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Phase 1 Discussion Paper

Natural Heritage

Prepared by:

North-South Environmental Inc.
Specialists in Sustainable Landscape Planning



Prepared for:



Project Study Team

North-South Environmental Inc.

Mirek Sharp – project advisor

Leah Lefler – report author

Sal Spitale – report editor



Abstract

The Town of Innisfil is undergoing a review of its Official Plan. The natural environment, which includes forests, wetlands, streams, lakes and meadows, plays an important part in the unique character of the Town. It is important to have an accurate understanding of the natural features that are located within the Town, including their significance and the function they contribute to the overall health of the Town's environment.

The following Discussion Paper outlines various options for the Town of Innisfil to consider for updating mapping of natural heritage features, identifying Natural Heritage Systems (i.e., natural areas connected by habitat to allow plants and animals to move around the landscape), and updating policies to protect the natural environment.



Executive Summary

Our natural environment can make a strong contribution to the identification of “Our Place” as it provides representation of the landscape that defines the physical and biophysical nature of the Town of Innisfil. Marketing and showcasing natural environmental features is part of identifying how the Town is unique, and differentiates it from its neighbours.

Several pieces of environmental policy and legislation have come into effect since the Town’s last Official Plan was prepared, including the Ontario Endangered Species Act (2007), Lake Simcoe Protection Plan (2009) and new Species at Risk (SAR) listings. Furthermore, an updated Provincial Policy Statement (2014) was recently released, and Simcoe County is also undergoing the process of updating the County Official Plan. In addition, updates to natural heritage data layers are ongoing. These updates are based on (a) changes that occur on the landscape (e.g., removal of a woodland, or natural succession of a meadow to a thicket); and (b) updated information that has been acquired through detailed field surveys or desktop analysis (e.g., an Environmental Impact Study completed for a specific property, or a desktop exercise completed to estimate woodland cover within the Town).

This Discussion Paper highlights the changes that are mandatory to be consistent with current policy and legislation, and outlines options for how the Town of Innisfil may address these changes where decisions are needed to update policies and natural heritage mapping. The following topics are discussed:

- options for updating the natural heritage goals included in the Town of Innisfil’s Official Plan;
- options for natural heritage system policies, including a review of the direction provided in the 2014 Provincial Policy Statement;
- options for incorporating the 2007 Ontario Endangered Species Act and the habitat of Species at Risk (including recently listed species) in Official Plan policies;
- options for incorporating the policies and direction of the Lake Simcoe Protection Plan;
- options for updating mapping of natural heritage features, particularly mapping of woodlands and wetlands;
- options for incorporating significant wildlife habitat in the Natural Environmental Areas designation;
- options for refining natural heritage feature and natural heritage system boundaries;
- options for delineating or refining the natural heritage system for the Town of Innisfil;
- options for implementing recommendations made in subwatershed plans; and
- options for protecting Innisfil’s urban tree canopy.



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1.0 Introduction

Our natural environment can make a strong contribution to the identification of “Our Place” as it provides representation of the landscape that defines the physical and biophysical nature of the Town of Innisfil. Marketing and showcasing these natural environmental features is part of identifying how the Town is unique, and differentiates it from its neighbours. This speaks most strongly to the first project goal for the Official Plan Review process, to “firmly embed place-making principles that create a sense of place and build emotional connections between all residents and Innisfil”, and also contributes substantially to the third goal, “establishing a solid foundation for decisions under the Planning Act”. This last point is especially germane considering recent changes to the PPS (2014) regarding natural heritage systems (NHS).

Several pieces of environmental policy and legislation have come into effect since the Town’s last Official Plan was prepared, including the Ontario Endangered Species Act (2007), Lake Simcoe Protection Plan (2009) and new Species at Risk (SAR) listings. An updated Provincial Policy Statement (2014) was recently released, and Simcoe County is also undergoing the process of updating the County Official Plan. This Discussion Paper highlights the changes that are mandatory to be consistent with current policy and legislation, and outlines options for how the Town of Innisfil may address these changes where decisions are needed to update policies and mapping of natural heritage features.

2.0 Natural Heritage Goals

The Town of Innisfil’s current Official Plan states that:

“The intent of the Natural Environment policies is to protect significant natural heritage features and functions for their ecological benefit, contribution to human health, and to preserve the natural heritage of the Town of Innisfil. Where possible, this is to be achieved through the protection of natural heritage features within a Natural Heritage System and within the Natural Environment Area designation”.

The Objectives of the Simcoe County Greenlands include the following in Policy 3.8.1:

“to protect and restore the natural character, form, function, and connectivity of the natural heritage system of the County of Simcoe, and to sustain the natural heritage features and areas and ecological functions of the Greenlands and local natural heritage systems for future generations”

The Lake Simcoe Protection Plan includes the following objective:

“protect, improve or restore the elements that contribute to the ecological health of the Lake Simcoe watershed, including, water quality, hydrology, key natural heritage features and their functions, and key hydrologic features and their functions”.



Consideration could be given to revising the natural heritage goals of the Town to include elements of restoration and rehabilitation, and include reference to NHS. This would bring the Town's goals for the natural environment policies more in line with direction provided by the County, and the Province (in both the Lake Simcoe Protection Plan and the 2014 Provincial Policy Statement).

Options for Updating Natural Heritage Goals:

- Consider updating the Natural Environment policy goal to include elements of restoration and rehabilitation, and NHS planning and protection.

3.0 2014 Provincial Policy Statement

Section 2.1 Natural Heritage of the 2014 Provincial Policy Statement contains policies for the long term protection of natural features including significant wetlands, significant woodlands, significant valleylands, wildlife habitat and significant areas of natural and scientific interest. Section 2.2 Water includes policies that restrict site alteration in or near sensitive surface water features and sensitive ground water features. Municipalities are required to be consistent with and potentially exceed the level of protection provided by the Provincial Policy Statement.

3.1 Natural Heritage System Policies

The definition of NHS provided in the 2014 PPS is:

“natural heritage system: means a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue. The Province has a recommended approach for identifying natural heritage systems, but municipal approaches that achieve or exceed the same objective may be used.”

The 2014 PPS puts a greater emphasis on NHSs and the use of a systems approach to protecting natural heritage, and now requires municipalities to identify NHSs while recognizing that they will “vary in size and form in settlement areas, rural areas, and prime agricultural areas” (Policy 2.1.3, PPS 2014). The definition of NHS also now includes “working landscapes”, which is interpreted to mean agricultural land that can be included in a NHS owing to the ecological function it provides, but it does not mean that it needs to be naturalized.



3.2 Harmonization with the Endangered Species Act

Policy 2.1.7 of the 2014 PPS states that “Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements”. This updated policy is harmonized with the Ontario Endangered Species Act (ESA), which came into effect in 2007. The ESA provides automatic legal protection of species classified as endangered or threatened in Ontario, including habitat protection.

Options for Harmonizing Official Plan policies with the PPS:

- Consider including a policy to address Policy 2.1.7 of the 2014 PPS to protect the habitat of endangered species and threatened species from development and site alteration, except in accordance with provincial and federal requirements.

4.0 Endangered Species Act 2007

The Ontario Endangered Species Act (ESA, 2007) came into effect after the last Official Plan was adopted by Council. The ESA provides automatic legal protection of species classified as endangered or threatened, including habitat protection. In policy 2.1.7, the 2014 PPS states that “Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements”. As such, the PPS policies are harmonized with the ESA, 2007.

Also, several Species at Risk have been listed by the Committee on the Status of Species at Risk in Ontario (COSSARO) since the completion of the last Official Plan which are listed and protected under the ESA. These species and their habitat requirements/preferences are provided below:

- Eastern Meadowlark and Bobolink – hayfields, meadows, grasslands
- Butternut – woodlands
- Wood Thrush and Eastern Wood-pewee – deciduous forest
- Barn Swallow and Bank Swallow – barns and banks, respectively
- Eastern Small-footed Bat and Little Brown Bat – trees and buildings/barns, caves, mines, bridges, rocks/rock outcrops

Features included under the Natural Environmental Area designation in the Town’s current Official Plan (Policy 3.1.1.1) include “significant habitat of endangered species and threatened species”. Policy 3.1.1.1 does not include grasslands or meadowlands, the habitat of Eastern Meadowlark and Bobolink, which are both listed as Threatened under the Ontario ESA. The natural habitat requirements (i.e., not including the human-made habitats used by bats and swallows) of the other recently listed SAR have already been incorporated within the Natural Environmental Area designation (e.g., deciduous forest).



Policy 3.1.1.8 of the Town's current Official Plan specifies that "No development or site alteration are permitted in provincially significant wetlands, or significant habitat of endangered species and threatened species". This policy should be updated to reflect the wording included in the updated PPS (2014) and ESA to include "except in accordance with provincial and federal requirements". Consideration should also be given to providing a separate policy for wetland protection, and separate policy to address the protection of endangered and threatened species and their habitats.

The Department of Fisheries and Oceans (DFO) provides an annual update of Ontario aquatic SAR distribution maps, Critical Habitat and colour-coded segments for fish and mussel SAR in Ontario. These maps provide a useful resource for integrating Federal SARA legislation into the planning and development process. The maps and data are designed to assist with the screening of projects for the presence of aquatic SAR at proposed development project sites. Reference to this mapping resource could be included in the Official Plan in relation to Environmental Impact Study (EIS) or other ecological study requirements.

Options for addressing the Ontario Endangered Species Act (2007):

- Consider including grasslands and meadowlands larger than 15 ha under the Natural Environmental Area designation in Policy 3.1.1.1.
- Consider revising Policy 3.1.1.8 to be consistent with recent changes to the PPS (2014) to include "except in accordance with provincial and federal requirements" as it relates to the protection of SAR habitat.
- Consider revising Policy 3.1.1.8 to include two policies, one for the protection of wetlands, and one for the protection of SAR and SAR habitat.
- Consider including a reference to the DFO mapping for aquatic SAR as a useful screening tool to refer to in the EIS or other ecological study process.

5.0 Lake Simcoe Protection Plan 2009

The Town of Innisfil is situated on the west shore of Lake Simcoe. The Lake Simcoe watershed contains significant natural, urban and agricultural systems including parts of the Oak Ridges Moraine and the Greenbelt. It also supports PSWs, woodlands and prime agricultural areas (Ministry of Environment et al. 2009). In the Town, Lake Simcoe is an important destination for residents and visitors, who are looking to experience a natural setting and recreational opportunities. Many residences (some seasonal and some permanent) have been constructed along the shores of Lake Simcoe; shoreline areas have been highly-valued real estate for many years. As a result, shoreline areas throughout the Town are mostly developed; however, there are some policy approaches that will need to be incorporated into the Official Plan to address re-development, intensification, and the Lake Simcoe Protection Plan.

