



Environment & Greenlands System

Discussion Paper



September 2019
Durham Region
Planning and Economic
Development Department

This Discussion Paper is published for public and agency comment as part of Envision Durham, the Municipal Comprehensive Review of the Regional Official Plan.

Report contents, discussion questions, and proposed directions, where applicable, do not necessarily represent the position of Durham Regional Council on changes that may be considered to the Regional Official Plan.

All information reported and/or collected through this Discussion Paper will help inform, and be used as part of the Municipal Comprehensive Review.

Please provide your comments on this Environment & Greenlands System Discussion Paper by December 2, 2019.

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About Durham Region

Durham Region is the eastern anchor of the Greater Toronto Area, in the Greater Golden Horseshoe area of Ontario. At over 2,590 square kilometres, Durham offers a variety of landscapes and communities, with a mix of rural, urban and natural areas. The southern lakeshore communities of Pickering, Ajax, Whitby, Oshawa and Clarington provide urban areas and a diverse employment base. The northern townships of Scugog, Uxbridge and Brock are predominantly rural, with a thriving agricultural sector. Durham Region is the home of the Mississaugas of Scugog Island First Nation and spans a portion of the territories covered by the Williams Treaties of 1923.¹

Over 80 per cent of the region lies within the provincially-designated Greenbelt, which also contains the environmentally significant Oak Ridges Moraine. With access to ample green space and lakes, rivers and urban amenities, Durham Region offers a high quality of life for both city and rural residents.

Today, Durham is home to just under 700,000 people. By the year 2041, our population is expected to grow to 1.2 million people, with over 430,000 jobs. Our vision is to create healthy and complete, sustainable communities, shaping Durham into a great place to live, work, play, grow and invest.

¹ The Williams Treaties include traditional territories of seven First Nations, including the Chippewas of Beausoleil, Georgina Island and Rama and the

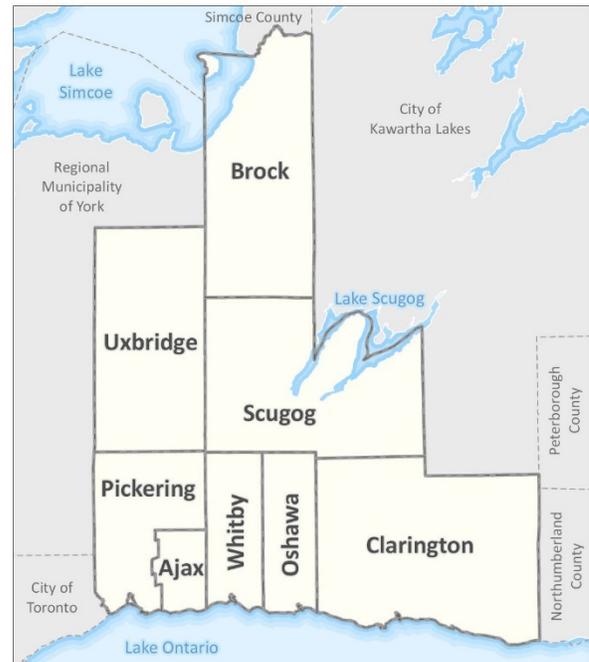


Figure 1: Map of the Region of Durham

About Envision Durham

Envision Durham, the Municipal Comprehensive Review (MCR) of the Regional Official Plan (ROP), is an opportunity to plan for fundamental change, by replacing the current ROP and establishing a progressive and forward-looking planning vision for the region to 2041.

Over the next few years, the Region is undertaking Envision Durham to review:

- How and where our cities and towns may grow.
- How to use and protect our land and resources.

Mississaugas of Alderville, Curve Lake, Hiawatha and Scugog Island.

- What housing types and job opportunities are needed for our residents.
- How people and goods move within, across and beyond our region.

We're planning for an attractive place to live, work, play, grow and invest—and we're asking for your help.

Why review the Official Plan?

The ROP guides decisions on long-term growth, infrastructure investment and development — providing policies to ensure an improved quality of life — to secure the health, safety, convenience and well-being of present and future residents of Durham.

Under the Planning Act, there is a legislative requirement to review the existing ROP every five years. Since the approval of the last ROP update (January 2013), the Province of Ontario has completed several significant provincial policy initiatives, including the co-ordinated review and update to the following provincial plans:

- The Growth Plan for the Greater Golden Horseshoe, 2017 (Growth Plan), which was replaced by A Place to Grow: Growth Plan for the Greater Golden Horseshoe (A Place to Grow) in May, 2019.
- The Greenbelt Plan, 2017.
- The Oak Ridges Moraine Conservation Plan, 2017 (ORMCP).

