 GREY CLAY 0068 GREY SAND GRVL 0074
CON	06	026	57-28152	999999 9999999		1971/06	1851	07	FR	0045		044	0004	02:00	DO	0045 03	SUTHERLAND, H. BLCK LOAM 0003 BLCK MUCK 0023 GREY SAND CLAY 0042 GREY SAND GRVL 0045 GREY SAND 0048

APPENDIX E

Ontario Breeding Bird Atlas Information

Square Summary (17PK10)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
16	10	59	85	24	39	71	134	27	150	22	0

Region summary (#13: Simcoe County)

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
68	63	65	181	190	2075	850

Target number of point counts in this square: 24 road side, 1 off road (1 in deciduous forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Common Loon	S		52	28
Pied-billed Grebe	T		32	22
Double-crest Cormorant §	X		27	11
American Bittern			44	50
Least Bittern †	S		23	12
Great Blue Heron §	H	H	63	77
Great Egret †	X		3	0
Green Heron §	T		70	84
Black-crown N.-Heron † §			9	12
Yellow-crn N.-Heron †			0	0
Turkey Vulture	T	T	84	77
Canada Goose	NY		95	58
Trumpeter Swan †	AE		43	0
Wood Duck	FY		78	76
Gadwall ‡			4	6
American Wigeon	H		12	6
American Black Duck	P		47	44
Mallard	FY	S	95	93
Blue-winged Teal	FY		53	79
Northern Shoveler	P		10	11
Northern Pintail	H		7	14
Green-winged Teal	H		18	0
Canvasback †	X		1	0
Redhead †			1	3
Ring-necked Duck	P		21	4
Lesser Scaup ‡	X		1	1
Bufflehead †	X		1	0
Hooded Merganser	FY		30	25
Common Merganser	FY		46	36

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Red-breast Merganser	X		20	9
Osprey	NY		53	42
Northern Harrier	CF	AE	66	76
Sharp-shinned Hawk	H	CF	60	50
Cooper's Hawk	FY	FY	47	17
Northern Goshawk	AE		27	15
Red-should Hawk †	H		44	17
Broad-winged Hawk	A	NY	66	58
Red-tailed Hawk	FY	AE	81	92
American Kestrel	FY	AE	76	85
Merlin ‡	FY		21	1
Gray Partridge ‡			1	0
Ring-necked Pheasant	T		10	15
Ruffed Grouse	FY	H	81	92
Wild Turkey	D		81	0
Yellow Rail †			3	3
King Rail †			3	3
Virginia Rail	FY		47	36
Sora	NE		43	31
Common Moorhen			12	17
American Coot	P		12	15
Coot/Moorhen			0	0
Sandhill Crane ‡			21	0
Killdeer	A	NE	96	96
Spotted Sandpiper	A	DD	78	95
Upland Sandpiper			38	60
Dunlin †	X		1	0
Common Snipe	FY	H	61	79
American Woodcock	D	FY	72	79

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Ring-billed Gull §	H		33	6
Herring Gull §	H	H	38	49
Caspian Tern †	X		3	1
Common Tern §	H		23	34
Forster's Tern † §			1	0
Black Tern † §	T		21	30
Rock Dove	AE	AE	84	87
Mourning Dove	NB	NE	95	95
Black-billed Cuckoo	T		75	58
Yellow-billed Cuckoo			18	6
Black/Yell-billed Cuckoo	NE		18	0
Eastern Screech-Owl	S		49	12
Great Horned Owl	T	P	55	74
Barred Owl	X		49	20
Long-eared Owl ‡			4	3
Short-eared Owl †			4	1
North Saw-whet Owl			12	9
Common Nighthawk			40	63
Whip-poor-will			38	60
Chimney Swift	X	P	32	63
Ruby-thr Hummingbird	FY	H	95	88
Belted Kingfisher	NY	FY	92	95
Red-head Woodpecker †	T	NY	29	65
Yellow-bellied Sapsucker	NY	FY	95	80
Downy Woodpecker	NY	CF	96	95
Hairy Woodpecker	CF	S	93	95
Northern Flicker	AE	CF	95	98
Pileated Woodpecker	T	S	93	80
Olive-sided Flycatcher			20	22

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Ontario Breeding Bird Atlas - Summary Sheet for Square 17PK10 (page 2 of 3)