The Lake Simcoe Protection Plan (2009) sets out to:



- protect, improve or restore the elements that contribute to the ecological health of the Lake Simcoe watershed, including, water quality, hydrology, key natural heritage features and their functions, and key hydrologic features and their functions;
- restore a self-sustaining coldwater fish community in Lake Simcoe;
- reduce loadings of phosphorous and other nutrients of concern to Lake Simcoe and its tributaries;
- reduce the discharge of pollutants to Lake Simcoe and its tributaries;
- respond to adverse effects related to invasive species and, where possible, to prevent invasive species from entering the Lake Simcoe watershed;
- improve the Lake Simcoe watershed's capacity to adapt to climate change;
- provide for ongoing scientific research and monitoring related to the ecological health of the Lake Simcoe watershed;
- improve conditions for environmentally sustainable recreation activities related to Lake Simcoe and to promote those activities;
- promote environmentally sustainable land and water uses, activities and development practices;
- build on the protections for the Lake Simcoe watershed that are provided by provincial plans that apply in all or part of the Lake Simcoe watershed, including the Oak Ridges Moraine Conservation Plan and the Greenbelt Plan, and provincial legislation, including the Clean Water Act, 2006, the Conservation Authorities Act, the Ontario Water Resources Act, and the Planning Act;
- pursue any other objectives set out in the Lake Simcoe Protection Plan.

Section 6 of the Lake Simcoe Protection Plan (Ministry of Environment et al. 2009) sets out policies to protect Key Natural Heritage Features (KNHF) and Key Hydrologic Features (KHF) in the Lake Simcoe watershed. Policy 6.21-DP specifies that “key natural heritage features are wetlands, significant woodlands, significant valleylands, and natural areas abutting Lake Simcoe”. Policy 6.22-DP specifies that “key hydrologic features are wetlands, permanent and intermittent streams, and lakes other than Lake Simcoe”. The Town of Innisfil’s current Official Plan does not include policies pertaining to the Lake Simcoe Protection Plan, as it predates the Lake Simcoe Protection Plan. Simcoe County’s updated official plan includes policies and can be looked to for guidance on this matter. Policies pertaining to the Lake Simcoe Protection Plan are included as an additional layer of policy to consider, on top of the County Greenlands policies, similar to how Greenbelt Plan policies are included in the Town’s current official plan (in Section 3.1.2 The Greenbelt Plan – Natural Heritage System).

The Town’s current Official Plan includes definitions and/or criteria for the following features that are included in KNHF and KHF:

- wetlands;
- significant woodlands; and
- significant valleylands.

The Town will need to include definitions and/or criteria for the following features that are also included in KNHF and KHF:



- natural areas abutting Lake Simcoe; and
- permanent and intermittent streams.

The Lake Simcoe Protection Plan places restrictions on development and site alteration within KNHF and KHF, including related minimum 30 m vegetation protection zones (VPZ) or buffers. Policies are also included in the Plan that speak to when an environmental study is required (i.e., development or site alteration proposed within 120 m of a KNHF or KHF). The Lake Simcoe Protection Plan also provides policies that require the establishment and maintenance of natural self-sustaining vegetation for development or site alteration proposed within 120 m of the Lake Simcoe shoreline to form the VPZ, and it restricts development of shoreline and riparian areas.

Furthermore, the Lake Simcoe Protection Plan includes a target to achieve a minimum of 40% high quality natural vegetation cover in the watershed. Due to the vast amount of farmland this is present in the Town of Innisfil, achievement of this target must be put into this context. A study to determine the percentage of high quality natural vegetation cover within the Town of Innisfil portion of the Lake Simcoe Watershed should be completed. In the event that natural cover is less than 40%, enhancement or restoration areas should also be identified to reach the target of 40% high quality natural vegetation cover within the Town of Innisfil portion of the Lake Simcoe Watershed, or the entire Town.

Changes to the classification of some natural heritage features in the Town's Official Plan may be necessary based on the Lake Simcoe Protection Plan. The "Technical Definitions and Criteria for Identifying Key Natural Heritage Features and Key Hydrologic Features for the Lake Simcoe Protection Plan" prepared by the MNRF (January 20, 2015) should be reviewed in detail to determine where inconsistencies in classification criteria occur between the guidance provided by the MNRF and the Town of Innisfil's current Official Plan. For example, are there inconsistencies in criteria for defining significant woodlands? For example, the Technical Criteria provided by MNRF (January 20, 2015) do not discuss the option of applying different approaches for areas within the built area of the watershed and areas outside of the settlement areas and built areas.

Policies pertaining to the Lake Simcoe Protection Plan must be included in the updated Official Plan for Innisfil. The Lake Simcoe Protection Act (2008) requires that municipalities bring their official plans into conformity with the applicable "designated policies" at their five-year official plan review.

Options for Incorporating the Lake Simcoe Protection Plan:

- Incorporate definitions of the features that are included in KNHF and KHF into the Town's Official Plan.
- Incorporate the applicable "designated policies" of the Lake Simcoe Protection Plan into the Town of Innisfil's Official Plan.
- Consider completing a separate study to analyse the percentage of high quality natural vegetation cover within the Lake Simcoe watershed portion of the Town of



Innisfil, and consider identifying prime areas for enhancement/restoration to complement the NHS.

- Review “Technical Definitions and Criteria for Identifying Key Natural Heritage Features and Key Hydrologic Features for the Lake Simcoe Protection Plan” prepared by the MNR in detail to determine if criteria for identifying features included under the Natural Environmental Area designation in the Town’s current Official Plan (Policy 3.1.1.1) are consistent with the Ministry’s guidance.
- Incorporate policy approaches to address re-development and intensification in shoreline areas with regard for the Lake Simcoe Protection Plan.

6.0 Natural Heritage Features

The current Official Plan identifies all known significant natural heritage features in the Natural Environmental Area designation, which (at that time) includes Environmentally Significant Areas (ESAs)¹ (excluding Hydrogeologically Significant Areas), Provincially Significant Wetlands (PSWs), other wetlands, Areas of Natural and Scientific Interest (ANSIs), valleylands, significant woodlands, Significant Wildlife Habitat (SWH), significant habitat of endangered species and threatened species, the Lake Simcoe shoreline, and stream corridors including fish habitat and buffers (Policy 3.1.1.1). These features are mapped collectively on Schedule B: Land Use of the current Official Plan. Appendix 1: Natural Areas maps ANSIs, PSWs and other wetlands, ESAs, streams and lakes. Appendix 2: Natural Areas maps Significant Woodlands and stream corridors. Mapping of valleylands, SWH, significant habitat of endangered species and threatened species, and the Lake Simcoe shoreline is currently not provided in Official Plan Schedules. Reasons for excluding these features from the current Official Plan Schedules include:

- stream corridors are generally used as a surrogate for mapping significant valleylands²;
- sufficient data is currently unavailable to map SWH;
- mapping locations of SAR and SAR habitat is considered sensitive and confidential information, and should not be included on information prepared for the public; and
- the Lake Simcoe shoreline is clearly visible on current mapping and could easily be labelled to indicate its designation as Natural Environmental Area on future materials.

Significant revisions to the boundaries of features identified in the Natural Environmental Areas designation are not anticipated; however, changes may be necessary to the classification of some features based on the availability of additional

¹ Environmentally Significant Areas (ESA) have been generally replaced with the identification of natural heritage systems, key natural heritage features and key hydrologic features.

² Consideration could be given to completing a GIS-based exercise to map valleylands based on Digital Elevation Model information, contours, etc. Examples of this type of analysis have been completed in the Lake Simcoe watershed as part of their natural heritage system study.



detailed studies (i.e., Environmental Impact Studies, Secondary Plans, etc.) and the Lake Simcoe Protection Plan that have been completed since the current Official Plan was developed. Refinements may also be necessary to reflect changes in a natural heritage feature or where new information has refined the boundaries of a feature or changed the status of a feature.

Standard natural heritage databases and mapping were consulted and reviewed to enable evaluation of the natural heritage features included within the Natural Environmental Area designation. These references include the Natural Heritage Information Centre (NHIC) on-line Make-A-Map tool; Land Information Ontario (LIO); Simcoe County website, Greenlands mapping layers, Geographic Information Systems (GIS) Department; Town of Innisfil website and GIS department; Nottawasaga Valley Conservation Authority (NVCA); and Lake Simcoe and Region Conservation Authority (LSRCA). The Town of Innisfil, Simcoe County, NVCA and LSRCA, and LIO provided GIS data. These data sets were used to analyse and evaluate the accuracy of existing mapping of natural heritage features included in the current Official Plan.

In general, detailed natural heritage information is relatively sparse and incomplete within the Town of Innisfil. Detailed Ecological Land Classification (ELC) coverage is incomplete, and has been completed only at a high level where it is available. ELC is a standard methodology used in Ontario for the consistent description, identification, classification and mapping of ecological land units (Lee et al. 1998). ELC-based information is available at the Community Series level (e.g., Deciduous Forest, Meadow Marsh, etc.) for the LSRCA's jurisdiction, and at best to the Community Class level (e.g., Forest, Marsh, etc.) for the NVCA's jurisdiction. Also, a large proportion of the Town's wetlands remain unevaluated. As many substantial data gaps exist, it is important that natural heritage feature policies provide guidance on the evaluation and designation of significant natural heritage features so that when information on previously unidentified or unevaluated features becomes available, their significance can be determined and appropriate protection measures can be applied.

In general, all identifiable key natural heritage features and key hydrologic features determined through mapping, ELC, or the NHS established for the Lake Simcoe watershed (Beacon Environmental and LSRCA 2007), should be designated as Natural Environmental Area on Schedule A and Schedule B of the Official Plan.

6.1 Woodlands

Over the past decade, woodland protection has been gathering support throughout much of southern Ontario. Detailed technical guidance for the identification of significant woodlands is offered in the Natural Heritage Reference Manual (OMNR 2005, Second Edition) on woodland size criteria, ecological functions criteria (i.e., woodland interior, proximity to other woodlands or other habitats, linkages, water protection, woodland diversity), uncommon characteristics criteria, and economic and social functional values criteria. In addition, the Town of Innisfil, County of Simcoe and



the Lake Simcoe Protection Plan all identify criteria for designating significant woodlands.

6.1.1 Town of Innisfil

The Town of Innisfil currently includes the following policies for designating significant woodlands:

3.1.1.3 A woodland shall be considered significant where it satisfies one or more of the following three criteria:

- a) 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
 - ii. 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.
- b) Any woodland over 2 ha that is:
 - i. within 100 metres of another feature identified in Section 3.1.1.1; or
 - ii. within 30 metres of a natural watercourse, surface water feature or other wetland.
- c) Any woodland that is greater than or equal to 10 ha in size.

6.1.2 County of Simcoe

The County of Simcoe's past Official Plan (Consolidated August 2007) did not include a definition of woodland or significant woodland; however, the updated Official Plan (Adopted 2008, under appeal) includes the following definition of significant woodland:

“Significant Woodland means an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to its site quality, species composition, or past management history. Patches of woodlands that are a minimum of 2.0 hectares in the Settlement Designation, a minimum of 4.0 hectares in the Simcoe Lowlands, and a minimum of 10 hectares in the Simcoe Uplands are considered significant unless other criteria are used to determine significance in the Simcoe Uplands area as described in Section 3.8.12.”