The Planning Act requires the Region to complete a Provincial Plan conformity exercise, to amend the ROP, to ensure that it:

- Conforms with provincial plans or does not conflict with them.
- Has regard to matters of provincial interest.
- Is consistent with Provincial Policy Statements.

Envision Durham constitutes Durham's Provincial Plan conformity exercise and its five-year review of the ROP, thus satisfying these legislative requirements.

How to get involved

Public input is integral to the success of Envision Durham—we want to hear from you!

Please use this opportunity to share your vision for Durham—tell us your thoughts and opinions on the key Discussion Questions raised throughout this document (Appendix A).

Join the conversation by visiting durham.ca/EnvisionDurham to submit your comments.

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Executive summary

This paper is the fourth in a series of Discussion Papers that form part of the Envision Durham exercise. Discussion papers have been released on the following topics:

- Agriculture & Rural System.
- Sustainability & Climate Change.
- Growth Management – Urban System.

This discussion paper provides an overview of Durham’s Environment and Greenlands System, explains the current Regional Official Plan (ROP) policy framework, identifies provincial policy requirements and trends since the last ROP review, and identifies preliminary approaches and questions for discussion and feedback.

Durham’s Greenlands System as shown in Figure 5 on page 17, comprises approximately 40 per cent of the Region’s land base. The Greenlands System includes Major Open Space Areas, Oak Ridges Moraine Areas, and Waterfront Areas as well as Tourist Activity/Recreational Nodes, Waterfront Places, Open Space Linkages, and Waterfront Links. This system supports environmental conservation, major recreational uses including golf courses and ski hills, and other rural and agricultural land uses. The Greenbelt is a component of both the Region’s Rural and Greenlands Systems; comprising about 80 per cent of the Region’s land base.

Issues which are relevant today that will be considered through Envision Durham include:

- Strengthening environmental policies, including identifying and protecting natural heritage systems.
- Addressing impacts to the natural environment, including environmental degradation, loss of tree cover and wildlife habitat.
- Protection of water resources.
- Climate change.
- Invasive species.
- Ecosystem compensation.
- Consideration of traditional ecological knowledge.
- Environmental stewardship.

Through this exercise, the Region will review its Environment and Greenlands System policies and implement the Provincial Policy Statement and Provincial Plans by (among other matters):

- Updating goals and objectives for these subject areas, if necessary.
- Updating definitions (and associated policies) to reflect revised provincial policy.
- Broadening goals and policies to:
 - Further support the identification and protection of natural heritage systems.
 - Protect water resource systems and key hydrologic areas, in addition to key hydrologic features.
 - Implement Source Protection Plans, the Lake Simcoe Protection Plan, and other relevant provincial policy and legislation.
 - Enhance watershed planning requirements.
 - Strengthen policies restricting development in areas that are subject

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- to natural hazards; and consider the impacts of climate change on natural hazards in accordance with provincial policy.
- Add further detail regarding vegetation protection zones, if determined to be appropriate.
- Incorporate policy support for the preparation of cultural plans and archaeological management plans, where appropriate.
- Consider updated waste management policies and legislation including the implications of development and land use patterns on waste generation, management and diversion.
- Reference provincial guidance where appropriate.
- Incorporate policy considerations to account for: enhanced Indigenous engagement requirements (particularly around the cultural heritage landscape and archaeological resources); green infrastructure; and wildland fire hazards.
- Review policies and technical documents related to land securement, environmental impact studies, and land use compatibility, including site contamination, noise, and light pollution.
- Review “Tourist Activity/Recreational Nodes”, “Open Space Linkages”, and “Waterfront Links” that form part of the existing Greenlands System.

The Region will also seek to make changes to its Land Use Schedules (mapping) in the ROP with a view to:

- Update natural features and water resources mapping to reflect currently

available data and include additional mapping for source protection and water resources.

- Refine, where necessary, the Greenlands System to reflect Provincial Agricultural and Natural Heritage Systems mapping.
- Establish a Regional Natural Heritage System.
- Refine or redefine the Major Open Space Areas designation.
- Consider whether to include supplemental mapping identifying Watershed Plan Areas.