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Eastern Wood-Pewee	NB	P	96	96
Alder Flycatcher	NE		76	47
Willow Flycatcher	NE		55	42
Least Flycatcher	H	H	89	88
Eastern Phoebe	T	NU	96	95
Gr Crested Flycatcher	AE	FY	96	98
Eastern Kingbird	FY	CF	95	98
Loggerhead Shrike †			3	15
Yellow-throated Vireo ‡			26	30
Blue-headed Vireo	H		38	9
Warbling Vireo	CF	CF	93	92
Philadelphia Vireo ‡			4	1
Red-eyed Vireo	A	CF	96	93
Blue Jay	FY	FY	96	96
American Crow	NY	FY	96	98
Common Raven			55	7
Horned Lark	FY	T	47	68
Purple Martin	FY	CF	27	61
Tree Swallow	NY	NE	96	98
North Rgh-wing Swallow	H	FY	56	68
Bank Swallow §	AE	NY	58	88
Cliff Swallow §	NY	AE	63	82
Barn Swallow	FY	NY	95	96
Black-capp Chickadee	NY	FY	96	96
Tufted Titmouse †			0	1
Red-breast Nuthatch	A		90	52
White-breast Nuthatch	NY	CF	93	87
Brown Creeper	H		60	55
Carolina Wren ‡	T		6	1

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
House Wren	NY	FY	95	87
Winter Wren	A	A	95	68
Sedge Wren			20	19
Marsh Wren	N	S	33	42
Golden-crown Kinglet	X		21	7
Ruby-crown Kinglet	X		7	6
Blue-gr Gnatcatcher ‡	A	S	24	14
Eastern Bluebird	FY		73	57
Veery	T	S	96	95
Swainson's Thrush	H		20	14
Hermit Thrush	T		69	39
Wood Thrush	FY	S	92	90
American Robin	NE	NE	96	98
Gray Catbird	NE	CF	96	98
Northern Mockingbird			18	6
Brown Thrasher	A	H	92	96
European Starling	FS	NY	96	98
Cedar Waxwing	FY	CF	96	98
Blue-winged Warbler			24	4
Golden-winged Warbler			43	30
Blue/Gold-wing Warbler ‡			15	0
Brewster's Warbler †			3	0
Nashville Warbler	T	CF	84	74
Northern Parula	H		21	12
Yellow Warbler	NE	NY	92	98
Chestn-sided Warbler	T	FY	95	68
Magnolia Warbler	H		58	20
Black-thr Blue Warbler			63	22
Yellow-rumped Warbler	A	S	78	41

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Black-thr Green Warbler	T		90	34
Blackburnian Warbler	S		58	28
Pine Warbler	FY		80	26
Kirtland's Warbler †			0	1
Prairie Warbler †			9	6
Palm Warbler ‡	X		1	0
Bay-breasted Warbler ‡	X		3	1
Blackpoll Warbler ‡	X		1	0
Cerulean Warbler †			16	12
Black-white Warbler	T	FY	93	84
American Redstart	FY	A	90	85
Ovenbird	A	CF	96	98
North Waterthrush	A	A	86	61
Connecticut Warbler ‡	X		1	0
Mourning Warbler	FY	CF	81	63
Common Yellowthroat	FY	FY	95	92
Canada Warbler	H		56	46
Scarlet Tanager	H		86	79
Eastern Towhee			73	53
Chipping Sparrow	NY	NY	96	96
Clay-colored Sparrow	T		36	14
Field Sparrow	T	A	87	84
Vesper Sparrow	H	FY	70	84
Savannah Sparrow	CF	CF	81	88
Grasshopper Sparrow			41	38
Song Sparrow	CF	NY	96	98
Swamp Sparrow	A	CF	86	84
White-throat Sparrow	FY	FY	87	95
Dark-eyed Junco	H		21	25

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Ontario Breeding Bird Atlas - Summary Sheet for Square 17PK10 (page 3 of 3)

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st
Northern Cardinal	CF	NY	84	66
Rose-breast Grosbeak	FY	NU	93	95
Indigo Bunting	CF	DD	93	90
Bobolink	NE	CF	83	87
Red-wing Blackbird	NY	NY	96	96
Eastern Meadowlark	NE	CF	83	88
Western Meadowlark ‡			1	6
Yellow-h Blackbird †			0	1
Rusty Blackbird ‡	X		1	1
Brewer's Blackbird ‡			7	3
Common Grackle	CF	CF	96	96
Brown-head Cowbird	FY	FY	95	98
Orchard Oriole ‡			1	0
Baltimore Oriole	AE	CF	96	96
Purple Finch	T	S	73	66
House Finch	NY		72	3
Red Crossbill ‡			1	7
White-winged Crossbill ‡			3	1
Pine Siskin			18	17
American Goldfinch	FY	A	96	98
Evening Grosbeak			15	15
House Sparrow	AE	NY	75	88

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #13 (Simcoe County). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17PK10 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #13). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 30/01/2007. An up-to-date version of this sheet is available from http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17PK10

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Select the reference sheet you would like to display: Breeding Evidence Codes

Go back to Data Entry

OBSERVED

X	Species observed in its breeding season (no breeding evidence).

