

# Planning for a Greener Future: Natural Heritage System Evaluation

## Issues and Options Report

### How can we Plan for a Greener Future through Natural Heritage?

The City of Orillia has a responsibility to protect its natural environment. Maintaining, restoring, and enhancing the environment within the city is a strategic approach to addressing biodiversity loss and climate change so ecosystems continue to provide clean air, clean water, and a rich diversity of plants and animals to sustain residents for generations. In part, this is accomplished by the development of a natural heritage system.

#### Considerations in Planning for a Greener Future: Natural Heritage

- Natural Heritage System
- Water Resources System
- Shoreline Development Policy

#### What is a “natural heritage system”?

A natural heritage system is a system made up of natural features and areas prescribed in provincial policies and legislation: wetlands, woodlands, valley lands, significant wildlife habitat, areas of natural and scientific interest (ANSI), fish habitat, habitat of endangered and threatened species, and the linkages between and among them. Natural heritage systems planning extends beyond a features-based approach to protecting important natural features and areas. It recognizes that it is not sufficient to protect a particular wetland, woodland, river, or area on its own – but rather within the context of an interconnected system of features, corridors, and buffers. As discussed in the Growing Up Issues and Options Report, Orillia’s Natural Heritage System (NHS) forms an integral part of the City Structure.

### Policy Issues and Options

The policy issues and options outlined below are organized by the elements of the **Planning for a Greener Future** City Move. These elements build on the input received from the community during Phase 1 of Our Orillia Official Plan Review engagement activities and the City Moves Report. These issues and options provide the basis for community and stakeholder consultation in Stage 2 of Our Orillia Official Plan Review and will inform a subsequent Policy Directions Report, which will recommend specific actions to implement in the Official Plan.

**Do you want to know how the Guiding Principles are being considered in the Official Plan?**

Each of the issues outlined in the Report are ‘tagged’ with one or more icons that show how each issue aligns with the Guiding Principles for Our Orillia Official Plan Review.



**Complete Community**



**Strong & Diverse Economy**



**Integrated Mobility**



**Sustainability & Stewardship**



**Safe & Affordable Housing**



**Wellness & Creativity**

## Natural Heritage System

### What does the current Orillia Official Plan say?

Today, the Official Plan relies on outdated natural heritage features-based mapping which does not accurately represent and protect the entire system. Shown on Figure 1 below, “Schedule A” mapping applies an “Environmental Protection Area” designation to protect natural features and areas. This designation is high-level and does not delineate detailed mapping of specific features such as wetlands, woodlands, and valleylands. Parkland and Major Open Space are identified within a separate designation that complements the NHS.

### What does Provincial policy or legislation require us to do?

The Provincial Policy Statement, 2020 (PPS) requires identifying natural heritage systems. Likewise, the Growth Plan for the Greater Golden Horseshoe, Office Consolidation 2020 (Growth Plan) requires that within settlement areas where the natural heritage system for the Growth Plan has not been delineated, the municipality protects natural heritage features and areas in a manner consistent with the PPS. In addition, the Lake Simcoe Protection Plan, 2009 provides prescriptive treatment for the shoreline and natural heritage features above that of the PPS.

The Growth Plan requires identifying a water resources system and protecting key hydrologic features and areas. The water resources system comprises groundwater features, surface water features, and hydrologic functions. The PPS expands on this by including natural heritage features and areas, and shoreline areas. They are deemed necessary for the ecological and hydrological integrity of the watershed.

Phase 1 of the Natural Heritage System Evaluation comprised a background review and gaps analysis of applicable natural heritage information and sources. Proposed NHS mapping and policy options are presented as part of Phase 2 of Our Orillia Official Plan Review. The Natural Heritage System Evaluation

aims to provide a comprehensive, functional, and resilient system of natural features and areas, supported by strong planning policies to identify and protect these resources over the long-term.