Many of Durham’s area municipalities have recently completed reviews and updates of their local official plans. Through Envision Durham, the Region will consider these recent updates — to environmental policy and mapping — that were undertaken at the local level, as well as changes to land use planning policy at the provincial level.

The intersection of Environment and Greenlands System policies with other thematic areas will be considered holistically through Envision Durham.

The Region is committed to working collaboratively with Durham’s area municipalities, conservation authorities, the Ontario Ministry of Municipal Affairs and Housing, Ontario Ministry of Natural Resources and Forestry, Ontario Ministry of Environment, Conservation and Parks, Durham Environmental Advisory Committee, Indigenous Peoples, key stakeholders, and the public, to develop policies that implement provincial direction that is tailored to Durham’s local context.

How to get involved

Public input is integral to the success of Envision Durham — we want to hear from you!

Please use this opportunity to share your vision for Durham — tell us your thoughts and opinions on the key Discussion Questions raised throughout this document (Appendix A).

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1.0 Provincial land use planning policy context

Ontario has a policy-led land-use planning system, governed by the Planning Act (and other legislation) with direction provided through a series of provincial land use planning policy documents. Land use policies from the Province of Ontario are implemented by the Region in the ROP. Detailed area municipal official plans must then conform to the ROP.

The following Provincial Plans apply to lands within Durham, as shown in Figure 3 on page 10:

- The Oak Ridges Moraine Conservation Plan, 2017 (ORMCP).
- The Greenbelt Plan, 2017.
- A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019 (Growth Plan).
- The Central Pickering Development Plan, 2006 (CPDP).
- Lake Simcoe Protection Plan, 2009 (LSPP).



Figure 2: Planning Hierarchy.