The Town of Innisfil is located entirely within the Simcoe Lowlands (Schedule 5.1 of the County of Simcoe's updated Official Plan, Adopted 2008, under appeal). The County's woodland policies are currently under appeal; however, if they are approved the Town of Innisfil's Official Plan will need to conform. Consideration should be given to



modifying the Town's current woodland policies to reflect the direction provided by the County regarding the protection of woodlands that are a minimum of 2 ha in the Settlement Designation, and woodlands that are a minimum of 4 ha in the Simcoe Lowlands. The Town should determine if there is a need to refine current County of Simcoe Significant Woodlands (under appeal) based on available updated mapping.

6.1.3 Lake Simcoe Protection Plan

The Lake Simcoe Protection Plan (2009) defines significant woodland as:

“In regard to woodlands, an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. The Province (Ministry of Natural Resources) identifies criteria relating to the forgoing (Greenbelt Plan)”.

The Ministry of Natural Resources and Forestry (MNRF) provides further guidance on identifying Key Natural Heritage Features³ in the recent paper “Technical Definitions and Criteria for Identifying Key Natural Heritage Features and Key Hydrologic Features for the Lake Simcoe Protection Plan” (MNRF January 20, 2015). For the identification of significant woodlands, the applicable areas of the Lake Simcoe watershed have been divided into two geographic areas to account for differences in forest cover. The “South Area” includes portions of the Lake Simcoe watershed that are located within the Town of Innisfil that are south of Highway 89. The “North Area” includes the remainder of the Lake Simcoe watershed this is located within the Town of Innisfil. A woodland that meets any one of the criteria below in Table 1 is considered significant within the Lake Simcoe Protection Plan area.

Further to Table 1, within the Lake Simcoe Protection Plan area, a significant woodland must have an average minimum width of 40 m measured to crown edges where the criterion size threshold is 0.5 to 4 ha, and 60 m where the criterion size threshold is 10 ha. The level of detail required to apply some of the criteria listed below means that the significance of some woodlands can only be confirmed through site specific assessments.

³ A significant woodland is one type of Key Natural Heritage Feature.



Table 1. Lake Simcoe Protection Plan Area significant woodland criteria.

Criteria	Description	North Area	South Area
Size	Any woodlands of this size or greater are significant; or	10 hectares or more	4 hectares or more
Natural Composition	Any woodlands containing this area of naturally occurring (not planted) trees listed in Appendix B that meet the definition of “woodland”; or	4 hectares or more	1 hectare or more
Age or Tree Size	Any woodlands of this size with either: a) 10 or more trees per hectare that are either greater than 100 years old or 50 cm or more in diameter; or b) containing a basal area of at least 8 square metres per hectare in native trees that are 40 cm or more in diameter; or	4 hectares or more	1 hectare or more
Proximity	Any woodlands of this size wholly or partially within 30 m of: a significant woodlands; a naturalized lake; a permanent stream; a significant valleyland; a provincially significant wetland; or significant habitat of an endangered or threatened species; or	4 hectares or more	1 hectare or more
Rarity	Any woodlands of this size containing: a provincially rare treed vegetation community with an S1, S2 or S3 in its ranking by the Ministry of Natural Resources and Forestry Natural Heritage Information Centre (NHIC); or habitat of a woodland plant species with an S1, S2 or S3 in its ranking or an 8, 9, or 10 in its southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 or more square metres of leaf coverage.	0.5 hectare or more	0.5 hectare or more

Within the Lake Simcoe Protection Plan area, municipalities are required to conform to the Plan’s policies. The Town of Innisfil will need to update the significant woodlands criteria to reflect the Lake Simcoe Protection Plan criteria, at least within the Lake Simcoe Protection Plan area of the Town of Innisfil; however, consideration could be given to applying the criteria to the entire Town to simplify implementation of policies.



In order to update the Town's Significant Woodlands policies to conform to the Lake Simcoe Protection Plan, the identification of Significant Woodlands outside settlement areas within the Lake Simcoe Watershed should be solely determined by the Technical Guidelines that support the implementation of the Lake Simcoe Protection Plan for the Lake Simcoe watershed (MNR 2015). As mentioned above, consideration could be given to using a similar standard across the Town of Innisfil. Similarly, a standard for woodland significance should be established for settlement areas that would trigger the "no negative impact test" of the PPS.

6.1.4 Discussion

The Town of Innisfil currently identifies significant woodlands in Appendix 2: Natural Areas and includes policies to evaluate the significance of and protect significant woodlands. The creation and implementation of policies to protect significant woodlands have not always kept pace with the actual designation of the features, meaning that a comprehensive significant woodland evaluation has not been completed to evaluate woodlands based on the criteria put forward for assessing significance. Significant woodlands have largely been identified based on the size criterion, or perhaps the proximity to watercourse criterion.

The Natural Environmental Area designation includes significant woodlands among a list of other significant features, but the actual limits of specific features are often lacking, incomplete or inaccurate. Current boundaries have, in most cases, been based on air photo interpretation and not on detailed field-based surveys that have investigated the edge of each feature (e.g., determining the "dripline" of the woodland edge). This can lead to piecemeal and inconsistent levels of protection, and at times, litigation at the OMB over the determination of significance for a particular natural unit on the landscape. Section 3.0 of this report reviews the environmental feature boundary refinement policies included in the Town's current Official Plan.

The Town of Innisfil maps significant woodlands in Appendix 2: Natural Areas in the current Official Plan. LIO, a division of MNR, also maintains a woodlands layer. The County provides digital mapping information on "Forest Tracts/County Forest Tracts" and "Forested Area/Woodlands" in their online Interactive Mapping tool⁴, and includes Significant Woodlands as part of their Greenlands System (see Schedule 5.1 of updated County Official Plan). Information on Tree Cut Permits issued within Simcoe County on private property is also provided on the County's Interactive Mapping tool.

Figure 1 illustrates discrepancies in significant woodland boundaries mapped by the Town and the County. Simcoe County does not currently maintain a comprehensive Significant Woodlands layer that identifies all significant woodlands within the County. "Simcoe Significant Woodlands" mapped on Figure 1 are those that are identified as a component of the Simcoe Greenlands System (draft, Adopted 2008, under appeal). Many of the large green areas that are identified as "Innisfil Significant Woodlands" on

⁴ Available online at: <http://maps.simcoe.ca/Public/>



Figure 1 are incorporated as part of the Simcoe County Greenlands System under a different category, such as “Innisfil Till Plain”.

On occasion, illegal tree cutting (i.e., tree cutting which occurs without the necessary permit) occurs within the Town of Innisfil. Tree cutting can: have a serious impact on the quality of a natural heritage feature; remove a natural heritage feature altogether; and reduce the amount of tree cover in the Town of Innisfil. Consideration should be given to including a policy in the updated Official Plan to prohibit development where illegal tree cutting has occurred to deter this practice from continuing in the future.

Options for Significant Woodlands mapping and policies:

- Analyse the differences between:
 - the Town of Innisfil’s current significant woodlands layer;
 - Simcoe County’s significant woodlands, which are mapped as a component of the Simcoe County Greenlands System; and
 - woodlands identified by LIO.
- Determine if the Town of Innisfil’s significant woodlands criteria should be updated to reflect the direction provided by the County of Simcoe updated official plan (Adopted 2008, under appeal) for protecting woodlands 2 ha or larger in settlement areas, and woodlands 4 ha or larger in the Simcoe Lowlands.
- The Town should determine if there is a need to refine current County of Simcoe Significant Woodlands (under appeal) based on available updated mapping.
- Apply significant woodlands criteria provided by MNRF for the Lake Simcoe Protection Plan area within the Town of Innisfil to the extent feasible. Consider modifying the Town of Innisfil’s significant woodlands policies to require application of the Lake Simcoe Protection Plan for protecting significant woodlands based on criteria related to size, natural composition, age or tree size, proximity, and/or rarity⁵:
 - (a) in the Lake Simcoe Watershed portion of the Town of Innisfil; or
 - (b) throughout the Town of Innisfil.
- Include policies to reflect that the identification of Significant Woodlands outside settlement areas should be solely determined by the Technical Guidelines that support the implementation of the Lake Simcoe Protection Plan for the Lake Simcoe watershed, and possibly NVCA’s jurisdiction.
- Include policies that establish a standard for woodland significance in settlement areas that would trigger the “no negative impact test” of the PPS.
- Remove Significant Woodlands designations from woodlands that are located on properties where tree-cutting permits have been issued by the County.
- Coordinate removal of Significant Woodland designations from properties where tree-cutting permits have been issued with the County’s Tree-Cutting By-laws and the Town’s long-term natural heritage protection goals to ensure that the Town’s goals are not being compromised.
- Include a policy to prohibit development on lands where illegal tree cutting has occurred.

⁵ In order to apply many of the significant woodlands criteria, site specific assessments are required.