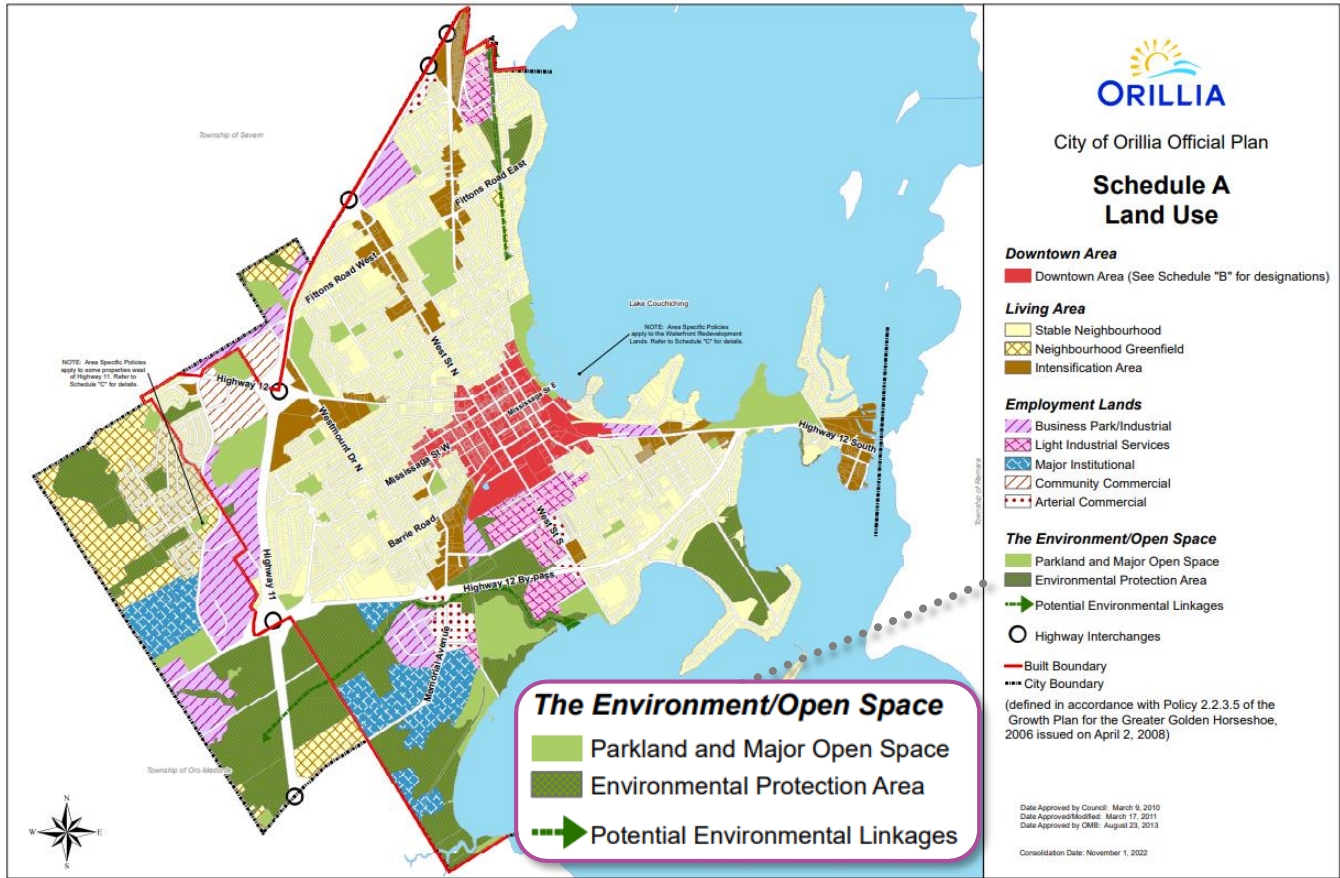


Figure 1 Existing Schedule A and Environmental Protection Area

## Policy Issues and Options

The following policy issues and options have been informed by input from the community, provincial policy and legislation's requirements and directions, and emerging practices in land use planning.