POSSIBLE

H	Species observed in its breeding season in suitable nesting habitat.
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

PROBABLE

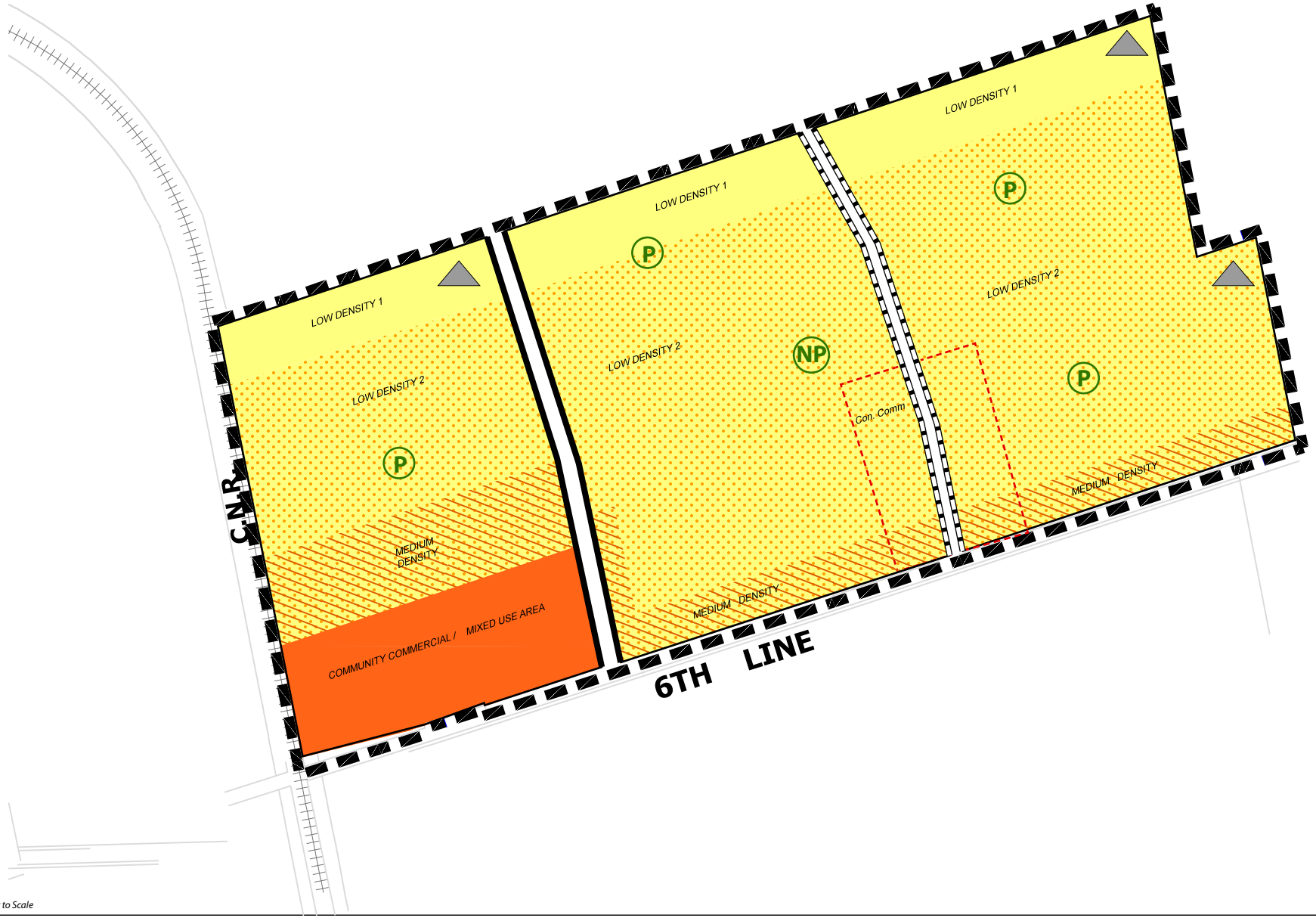
P	Pair observed in suitable nesting habitat in nesting season.
T	Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more appart, at the same place.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult.
B	Brood Patch on adult female or cloacal protuberance on adult male.
N	Nest-building or excavation of nest hole.

CONFIRMED

DD	Distraction display or injury feigning.
NU	Used nest or egg shells found (occupied or laid within the period of the survey).
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest.
FS	Adult carying fecal sac.
CF	Adult carying food for young.
NE	Nest containing eggs.
NY	Nest with young seen or heard.

APPENDIX F

Alcona South Secondary Plan – Concept Plan



Not to Scale

- RD1 - Low Density Residential 1
- RD2 - Low Density Residential 2
- Medium Density Residential
- Community Commercial / Mixed Use
- Convenience Commercial
- Parkette
- Neighbourhood Park
- Storm Water Pond
- Major Collector
- Minor Collector
- Secondary Plan Boundary

NORTH

Alcona Secondary Plan - Land Use Map

March 27, 2013

APPENDIX G

Historic Aerial Photography


1954


1989
ASC-89091