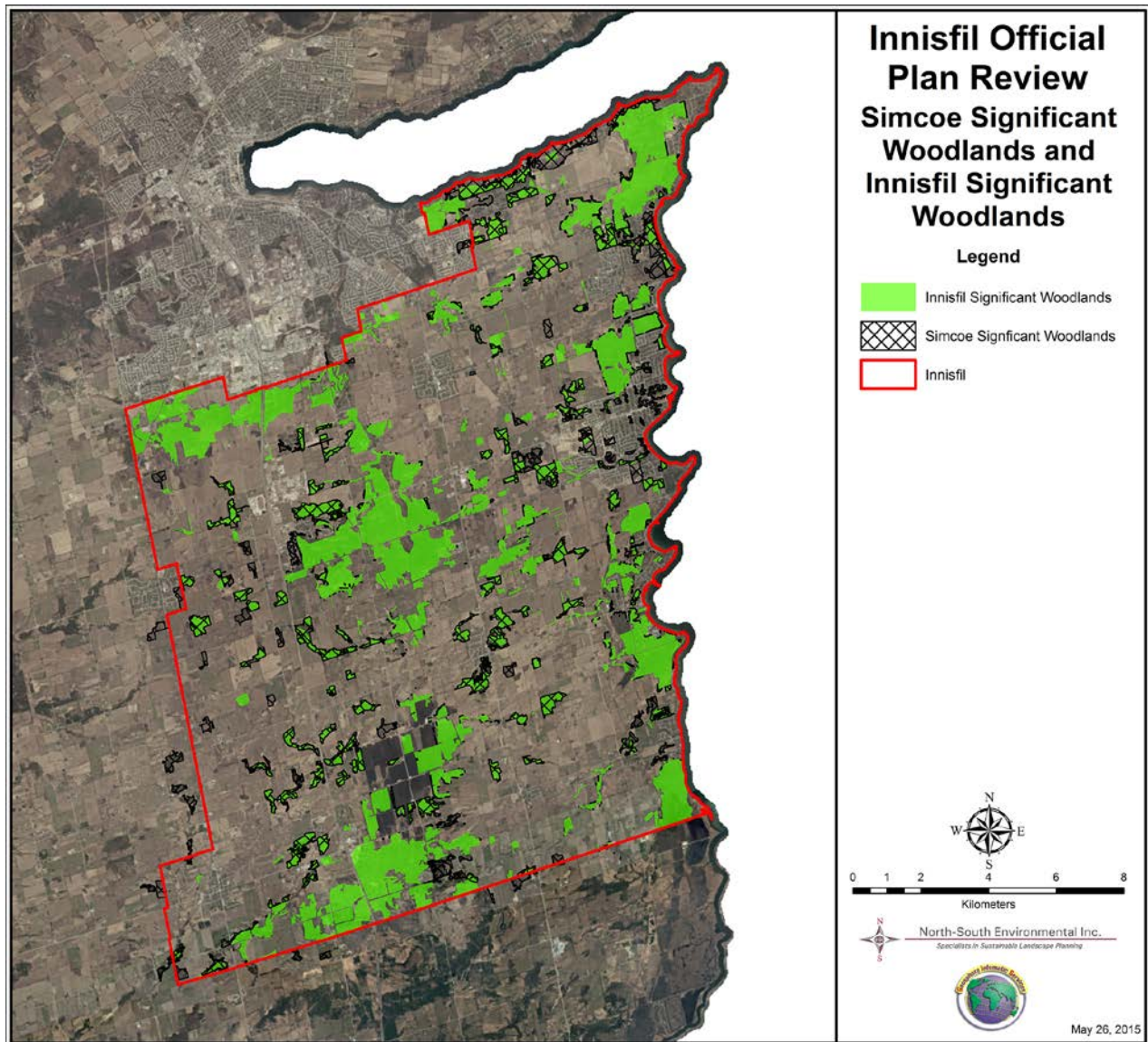


Figure 1. Illustration of Simcoe County’s Significant Woodlands layer and the Town of Innisfil’s Significant Woodlands layer.

6.2 Wetlands

The PPS 2014 defines wetlands as:

“lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamp, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition”.

“Significant: means a) in regard to wetlands, coastal wetlands and areas of natural and scientific interest, an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time.”

Section 2.1.4 of the PPS 2014 specifies that: “Development and site alteration shall not be permitted in significant wetlands in Ecoregions 5E, 6E and 7E”. The Town of Innisfil is located within Ecoregion 6E.

The Ontario Wetland Evaluation System (OWES) was developed by the OMNRF in 1984 and has been periodically updated since (currently 3rd Edition, Version 3.2, 2013). The OWES evaluates the importance of a wetland based on a scoring system where four components (biological, social, hydrological, and special features) are evaluated. Once evaluated, a wetland can become either a provincially significant wetland (PSW) or an evaluated non-provincially significant wetland (non-PSW). Municipalities can choose to designate non-PSWs as “Locally Significant Wetlands” in their Official Plans.

Approximately 75% of all wetlands in the Town of Innisfil have been evaluated using OWES (i.e., in terms of wetland area), leaving a relatively large proportion of the Town’s wetlands unevaluated. Many of the existing evaluated non-PSWs were originally evaluated under the first or second edition of OWES. Based on recent updates to the OWES manual and changes in the Town of Innisfil, it is likely that many of the evaluated non-PSWs would attain PSW status if they were re-evaluated following the methodological changes that were updated in the current edition of OWES.

In the Town of Innisfil’s current Official Plan, PSW and “Other Wetlands” are included under the Natural Environmental Area designation, and are protected through policies provided in Sections 2.4 Natural Heritage System and 3.1 Natural Environment. “Other Wetlands” means all wetlands that have been evaluated using the Ontario Wetland Evaluation System (OMNR 1993 with updates in 1994, 2002 and 2013) as non-provincially significant, and wetlands identified using the provincial Ecological Land Classification (ELC) (Lee et al. 1998).



Policy 3.1.1.8 states that:

“No development or site alteration are permitted in provincially significant wetlands, or significant habitat of endangered species and threatened species”.

Policy 3.1.1.10 states that:

“Where development, site alteration or uses are proposed within the Natural Environmental Area designation or the Natural Heritage System, set out in Section 2.4, other than those features referred to in Section 3.1.1.8 and the uses permitted in Section 3.1.1.4, or where development is proposed on lands adjacent to Natural Environmental Area designations, or the Natural Heritage System, the proponent shall undertake an Environmental Impact Study (EIS) as outlined in Section 9.10 of this Plan. The Environmental Impact Study shall be completed to the satisfaction of the Town in consultation with the County and the applicable conservation authority. Development or site alteration will not be permitted within or adjacent to a Natural Environmental Area designation or the Natural Heritage System, and such lands will not be designated to an alternative designation, unless the EIS demonstrates to the satisfaction of the Town in consultation with the County and the applicable conservation authority that there will be no negative impacts on the natural feature or its ecological function including functional linkages.”

And, policy 3.1.1.11 states that:

“For the purpose of policy 3.1.1.10, adjacent lands are deemed to be 120 metres from the edge of Provincially Significant Wetlands and 50 metres from all other Natural Environmental Areas”.

In addition, LSRCA’s Wetland Policy Statement (LSRCA Watershed Development Policies, 2014) provides protection for PSWs and does not permit new development and/or interference within all other wetlands, except under certain circumstances. The minimum setback for PSWs is 120 m and 30 m for all other wetlands, unless it can be demonstrated that the hydrological function of adjacent lands has been evaluated and it has been demonstrated through the submission of a hydrologic study to the satisfaction of the LSRCA that there will be no negative impacts on the wetland as a result of the proposed development. A minimum 30 m setback is required on all other wetlands unless it can be demonstrated that there will be no negative impacts on the wetland as a result of the proposed development to the satisfaction of the LSRCA.

NVCA’s Wetland Policies (NVCA Procedures for the Implementation of Ontario Regulation 172/06, 2007) prohibit development in wetlands and other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 m of all PSWs and wetlands greater than 2 ha in size, and areas within 30 m of wetlands less than 2 ha in size. NVCA’s 2009 Planning Regulations Guidelines note that an EIS may be required for new development that occurs within 120 m of a wetland, and identifies a minimum 30 m setback or vegetated buffer.

The Town of Innisfil’s current Official Plan policies are consistent with and go beyond the level of protection provided by the policies of the LSRCA (i.e., by extending the definition



of adjacent lands from 30 m to 50 m for non-PSW). NVCA provides additional protection for non-PSW wetlands that are larger than 2 ha in size by incorporating a 120 m setback. To be consistent with NVCA's policies, it is recommended that the Town of Innisfil consider updating their policies for wetland protection to incorporate a 120 m setback for "Other Wetlands" that are greater than 2 ha in size. For consistency and ease of application, it is recommended that this policy apply to wetlands throughout the Town of Innisfil, in both the NVCA and LSRCA's jurisdictions.

Wetlands have been mapped by MNR for the Lake Simcoe watershed. All wetlands, regardless of significance, are considered key natural heritage and/or key hydrologic features under the Lake Simcoe Protection Plan and are protected through Designated Policy 6.23 under that Plan. All wetlands outside settlement areas in the Town of Innisfil (at least within the Lake Simcoe watershed) should be defined using the Lake Simcoe Protection Plan Technical Guidelines, in addition to the available mapping. Furthermore, a policy approach to wetland protection within settlement areas should be provided in the Town's Official Plan.

LIO maintains a digital GIS-based wetlands layer, which maps Evaluated-Provincial, Evaluated-Other, and Not evaluated per OWES wetlands. This wetlands layer was compared to Town of Innisfil's Natural Environmental Area designations layer (Figure 2). Areas shown in yellow indicate wetlands mapped by LIO (PSW, non-PSW or unevaluated wetland) that fall outside the current Natural Environmental Area designations layer maintained by the Town of Innisfil. Unevaluated wetlands identified by MNR in mapping provided by LIO are based on computer modelling and may require refinement (see Section 3.0 for Refining Feature and System Boundaries).

A further comparison was completed to determine the extent to which PSWs mapped by LIO are incorporated in the Town's current NHS mapped on Schedule A: Municipal Structure (Figure 3). Portions of PSW extend beyond NHS boundaries, and several PSW units fall completely outside the NHS boundary. Updated wetland information and mapping has been completed and made available since the last Official Plan was created and NHS was delineated. Since policy protection of PSW and other wetlands is so strong in the province and within the Town, updating the NHS to include the addition of all known PSW wetland units is essential. Updates to PSW mapping for the following wetland complexes are currently known (based on information provided by LIO mapping), including portions that fall outside the current NHS boundary and/or Natural Environmental Area designation:

- Lover's Creek Swamp PSW;
- Leonard's Beach Swamp PSW;
- Wilson Creek Marsh PSW; and
- Little Cedar Point PSW.

Options for Mapping Wetlands and Wetlands policy:

- Consider updating wetland policies to provide additional protection for "Other Wetlands" that are greater than 2 ha in size by requiring a minimum 120 m setback to be consistent with NVCA's wetland policy.



- Update the Natural Environmental Area designation and NHS to include the addition of new or re-evaluated PSW, non-PSW and unevaluated wetland units.
- Include a policy that specifies that all wetlands, regardless of significance within the Lake Simcoe Watershed, are considered key natural heritage and/or key hydrologic features under the Lake Simcoe Protection Plan and are protected under that Plan.
- Include a policy that specifies that wetlands located outside settlement areas should be defined using the Lake Simcoe Protection Plan Technical Guidelines for the Lake Simcoe watershed. Consideration should be given to extending this policy to apply to NVCA's jurisdiction to provide a consistent approach across the Town of Innisfil.
- Include a policy approach for protecting wetlands within settlement areas.
- Include a policy that states that an EIS may be required for new development that occurs within 120 m of a wetland and identifies a minimum 30 m setback or vegetated buffer.