### Issue 1. There is a need to update natural heritage terminology and mapping.

The current Official Plan uses the term Environmental Protection Area. This term has generally been replaced in favour of a “natural heritage system” or similar, as a systems-based approach is presented in provincial policies. Mapping using PPS terminology (i.e., Provincially Significant Wetlands, Other Wetlands, Significant Woodlands, etc.) is also more widely used among practitioners to allow for preliminary environmental screenings. Presenting the terminology as separate entities also allows for varying intent, level of protection, and permitted uses. Currently, the Environmental Protection Area combines all the protected natural heritage features under Schedule A of the current Official Plan (Figure 1 above).

Distinct natural features (i.e., wetlands, woodlands, valleylands, etc.) could be identified as separate components in the NHS mapping where possible. Note that not all relevant features and areas can be defined at the desktop level, and the intent is for smaller-scale studies (at the Environmental Impact Study (EIS) stage) to inform the exact boundaries of the NHS and, in some cases, their significance.

The mapping should also identify potential restoration areas to enhance natural heritage features and create new linkages to protect and enhance the NHS. In alignment with Principle 3 of the Official Plan, delineating these areas as a separate component of the NHS on a Schedule allows for long-term planning as enhancement of natural heritage features and areas can ensure the sustainability and integrity of the environment (Principle 3 of the OP: Ensure the Sustainability and Integrity of the Environment). Additionally, the Community Climate Action Plan (Orillia’s Climate Future) discusses increasing tree cover by 5% per year over the next 20 years and preserving, protecting, and enhancing connected natural areas. To help reach this goal, restoration areas can be considered for park creation, or existing parks can be enhanced.

- Recommendation 1.A – Update terminology from “Environmental Protection Area” to a systems-based approach (e.g., Natural Heritage System). Update Section 3.5 of the Official Plan to reflect changes and create a new Official Plan Schedule (e.g., Schedule A1) that details specific elements of the Natural Heritage System. Include potential restoration/enhancement areas.** An example, for illustrative purposes only, of this mapping is provided as Appendix B. Elements for delineation include but are not limited to linkages, municipally significant wetlands, and fish habitats. Modifications to definitions and policy structures will be required. Proposed terminology (Table 1) will be considered and finalized with the City. The Policy Directions Report will provide policy updates that reflect the updates in terminology.

Under this option, ensuring the NHS aligns with Provincial and local mapping and maintains consistency outside city boundaries will be important, as natural features do not stop at human-derived boundaries. A review of proposed areas of restoration/enhancement will be required, with areas prioritized by City ownership and the ability to provide long-term protection (to be completed under separate cover).

Table 1 Example of Proposed Definitions of New Natural Heritage Terminology

Term	Definition
<b>Linkage</b>	An area that may or may not be associated with the presence of existing natural heritage features. Provides and maintains ecological connectivity between natural heritage features and enables plants and animals to move among natural heritage features, thereby supporting the long-term sustainability of the overall natural heritage system.
<b>Municipally Significant Woodland</b>	Municipal woodlands do not include woodlands meeting the criteria for significant woodlands. They include all terrestrial treed vegetation communities with a percent tree cover greater than 25.

Term	Definition
	These woodlands are determined to be important in terms of features, functions, representation, or amount and contribute to the quality and diversity of an identifiable natural heritage system.
<b>Provincially Significant Woodland</b>	To be determined (Issue 3 below).
<b>Municipally Significant Wetland</b>	Lands that meet the definition of a wetland and which have not been evaluated as a provincially significant wetland. May include wetlands that were evaluated by the province as non-significant but are locally significant.  Wetlands determined to be important in terms of features, functions, representation, or amount and contribute to the quality and diversity of an identifiable natural heritage system.
<b>Provincially Significant Wetland</b>	Those wetlands identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry using evaluation procedures established by the Province, as amended from time to time (PPS, 2020).