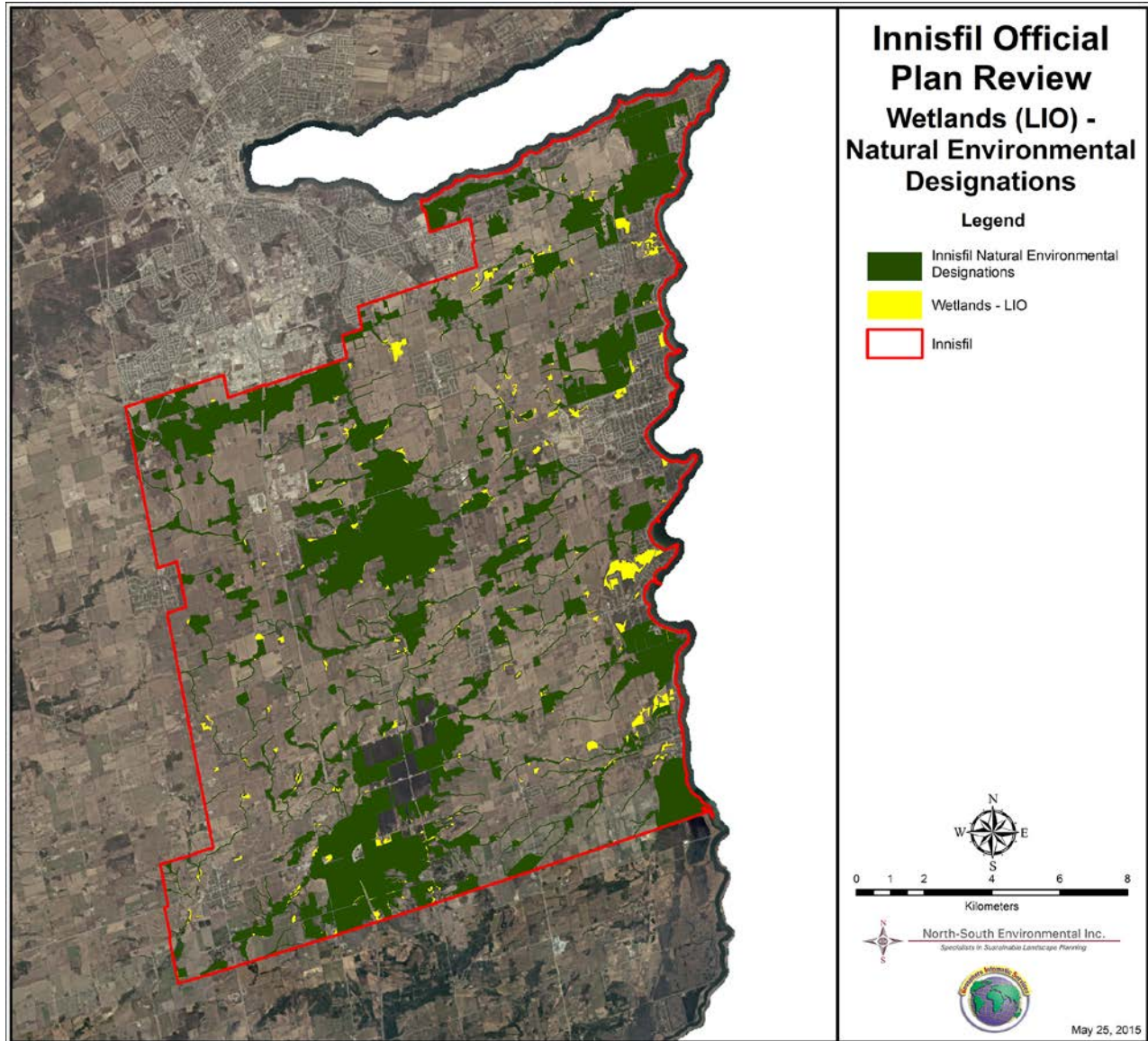


Figure 2. Illustration of extent of wetlands mapped by LIO that fall outside the Town's current Natural Environmental Area designation.



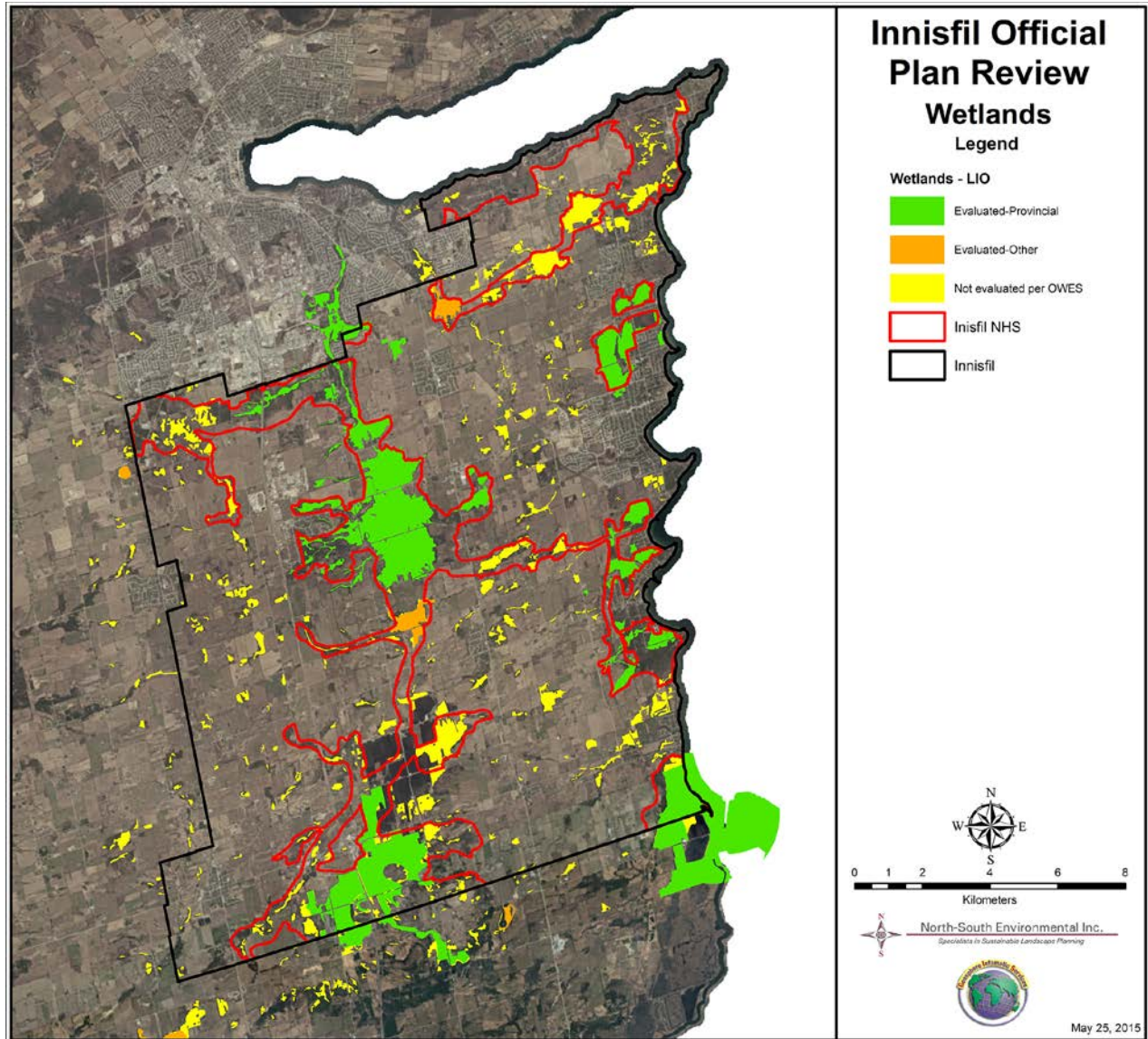


Figure 3. Illustration of extent of Provincially Significant Wetlands, non-Provincially Significant Wetlands, and unevaluated wetlands based on data layers provided by LIO.

7.0 Significant Wildlife Habitat

MNRF Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, January 2015) provide detailed guidance on identifying SWH, building on the Significant Wildlife Habitat Technical Guide (2000). In addition to providing criteria for assessing and evaluating SWH, the Criteria Schedules for SWH also indicate that identification of SWH is not intended to identify the habitat of SAR. For example, 1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species) including Open Country Bird Breeding Habitat. Species included in the criteria for identifying this form of SWH include Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow, and Short-eared Owl (Special Concern). Note that this list does not include Bobolink or Eastern Meadowlark, which are two open country bird SAR. This would suggest that all polices pertaining to SWH should be exclusive of references to SAR and SAR habitat and vice versa. This is part of MNRF's efforts to harmonize their approach to protecting SAR and SWH.

Reference to the Criteria Schedules for SWH could be provided to give guidance for delineating SWH as part of the EIS or other environmental study processes. Policy 9.10.1 of the current Official Plan outlines the requirements that an EIS must address. Part iii) provides guidance on the identification of the significance of natural heritage features. A reference to MNRF's Criteria Schedules for SWH could be included in this policy.

Options for Incorporating Significant Wildlife Habitat:

- Consider including a reference to MNRF Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E in part iii) of Policy 9.10.1 to provide guidance for identifying and evaluating SWH as part of the EIS process.
- MNRF deer yard mapping could be used to map Deer Yarding Areas, a form of SWH under Seasonal Concentration Areas of Animals.
- Recognition that there are many other components of SWH that have not been mapped should also be made.

8.0 Refining Feature and System Boundaries

Policy 3.1.1.1 of the current Town of Innisfil Official Plan specifies the natural heritage features included under the Natural Environmental Area designation. Natural Environmental Areas are mapped as a Land Use Designation on Schedule B. The general locations of individual feature types designated as Natural Environmental Areas are shown on Appendix 1 and 2 (Appendix 1 maps ANSIs, PSWs and other wetlands, and ESAs; Appendix 2 maps stream corridors and Significant Woodlands) of the Town's current Official Plan.



Policy 3.1.1.1 specifies that:

3.1.1.1 The Natural Environmental Area designation includes those natural heritage features considered significant at the Provincial, regional or local level. This shall include the following features:

- Environmentally Significant Areas (excluding Hydrogeologically Significant Areas);
- Provincially Significant Wetlands;
- Other wetlands;
- Areas of Natural and Scientific Interest (ANSIs);
- Valleylands;
- Significant Woodlands;
- Significant Wildlife Habitat;
- Significant habitat of endangered species and threatened species;
- The Lake Simcoe shoreline; and
- Stream corridors including fish habitat and buffers.

Current Official Plan policies provide a clear, fair and defensible approach to Natural Environmental Area and NHS boundary refinement and evaluation. Pertaining to the general boundaries of Natural Environmental Areas, Policy 3.1.1.6 specifies that:

“The general boundaries of the Natural Environmental Areas are delineated on Schedule B, and B1 through B14. These boundaries are based on the best available mapping and are not intended to be precise. The boundaries of Natural Environmental Areas shall be confirmed and refined through an environmental analysis during the Secondary Plan process, and/or through the review of any site specific development applications through an Environmental Impact Study (EIS). The precise delineation of the Natural Environmental Areas shall occur through the staking of the limits of the area as part of environmental studies in support of Secondary Plans, or development applications. Such staking will be undertaken in co-operation with the Town, the applicable conservation authority and the County.”

And, pertaining to the boundaries of the NHS, Policy 2.4.1 specifies that:

“The boundaries of the Natural Heritage System, as shown on Schedule A, are schematic and shall be refined if and when land use changes are proposed. At that time, the spatial extent and functional requirements of linkages shall be determined through a watershed plan, Secondary Plan and/or Environmental Impact Study (EIS) process and the boundaries of the NHS refined using the principles provided in Section 2.4.7. Where such studies delineate lands to be protected from development in order to maintain the linkage function, these areas may be designated Natural Environmental Area as per Section 3.1 and shown on Schedules B and B1 to B14.”



No matter how detailed the refinements may be to the Official Plan, the boundaries of the features must be considered schematic. Precise delineation of features would require on-site evaluation of the boundaries and significance of each natural feature; this level of evaluation is beyond the scope of an Official Plan review. Furthermore, development approvals and/or OMB Hearings may result in natural heritage feature and NHS boundary changes, which will not necessarily be reflected in current mapping layers. Therefore, the Official Plan must provide a clear policy framework for refinement and evaluation of natural features and the NHS at the secondary plan and draft plan stages.