**Issue 2. There is a need to establish buffer width guidelines adjacent to natural features and areas to serve as a planning tool for proponents and the City.**

Provincial policy and legislation do not explicitly identify a requirement to introduce minimum buffer widths adjacent to natural features and areas; however, there is a requirement for no negative impacts on adjacent lands. The purpose of identifying the extent of adjacent lands is to establish the area where potential impacts from a proposed land-use change might occur. If adjacent lands can't be avoided from impact, then no development zones (i.e., setbacks or buffers) to a natural feature or area are implemented (typically during an EIS). The current Official Plan defines adjacent lands in policy 3.5.3.3. Also, in policy 3.5.3.3, it is stated that the EIS shall recommend an appropriate buffer. Proponents are more likely to demonstrate consistency with policies if buffer widths are included in the Official Plan and City planning practitioners can ensure the integrity of the environment (Principle 3). However, the option to increase buffer widths during an EIS should be present.

- **Option 2.A – Prescribe minimum buffer widths.** Prescribe minimum buffer widths to be followed based on guidelines and industry standards. Provide an opportunity to increase buffer width based on consideration of site-specific biophysical circumstances such as buffer slope, soil type, hydrology, and vegetation. Include within the policy that, at a minimum, buffers must be achieved and maintained as natural self-sustaining vegetation. The following table proposes minimum buffer widths to be included in the policy.

Table 1 – Proposed Minimum Buffer Widths

NHS Feature or Area		Minimum Buffer Width
Provincially Significant Wetlands		30 metres
Municipally Significant Wetlands		15 metres
Provincially Significant Woodlands		30 metres beyond the dripline
Municipally Significant Woodlands		15 metres beyond the dripline
Valleylands		10 metres
Floodplains		Determined through hazard land mapping
Shoreline (i.e., Lake Simcoe and Lake Couchiching)		30-metre buffer along Lake Couchiching and a 30-metre buffer along Lake Simcoe, or larger if determined appropriate by an EIS.
Watercourses (cool and cold water)		30 metres from the high-water mark on both sides, plus 0.5 metres per 1% of the slope
Watercourses (warm water)		15 metres from the high-water mark on both sides
Significant Wildlife Habitat		Significant Wildlife Habitat criteria schedule to determine setbacks. Where they are not determined, 30 metres
Habitat for Threatened or Endangered Species		To be determined through consultation / permitting with the MECP



**Issue 3. There is a need to update the Significant Woodlands definition and the City may wish to consider mapping Significant Woodland in a Schedule.**

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Currently, the definition for ‘Significant Woodland’ is included under ‘Significant’ in the glossary of the Official Plan. For a woodland to be considered ‘significant’, it must meet three criteria that includes specific hectarage, a minimum number of trees per hectare, and requires the area to have “substantive ecological functional importance due to a combination of characteristics such as species composition and distribution, age of trees, stand history, and the ability to provide core habitat.”

Under the PPS, ‘Significant Woodland’ is defined as:

*“An area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources and Forestry”.*

The criteria referenced in the PPS definition are those outlined in the Natural Heritage Reference Manual (2010). While hectarage and stem counts are quantitative criteria, the qualitative ecological importance criteria can be overlooked or applied subjectively and inconsistently among proponents. Therefore, to avoid a lack of protection and maintain consistency, it is recommended that Significant Woodlands are mapped where known. Mapping Significant Woodlands where possible removes the need for subjective assessments of significance and is being considered under separate cover.

Additionally, the delineation of known Significant Woodlands reduces resource requirements in the planning stages and may also capture woodlands which may be overlooked or not included in the definition. For example, woodlands on slopes that do not meet the stem count criteria may still be particularly important for erosion prevention and buffering services and may meet the qualitative definition for significance without meeting the stem count criteria. Providing delineations may also protect areas that are valuable to linkages, groundwater recharge, or other factors, and a stem count may not be relevant to the City.

- **Recommendation 3.A – Update the definition of Significant Woodland.** The current definition should be updated by switching the ‘and’ conjunction to ‘or.’ In turn, not all three components related to species composition, age of trees, and stand history would be required. Alternatively, the definition may be updated to match the qualitative ecological importance criteria provided in the PPS. All Significant Woodlands will be determined and mapped during an EIS.