In situations where natural heritage features are lost to development (after policy tests have been met and the necessary approvals are in place), “ecological offsetting” is an important and necessary strategy for maintaining existing natural heritage functions, forest cover, wildlife habitat, etc. “Ecological offsetting” refers to a system used predominantly by planning authorities and developers to compensate for ecological impacts associated with development through the planning process. In some circumstances, “ecological offsetting” is designed to result in an overall biodiversity or natural cover gain. Offsetting is generally considered the final stage in a mitigation hierarchy, whereby predicted ecological impacts must first be avoided, minimized or reversed by developers, before any remaining impacts are offset or compensated for. The mitigation hierarchy is used to meet the environmental policy principle of “No Net Loss”. The principle of “No Net Loss” has been a standard requirement in the LSRCA watershed, and as a result, LSRCA can provide guidance to the Town in the implementation of an “ecological offsetting” or “No Net Loss” approach to natural heritage protection.

9.0 Natural Heritage System Delineation

The definition of NHS provided in the Provincial Policy Statement (2014) states that:

“natural heritage system: means a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue. The Province has a recommended approach for identifying natural heritage systems, but municipal approaches that achieve or exceed the same objective may also be used.”

The Provincial Policy Statement (2014) puts a greater emphasis on NHS and the use of a systems approach to protect natural heritage, and now requires municipalities to identify NHS while recognizing that they will “vary in size and form in settlement areas, rural areas, and prime agriculture areas” (Policy 2.1.3, PPS 2014). The definition of NHS also now includes “working landscapes”, which is interpreted to mean agricultural land that can be included in a NHS owing to the ecological function it provides, but it does not mean that it needs to be naturalized.

Natural Heritage System policies are included in Section 2.4 of the current Official Plan. The Town’s current NHS represents areas where it is desirable to maintain existing functions and link environmental features within the Town. It is a schematic delineation of where local and regional linkages among natural environment features may exist. Only the larger natural environmental features and those where an apparent linkage to the system exists are identified. Other natural environmental features are included in the Natural Environmental Area designation as set out in Section 3.1 (from the “Intent” of Section 2.4).

The NHS is an overlay designation and provides additional natural heritage protection policies to those set out in Natural Environment policies (Section 3.1). It is not intended to affect the continuation of existing uses or prohibit future development, unless otherwise designated on the land use Schedules B and B1 to B14. It is the intent, however, that new development maintains and protects natural heritage features, linkages and their functions.

Policy 2.4.7 provides guidance on the general principles to use for delineating the NHS:

2.4.7 The following general principles shall be used for delineating the Natural Heritage System:

- Incorporate Natural Environmental Area designated features, as set out in Section 3.1, among which functional linkages can be established.
- Preserve, and where possible improve, functional connections among natural heritage features.
- In particular, maintain connections between open water features (e.g., ponds and small lakes) and upland woods.
- Include local level connections where ever practical and ecologically desirable.
- Wherever possible, include coldwater streams, headwater wetlands and associated woodlands.
- Provide for linkages that extend outside of the Town boundaries as generally delineated on Schedule A.
- Link woodlands that occur along watercourses.
- Evaluate the role of smaller woodlands and meadows, and the linkages among them and other Natural Environmental Area features, and incorporate them into the Natural Heritage System where appropriate.



Policy 3.1.1.2 provides guidance for including linkages as part of the NHS designation. Policies included in Section 2.4.1 are provided on page 22 of this document.

“In addition to the features in 3.1.1.1, linkages may also be included in the designation as identified through studies as described in Sections 2.4.1 and 2.4.4.”

Policy 2.4.4 specifies that:

“Through a watershed plan, Secondary Plan and/or Environmental Impact Study (EIS) additional linkages between Natural Environmental Area designations may be identified using the principles of 2.4.7. These linkages will be considered to form part of the Natural Heritage System and shall be protected from development. Lands comprising the linkage may also be designated Natural Environmental Area as per Section 3.1.1.2.”

Since the PPS specifies that “natural heritage systems **shall** be identified ” [emphasis added] the Town of Innisfil could consider modifying Policy 3.1.1.2 to include linkages within the NHS designation, as linkages are an integral component.

The NHS illustrated as part of the Municipal Structure in Schedule A of the Town of Innisfil’s Official Plan is based on the previous Greenlands in the County of Simcoe’s Official Plan. That designation has changed considerably in the County’s updated Official Plan based on the availability of updated and additional information, and analysis. As such, a key aspect of the Official Plan review will be determining what constitutes an appropriate NHS in Innisfil. Should it be based on the County’s new Greenlands designation? Should it be based on the Town’s Natural Environmental Area designation with some linkages identified? Should the current NHS based on the County’s old Greenlands designation be used as a basis, with refinements? Also, Lake Simcoe Region Conservation Authority (LSRCA) completed a NHS for their watershed in 2007 (Beacon Environmental and LSRCA 2007) which covers a portion of the Town of Innisfil.

9.1 Review of Options for NHS Delineation

Base NHS on County’s old Greenlands designation, with refinements

Selection of this option would not capitalize on the extensive refinement and analysis completed by the County of Simcoe to delineate their updated NHS. Refining the old Greenlands designation would essentially duplicate efforts already completed by the County, and there is the possibility that there could be discrepancies in the boundaries that are determined through the refinement process. It is in the best interest of the Town of Innisfil to be as consistent with the County’s direction for protecting natural heritage as possible. In fact, Policy 3.8.12 of the new County Official Plan directs local municipalities to augment and support the County’s Greenlands Designation. Although

basing the Town's NHS on the County's old Greenlands designation, with refinements could achieve an NHS that "augments and supports" the County's Greenlands designation, this option is likely not the most efficient nor the most accurate way to move forward and raises issues of conformity to the updated County Official Plan.

Base NHS on Town's Natural Environmental Area designation with some linkages identified

Review of existing updated sources of information as part of preparing this discussion paper has revealed that there are some issues with the Town's current mapping of Natural Environmental Areas (i.e., woodlands and wetlands). In order to move forward with NHS delineation and refinement (as with any of the options provided in this section), the Town would need to undergo a thorough review of existing discrepancies in mapping to ensure that the most up-to-date and accurate information is included.

Base NHS on County's new Greenlands designation

The County's new Greenlands designation (currently under appeal) incorporates almost all of the lands identified in the Town's current NHS. However, a proportion of the County's new Greenlands designation falls outside of the Town of Innisfil's current NHS (Figure 4). The Town's NHS lands that fall outside the County Greenlands appear to consist primarily of linkage and enhancement areas (based on airphoto interpretation and the lack of a specific natural heritage feature). The Town could choose to base the NHS on the County's new Greenlands designation without refinement, or refine the County's new Greenlands designation to include the additional lands that are currently designated as NHS/Natural Environmental Area that fall outside the County's new Greenlands boundaries but within the Town's current NHS. In addition, the Town could choose to refine the County's new Greenlands designation based on updated mapping, and/or by expanding some areas of the system, such as the Cookstown Creek corridor.

Base NHS on LSRCA's NHS where available

LSRCA has identified a NHS within their watershed (Beacon Environmental and LSRCA 2007), which breaks the NHS into four policy levels based on significance (see Table 2).



Table 2. Recommended Policy Levels in LSRCA’s NHS.

Significance	Policy Level	NHS Intent	Implications for Replacement
Provincially Significant	Level 1	retain; no development or land use change	replacement can be considered for impacts due to project associated with non-Planning Act mechanisms such as Environmental Assessments
	Level 2	retain; no negative impact	when there is no “negative impact” but there is a loss of area or reduction in function, replacement can be considered
Watershed Significant	Level 3	generally retain, some flexibility no net negative impact	retention preferred but replacement acceptable; no net loss of area or function
Supporting	Level 4 - supporting	supporting features	not necessarily a development constraint, replacement encouraged

LSRCA recommends that the NHS be used to identify sustainable NHS within municipalities and that municipalities include supporting implementation policies in their Official Plans. Portions of the LSRCA designated NHS fall outside of the Town’s current NHS (Figure 5), including lands designated as Level 1 NHS Policy Area (i.e., areas mapped in dark green on Figure 5).

LSRCAs NHS can be incorporated into the Town’s NHS. For example, if the County’s Greenlands are used as the basis for delineating the Town’s NHS, an analysis can be completed to determine if the County’s Greenlands designation captures all of the parcels included within the LSRCA’s NHS. If this is desired, a further discussion regarding which NHS Policy Area levels to include in the Town’s NHS should be explored. For example, the Town may wish to incorporate Levels 1 through 3, but not Level 4 within the Town’s NHS.

The components of the Town’s NHS should be clearly defined, and should include Key Natural Heritage Features, Key Hydrologic Features, and linkages per the Lake Simcoe Protection Plan.



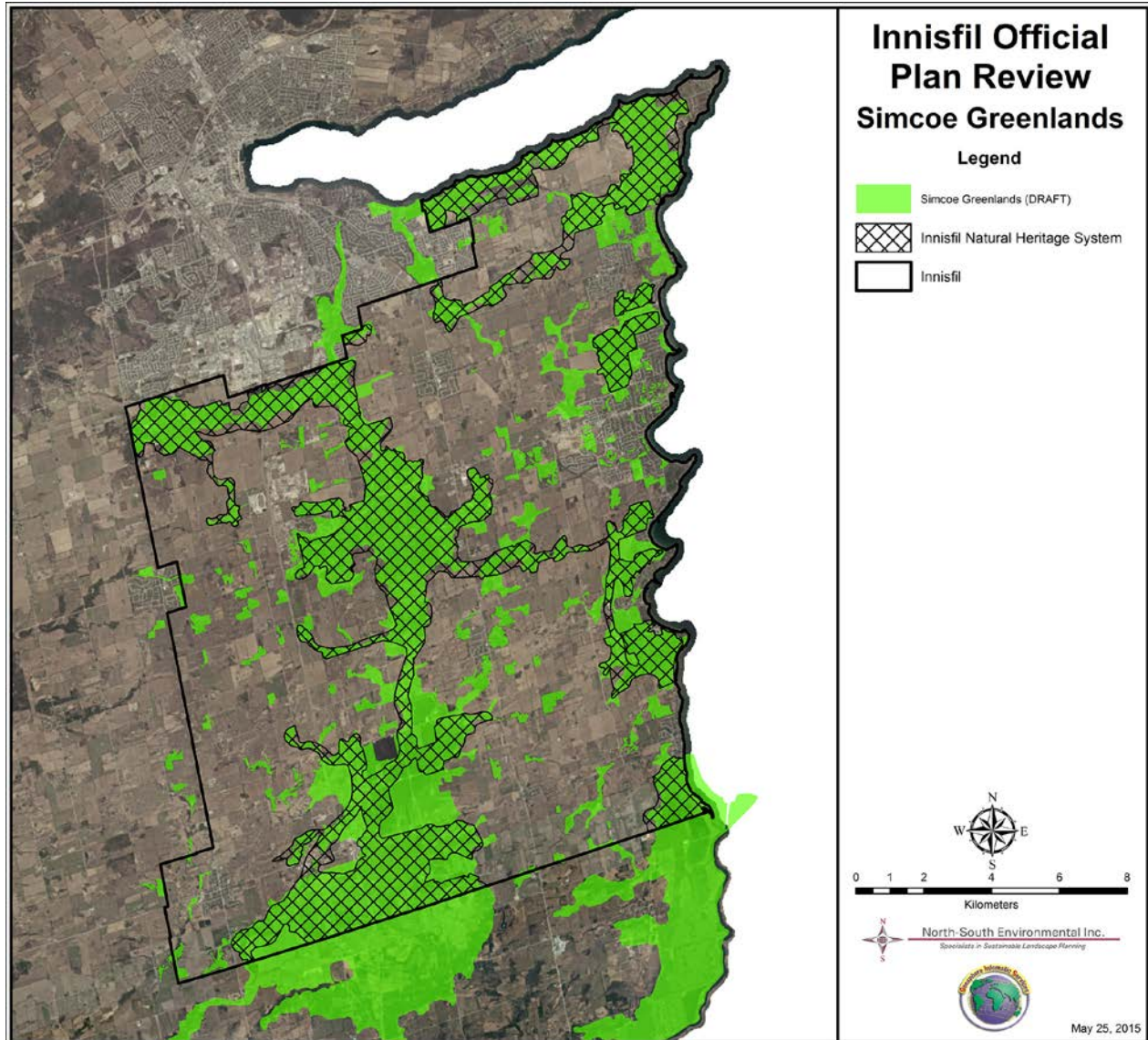


Figure 4. Difference between Simcoe County's Greenlands System and the current Town of Innisfil's NHS.

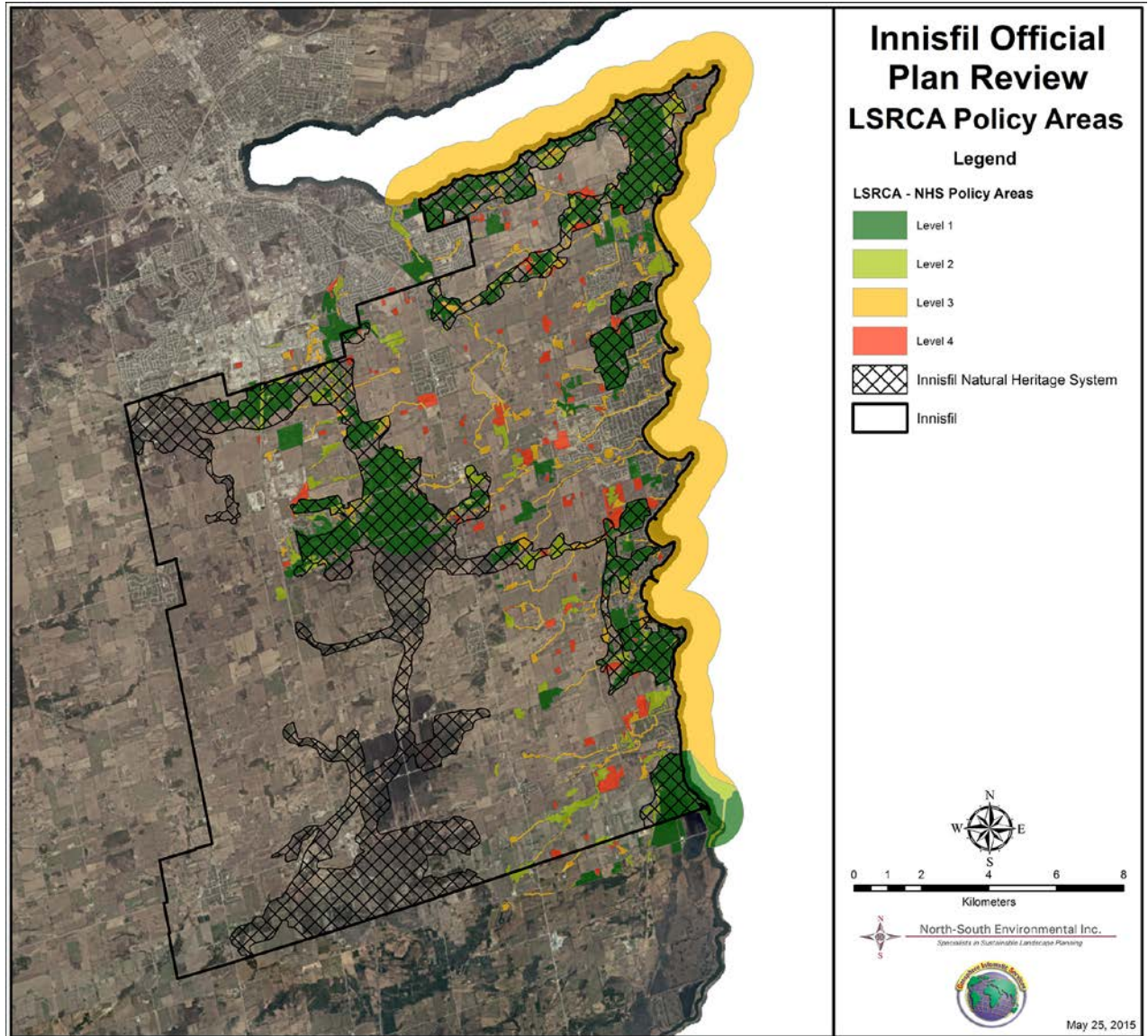


Figure 5. Extent of LSRCA NHS within the Town of Innisfil.

9.2 Linkages, Buffers and Enhancements

Policy protection of key features is strong in general; however there is some flexibility in terms of how and/or if linkages, buffers and enhancement areas are defined and therefore protected as part of the NHS.

Defining and Protecting Linkages

There may be substantial flexibility in the location and/or adjustment of linkage boundaries in some cases. For all linkages, the location must be based on providing ecologically functional connections that maintain a consistent width (i.e., “bottlenecks” or narrowing of the NHS will adversely impact the ecological function provided by a linkage and should therefore be avoided). However, in some cases an entire linkage could be shifted one way or another providing the ecological function is maintained. In cases where a linkage is centered on a feature, it is important that the feature continue to be included within the linkage, and this may in turn limit the degree of flexibility in moving the linkage. Where a linkage is associated with a watercourse, it may be possible to move the watercourse feature and the associated linkage function, to a new location within the landscape. Where two or more linkages have been defined within the NHS, these linkages should not be regarded as “optional linkages”; while the location of individual connections may be flexible, the number of connections should remain the same.

Defining and Protecting Buffers

There is low flexibility for the minimum buffer widths to be applied from the edge of the feature being protected, in general. Field studies are required to make a precise determination of the location of a feature such as a wetland or woodland edge. The delineation of wetland boundaries is based on OWES and the delineation of woodland boundaries is based on areas meeting the definition of “woodland” as defined in the Town of Innisfil’s Official Plan. A woodland edge is generally defined by the “dripline”, which is defined by the outer edge of the canopy of edge trees. It should be noted that, in some cases, more detailed studies may recommend a buffer width greater than the minimum buffer width defined in order to protect natural heritage features and functions.

The buffer applied to streams is intended to be applied from the stream bank as defined by the bankful width. In some cases streams may be defined based on a meander belt width, in these cases the buffer should be applied to the edge of the meander belt. It should also be noted that there may be some flexibility in the location of some watercourses and that as part of a development approval process a stream may be re-located if approved by the appropriate authorities (e.g., Conservation Authority, Department of Fisheries and Oceans, etc.). Following stream re-location and restoration, a 30 m buffer width should be applied to the stream bank or meander belt of the re-located stream.



Defining and Protecting Enhancements

There may be some flexibility in determining the final boundaries of proposed NHS enhancement areas providing the ecological intent and functionality of the proposed enhancement is achieved. In determining NHS enhancement boundaries, existing natural heritage features should not be removed and flexibility should be restricted to those areas identified for enhancement. For example, if the intent of the enhancement is to increase the size of an existing 17 ha woodland to achieve a minimum 20 ha threshold for woodlands, and if the proposed enhancement maximizes the amount of interior forest present, then there would be flexibility regarding the location of the enhancement, as long as these objectives are achieved.

There are different options for the level of protection for non-features in the NHS, as outlined above. The entire system can be protected using the same set of policies (e.g., the same policies would apply to linkages as they would for natural heritage features). Alternatively, strong policy protection can be provided for natural heritage features, and separate policies suggesting but not requiring the protection of linkages, buffers and enhancement areas (i.e., non-feature-based components of the NHS) can be provided. These options will need to be discussed further with the Town of Innisfil, and the public will need to be engaged about NHS planning and policy option decisions.

The 2014 PPS definition of NHS includes “working landscapes” which are interpreted to mean agricultural landscapes. As such, agricultural lands are an integral part of the NHS, and agricultural uses are not intended to be restricted where agricultural lands lie within the NHS.

Options for Developing the NHS:

- Modify policy 3.1.1.2 to specify that linkages **shall** be included in the NHS designation. Linkages are, however, included on the NHS overlay that is included in the current Town of Innisfil Official Plan.
- Base NHS on County’s old Greenlands designation, with refinements.
- Base NHS on Town’s Natural Environmental Area designation with some linkages identified.
- Base NHS on County’s new Greenlands designation.
- Base NHS on LSRCA’s NHS where available. Consider incorporating Level 1-3 or Level 1-4 Policy Areas within the Town’s NHS.
- Clearly identify the components of the NHS, including Key Natural Heritage Features, Key Hydrologic Features and Linkages.
- Include policies and criteria for identifying linkages, buffers and enhancement areas to accompany the Town’s Natural Environmental Area designation to form the Town’s NHS.
- Include a policy that states that agricultural uses are permitted within the NHS.
- The buffers to natural heritage features (e.g., 30 m minimum vegetation protection zone per the Lake Simcoe Protection Plan) should be restored as a condition of approval in order to meet the provisions of the Lake Simcoe Protection Plan.



The options discussed above will be thoroughly reviewed with the residents and stakeholders before a preferred approach is set out in the Directions Paper. An open and inclusive approach of listening to the needs of appellants and seeking common ground that achieves Council approval, and provides an acceptable level of certainty of the private sector will assist in resolving environmental issues as part of the Official Plan Amendment process, thus avoiding costly hearings.

10.0 Natural Heritage System Policies

The Current Official Plan identifies all known significant natural heritage features in the Natural Environmental Area designation. Policies that guide the protection and enhancement of the natural environment are provided in Section 3.1 under Land Use Policies. A description of the Town's NHS and the policies that define and protect the NHS are provided in Section 2.4 Natural Heritage System under Municipal Structure. Consideration could be given to incorporating these two sets of policies into one unified set of environmental policies that are applied to all natural environmental areas and other components of the NHS (i.e., linkage or enhancement areas). For example, Simcoe County's Official Plan has one set of environmental policies for the County Greenlands system, which is their NHS. The new County Official Plan identifies Greenlands as a land use designation, and identifies Greenlands as the NHS of the County of Simcoe in Section 3.8.9 a).