**Recommendation 3.B – Update the definition of Significant Woodland and Delineate known Significant Woodlands in Official Plan Mapping.** Update the definition as presented in Recommendation 3.A above. In instances where suitable or known, include Significant Woodlands in NHS mapping. This option would continue to include the requirement that Significant Woodlands must be determined during an EIS where it is not already mapped. Alternatively, these woodlands could be considered ‘of importance’ to the City and used as a tool to flag all development applications within adjacent lands to conduct a significance evaluation. Mapping of known Significant Woodlands would be developed under separate cover.



**Issue 4. The City may consider defining a wetland and woodland compensation policy within the Official Plan.**

The need for compensation for the removal of natural features should always be a last resort to ensure compliance with policy and legislation. However, compensation should include restoration and enhancement requirements along with any financial compensation to offset the loss of the natural feature. In such cases, detailing expectations and providing clear policy direction in the Official Plan may be beneficial to the City. The specifics (e.g., species lists) should be determined based on the site context by a qualified individual, but some elements, such as minimum requirements, can be provided. Woodland compensation planting should target existing wooded areas to increase tree canopy levels. Wetland and woodland compensation should aim to achieve no net loss and, ideally, a net gain in wetland/woodland area, ecological function, and values.

- **Option 4.A – Provide minimum compensation requirements in policy or guidelines.**  
Compensation is a process in which natural features are replaced with newly created natural features. Such a policy will act to maintain or enhance the NHS function within Orillia and the surrounding area, ideally resulting in a net gain of ecological functions and services. The policy would be developed under separate cover, and available staff resources would be considered in order to administer a compensation policy. There are limitations to woodland/wetland compensation, and the policy shall not permit offsetting for significant features as defined under the PPS. Many Conservation Authorities, including Lake Simcoe Region Conservation Area (LSRCA), Credit Valley Conservation (CVC), and Toronto Region Conservation Authority (TRCA), have comprehensive compensation policy documents that the City can use or refer proponents to.
- **Option 4.B – No Action. Do not include minimum compensation requirements in policy or guidelines.**



**Issue 5. Provide guidelines for EISs in addition to the Implementation policies in the Official Plan.**

Guidelines for EISs (e.g., development restrictions, setbacks, and required assessments for development applications) will be provided within the updated Official Plan to support and assist in implementing the natural heritage policies contained in it.

- **Recommendation 5.A:** EIS Guidelines will support interpreting and implementing the EIS policies provided in the updated Official Plan. These guidelines provide a framework of the minimum requirements to assist proponents in creating an EIS. It is also recommended that guidelines provide an avenue for the inclusion of

**Cultural Keystone Species**

Cultural keystone species are species that, by virtue of the key role they play in the underpinnings of a culture, are essential to its integrity. In human cultures everywhere, plants and animals play a fundamental role as food, materials, or medicine. In addition, these species may also feature prominently in languages, ceremonies, and narratives. An example of a cultural keystone species is Black Ash, which is used extensively in basketry.



Indigenous engagement and cultural keystone species identification and protection.

- **Draft guidelines have been provided in the Natural Heritage System Evaluation Gaps Analysis Memo.**

## Water Resources System

### What does the current Orillia Official Plan say?

Orillia’s Official Plan contains policies for “Groundwater Recharge Areas” within Section 3.5.3 “Environmental Protection Area” and includes “Source Water Protection” features on Schedule “F” (Figure 2 below). The objective of the Official Plan is to protect or enhance the quality and quantity of groundwater and surface water. The Official Plan incorporates the Lake Simcoe Protection Plan and the South Georgian Bay Lake Simcoe Region’s Source Protection Plan.

### Policy Issues and Options

The following policy issues and options have been informed by input from the community, provincial policy and legislation requirements and directions, and emerging practices in land use planning.

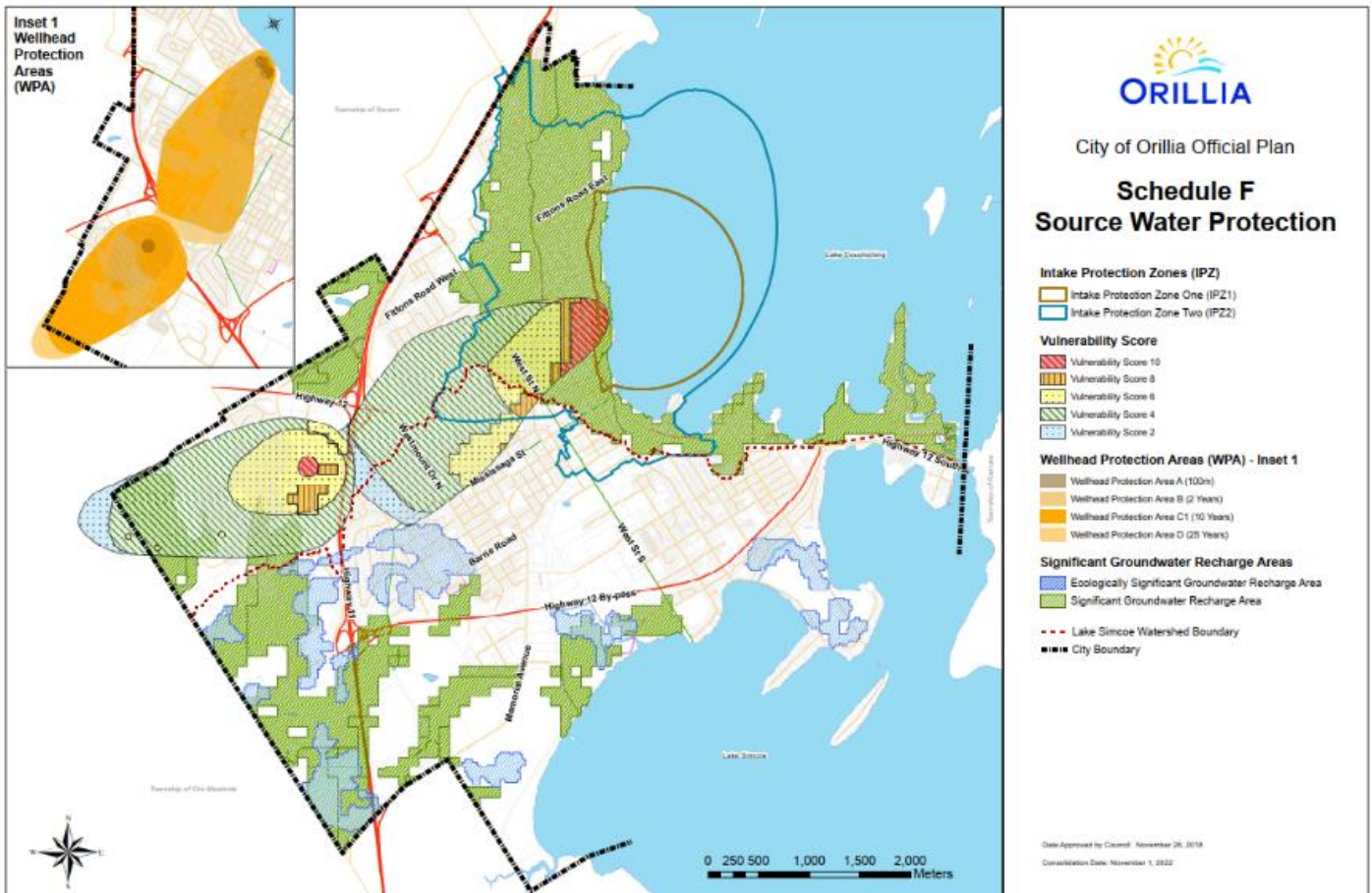


Figure 2 Existing Schedule F displaying elements of the Water Resource System



**Issue 6. Define water resource terminology and include terminology throughout the Official Plan.**

The current Official Plan Section 4.7 Lake Simcoe Watershed uses the term “key hydrologic features” from the Lake Simcoe Watershed, Chapter 6. However, the rest of the Official Plan does not include this term.

- Recommendation 6.A – Define the Water Resource System.** The NHS and Water Resource System (WRS) are ecologically linked and have overlapping components. The establishment of these systems is required by Provincial policy. Key hydrologic features are wetlands, permanent and intermittent streams, inland lakes and their littoral zones, and seepage areas and springs. Key hydrologic areas are significant groundwater recharge areas, highly vulnerable aquifers, and significant surface water contribution areas. These features can be defined as such on Schedules and included in the definitions. The WRS would include these key hydrological features and areas, providing terminology and policy that are more aligned with the PPS and the Growth Plan.