The NHS illustrated on Schedule A of the Town's current Official Plan is an overlay designation, and the policies are clear that the boundaries are schematic. This approach provides a fair amount of flexibility in implementation. It may be preferable to retain this flexibility as it maintains planning options as land is developed, but it also does not provide certainty to either the Town or landowners. Alternative policy approaches for the NHS (i.e., as an overlay or as a designation) are described below.

In addition, there are considerations for policy implications within the working landscape⁶ versus within the Urban and Village Settlements within the NHS designation. Within existing urban areas the natural heritage features and functions of the Town's NHS are based in large measure on the urban land uses that are currently present and which surround the NHS. Within older urban areas the ecological features and functions of the NHS may be limited due to the small size of core areas, an absence of centres for biodiversity, a lack of opportunities for core area enhancements, limited ecological linkage and minimum or no buffers to natural heritage features. Small, isolated natural heritage features within an urban landscape are unable to provide habitat of sufficient quality to sustain the majority of native biodiversity.

⁶ "Working landscape" is included within the definition of "natural heritage system" in the 2014 PPS. It is interpreted to mean agricultural land that can be included in a NHS owing to the ecological function it provides, but it does not mean that it needs to be naturalized.



Within the remaining rural or “working landscape” of Innisfil, the remaining natural heritage features co-exist with ongoing rural, largely agricultural, land uses. Over time a balance has been established between agricultural lands and the remaining woodlands, wetlands, open habitats and riparian areas that provide habitat which sustains the remaining communities that are relatively rich in native plants and animals. In rural areas, the predominant agricultural land use has less impact on natural heritage features and functions than does the more intensive land use of urban areas. Rural stewardship of natural areas is often directed at further enhancing the ecological integrity of natural areas and increasing the sustainability of native biodiversity.

As such, the Town of Innisfil’s NHS defined within rural areas is intended to provide direction for potential future land use changes that would alter the existing balance of the natural heritage features and functions that are embedded within an agricultural landscape matrix. Should there be a change from rural to urban land use, a system of core areas, centres for biodiversity, core area enhancements, ecological linkages and buffers that is sufficiently robust to withstand the more intense ecological impacts associated with urban land use and thereby achieve long term protection of native biodiversity must be identified. Therefore, the delineation and implementation of the NHS is most important within existing rural areas where future land use changes may be proposed.

Wildlife crossings are structures that allow animals to cross human-made barriers safely, and may include: underpass tunnels, overpasses, amphibian tunnels, fish ladders, tunnels and culverts, and even green roofs. Wildlife crossings are used to establish connections or reconnections between habitats in response to habitat fragmentation and road mortality. For example, wildlife crossings can facilitate wildlife movement within the landscape and can reduce wildlife road mortality. Opportunities for installing wildlife crossings in key linkages areas in the Town of Innisfil could be explored as part of implementing the Town’s NHS.

Options for Natural Heritage Policies:

- Develop an NHS for the Town of Innisfil that identifies natural heritage features, core areas, enhancement areas, centres for biodiversity, ecological linkages and buffers.
- Determine if there is a desire to protect the entire NHS using the same set of policies (i.e., equal measures of protection for core areas, linkages, enhancement areas and buffers). The Town of Innisfil could consider applying NHS as a designation to further strengthen the protection of the NHS, including protection of enhancement, linkage and buffer areas.
- Determine if there is a desire to protect natural heritage features using a specific set of policies to address their protection and a separate set of policies to guide the protection of non-features (i.e., linkages, buffers and enhancement areas). Policies addressing the protection of natural heritage features must offer little flexibility to ensure that features are adequately protected, whereas policies addressing the protection of non-features can offer quite a bit of flexibility (see discussions on flexibility pertaining to linkages, buffers and enhancements in Section 4.2).



- Maintain the NHS as an overlay designation, to maintain flexibility in the implementation and refinement of NHS.
- Look for opportunities to install wildlife crossings in key linkage areas to assist in the implementation of the Town's NHS.

11.0 Subwatershed Plans

A subwatershed plan has been prepared for the Barrie Creeks, Lovers Creek and Hewitt's Creek by the LSRCA with input from the Barrie and Innisfil Subwatershed Plans Working Group (LSRCA 2012). Portions of the Lovers Creek and Hewitt's Creek subwatersheds are located in the Town of Innisfil. The plan provides an inventory and review of existing conditions, and provides close to 80 recommendations. The plan states that it is expected that municipal Official Plans will be consistent with the recommendations made in the plan. These recommendations include (LSRCA 2012):

- continued implementation of on-the ground stewardship projects to improve water quality and aquatic habitat, promote infiltration of precipitation, and broaden the extent of natural features;
- promoting and supporting water conservation and re-use initiatives;
- improved land use planning practices to minimize the impacts of development;
- educating members of the public and targeted industries on topics including the dangers of using invasive species in horticulture, the importance of maintaining groundwater recharge areas, and good practices for the use of road salt to minimize environmental impacts;
- researching and using new and innovative solutions to address uncontrolled stormwater;
- evaluating monitoring activities and adjusting programs as necessary; and
- striving to ensure that natural features lost through development are re-established in other parts of the watershed.

A policy gap analysis was completed as part of the subwatershed plan study. This included a review of the Town's Official Plan policies. Gaps identified by LSRCA in the Town of Innisfil include:

- policies pertaining to the application of road salt;
- policies pertaining to climate change;
- policies pertaining to municipal drains; and
- policies pertaining to the introduction and management of invasive species.

Under Policy 8.4 of the Lake Simcoe Protection Plan, municipalities must amend their official plans to ensure that they are consistent with the recommendations of subwatershed plans, upon their five-year official plan review. Therefore, the Town must include policies to complement and support the subwatershed plan and strive to achieve similar outcomes related to ecosystem health.



Under section 6.5 Management Gaps and Recommendations of the subwatershed plan, the following additional gaps are identified in the Town of Innisfil's current Official Plan:

- include policies to contribute to the protection of grassland habitats;
- include policies that would help minimize impervious surface cover through requirements such as using low impact development solutions, limiting impervious surface areas on new development, and/or providing stormwater rates rebates and incentives to residential and non-residential property owners demonstrating best management practices for stormwater.

The Official Plan should also integrate the recommendations or targets of the approved Subwatershed Plans and Lake Simcoe Protection Plan, including the 40% target of high quality natural vegetative cover in the Lake Simcoe watershed, with a minimum target of 25% natural vegetation cover per subwatershed. Lovers Creek subwatershed currently has 35% natural vegetation coverage, and Hewitt's Creek subwatershed currently has 21% natural vegetation coverage. Much of these subwatersheds have been converted to agricultural, industrial, or urban land uses, with urban development dominating much of the near-lake portion of the Lovers and Hewitt's Creeks subwatershed (LSRCA 2012).

To coordinate the implementation of the subwatershed plans, the LSRCA has developed a "Subwatershed Implementation Working Group". Annual reports are prepared to track plan implementation, summarizing accomplishments and gaps in implementation, and identifying projects to be pursued in the upcoming year. The Town's Official Plan could include a policy to work towards implementing the subwatershed plans.

NVCA prepared the Innisfil Creek Subwatershed Plan in April 2006. The Innisfil Creek subwatershed covers a large part of the Town of Innisfil. The Plan provides the following recommendations (NVCA 2006):

Natural Heritage System

- Municipalities should incorporate policies in their official plans indicating that "no development or site alteration" shall be permitted within any wetland meeting provincial criteria for a wetland.
- Municipalities that conduct a detailed natural heritage evaluation identifying their "most significant" or "key features" should place them in their most restrictive official plan designation to ensure that no development or site alteration occurs. All municipalities within the subwatershed should conduct similar detailed natural heritage evaluations.
- The proposed additions to the Natural Heritage System should be incorporated into municipal planning documents. Policies should be provided to protect the natural heritage system from incompatible land use and development.
- Landowners, environmental organizations and stewardship agencies should consider restoration and rehabilitation areas when identifying potential projects.



Aquatic Ecosystem

- No development or site alteration should occur within a minimum of 30 m on either side of a natural stream. Existing agricultural areas are encouraged to provide as much of the 30 m vegetative buffer as possible for natural streams, but no less than 3 m for both streams and municipal drains. Landowners are encouraged to only disturb one side of a drain during clean outs.
- In addition to natural vegetated buffers along watercourses, nutrient inputs within the subwatershed should be controlled by use of all available best management practices.
- The Assimilative Capacity Study recommendations for long-term monitoring should be funded and implemented.
- NVCA staff and their partner organizations should continue to work through the Community River Restoration Program to identify additional opportunities within the Innisfil Creek Subwatershed for focused, detailed restoration studies.

The Town's Official Plan should aim to include policies that support the implementation of recommendations made in the Barrie Creeks, Lovers Creek and Hewitt's Creek Subwatershed Plan (LSRCA 2012) and Innisfil Creek Subwatershed Plan (NVCA 2006).

12.0 Town of Innisfil's Urban Tree Canopy

In addition to the NHS, the Town's urban tree canopy provides many ecosystem and human health benefits including: removing pollution, alleviating urban heat island effects, helping manage storm water, storing carbon (helping to mitigate climate change), providing shade and cooling, reducing stress and anxiety, improving concentration and creativity, and supporting outdoor, active living as well as social interaction and community building. Urban forests consist of all trees, shrubs and understory plants, as well as the soils that sustain them, located on public and private property within a given jurisdiction. This includes trees in natural areas as well as trees in more manicured setting such as parks, yards and boulevards. The urban tree canopy is thus the layer of leaves, branches and stems of trees and shrubs that cover Innisfil's urban communities.

Many municipalities across southern Ontario are setting urban tree canopy goals and developing urban forest management plans. There are many challenges and stressors facing the Town's urban tree canopy, including the recent invasion of Emerald Ash Borer, a non-native insect that infests and kills native ash trees. Portions of the Town's urban areas are also undergoing redevelopment, particularly in areas near the Lake Ontario shoreline, which can result in urban tree canopy losses. The pressures of redevelopment and intensification on existing trees and potential tree habitat are compounded by other environmental threats such as climate change-induced drought stress, and invasive pests and pathogens. Effectively managing these challenges provides opportunities for improving the sustainability of the Town of Innisfil, which in turn creates a healthy community.

There is an opportunity to incorporate policies in the Town's Official Plan to support and protect the urban tree canopy, such as:

- strengthen policies related to the protection of the urban tree canopy;
- include policies to ensure site plan control areas include residential woodlands, that may otherwise not be included;
- include policies that ensure the protection of trees on public and private land are consistently enforced;
- include a policy to require replacement and/or compensation for trees removed in the Town's urban communities;
- include policies that assist with implementing and complying with the Simcoe County Forest Conservation By-law No. 5635; and
- consider developing a Tree-Cutting By-law for the Town of Innisfil to help protect the urban tree canopy.



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