## Shoreline Development Policy

### What does the current Orillia Official Plan say?

Orillia’s Official Plan contains policies which implement the Lake Simcoe Protection Plan. Specifically, Section 4.7 establishes high-level policies which apply to development within the Lake Simcoe Watershed. In part, these policies work to protect the City’s shoreline and guide future development. Following the adoption of the Official Plan in 2014, the City updated its Zoning By-law to provide further protection for shoreline areas through the establishment of the “Shoreline Buffer Overlay Zone”. These overlay zones provide for a 15-metre buffer along Lake Couchiching and a 30-metre buffer along Lake Simcoe.

### What does Provincial policy or legislation require us to do?

The PPS contemplates shoreline areas through policy directing water protection, improvement, and restoration. Municipalities are required to identify and maintain surface water features, including shoreline areas. The Lake Simcoe Protection Plan, which applies to part of Orillia’s waterfront, prioritizes protecting and restoring the Lake Simcoe Shoreline.

### Policy Issues and Options

The following policy issues and options have been informed by input from the community, the requirements and directions of Provincial policy and legislation, and emerging practices in land use planning.



**Issue 7. Update overlay zones to provide a 30-metre buffer along Lake Simcoe and Lake Couchiching.**

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As stated above, the current by-laws implement different lake overlay zones. Under the NHS direction, a consistent buffer zone is recommended.

- **Recommendation 7.A – Update the by-law and Official Plan to increase the 15-metre “Shoreline Buffer Overlay Zone” to 30-metre for Lake Couchiching.**



**Issue 8. Orillia’s Official Plan does not contain policies that specify native vegetation or characteristics of a vegetative buffer along the water’s edge. There is an opportunity to review the policies of the Official Plan as they relate to shoreline vegetation and naturalization to help protect and enhance Orillia’s waterfront over the long-term.**




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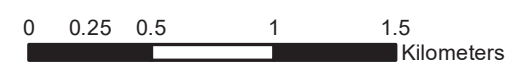
Shoreline naturalization is a process in which disturbed or eroded shorelines are restored with native vegetation with the goal of bringing back a lake’s natural shoreline. Restored shorelines can improve water quality, mitigate flooding, and improve terrestrial and aquatic wildlife habitats. Natural shorelines are critical to the general health of a lake. The following are options that will support the restoration and protection of Orillia’s shorelines.

- **Recommendation 8.A. – Identify specific native vegetation requirements for naturalized buffers and establish a 30-metre shoreline naturalization buffer along both Lake Couchiching and Lake Simcoe.**

# DRAFT SCHEDULE 'B' NATURAL HERITAGE SYSTEM

## CITY OF ORILLIA OFFICIAL PLAN

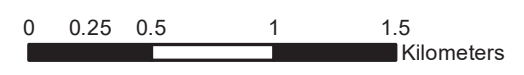
-  City of Orillia Boundary Area
-  Lake Simcoe Protection Plan
-  Natural Heritage System



# DRAFT SCHEDULE 'B1' WOODLANDS AND HABITAT FEATURES











## CITY OF ORILLIA OFFICIAL PLAN

-  City of Orillia Boundary Area
-  Lake Simcoe Protection Plan
-  Restoration Enhancement Areas
-  Linkages
-  Wildlife Habitat Area
-  Significant Woodlands



# DRAFT SCHEDULE 'B2' KEY HYDROLOGIC FEATURES

## CITY OF ORILLIA OFFICIAL PLAN

-  City of Orillia Boundary Area
-  Lake Simcoe Protection Plan
-  Fish Habitat (Cold Water)
-  Fish Habitat (Undefined)
-  Wildlife Habitat Area
-  Fish Habitat (Pond)
-  Waterbody
-  Unevaluated
-  Local-Significance
-  Evaluated-Provincial