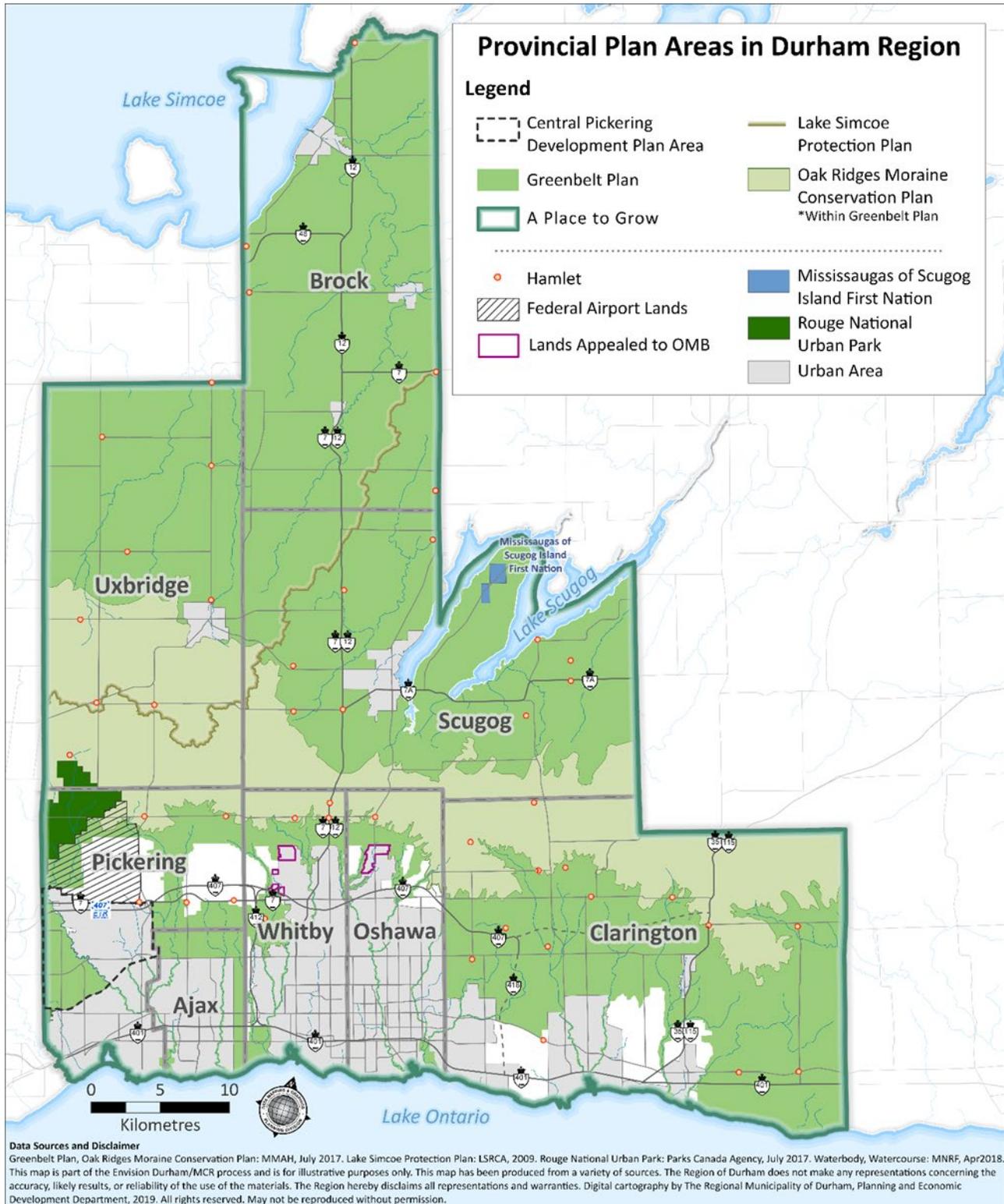


Figure 3: Provincial Plan Areas in Durham Region.

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1.1 Provincial policy and legislation that impacts the Environment and Greenlands System

The current Provincial Policy Statement (PPS) came into effect in 2014. In 2017, the Province of Ontario updated the Growth Plan, the Greenbelt Plan and the Oak Ridges Moraine Conservation Plan. In 2019, the Growth Plan was further amended. Through the Envision Durham exercise, the Region will implement the PPS and provincial plans, as well as other legislation and plans, that impact the Environment and Greenlands System.

The Region will continue to monitor and track policy changes at the provincial level, and address as appropriate through Envision Durham.

1.1.1 Provincial Policy Statement

The PPS indicates, “Ontario’s long-term prosperity, environmental health, and social well-being depend on conserving biodiversity, protecting the health of the Great Lakes, and protecting natural heritage, water, agricultural, mineral and the cultural heritage landscape and archaeological resources for their economic, environmental and social benefits.”

The PPS requires the wise use and management of resources and protection of the health of the Great Lakes, natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental, and social benefits. The PPS directs that natural features and areas and water

resources shall be protected for the long term and requires municipalities to identify natural heritage systems and water resource systems (ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas) in official plans.

The PPS includes a policy that encourages planning authorities to promote green infrastructure to complement traditional infrastructure.

In July of 2019, the Province of Ontario released proposed revisions to the PPS for comment. Potential changes related to the Environment & Greenlands System policies include:

- Strengthened requirements for effective engagement with Indigenous communities, including consideration of traditional knowledge in land use planning.
- Increased flexibility for municipalities to manage wetlands that are not identified as significant.
- Introduction of requirement for evaluation of the impacts of climate change in watershed planning, consistent with the requirements of the A Place to Grow.
- Introduction of requirement for preparation for the impacts of climate change in relation to natural hazards.
- Introduction of policy in support of best practices in management of excess soil.
- Changes to cultural heritage definitions.

1.1.2 A Place to Grow

A Place to Grow recognizes the value of protecting hydrologic and natural heritage features and areas as part of its section titled, “Protecting What is Valuable”. The plan requires that these assets are wisely protected, similar to the level of protection provided by the Greenbelt, and managed as part of planning for future growth.

A Place to Grow contains policy guidance regarding watershed planning, the implementation of a Natural Heritage System and policy to support green infrastructure. A Place to Grow also requires municipalities to develop and implement official plan policies and other strategies in support of water conservation, including water demand management, for the efficient use of water and water recycling to maximize the reuse and recycling of water.

The current ROP implements the Growth Plan for the Greater Golden Horseshoe (2006) and will be updated through Envision Durham to conform with A Place to Grow, 2019. In 2018, the Province released a Growth Plan Natural Heritage System that identifies a natural heritage system beyond the Greenbelt Plan Area within the Greater Golden Horseshoe, outside of urban areas.

1.1.3 Greenbelt Plan and Oak Ridges Moraine Conservation Plan

Since the early 2000s, the Province of Ontario has strengthened protection of the environment through the introduction of the Oak Ridges Moraine Conservation Plan (ORMCP) in 2002, and the Greenbelt Plan in 2005. The Greenbelt Plan includes lands

within, and builds upon the ecological protections provided by, the Niagara Escarpment Plan (NEP) and the ORMCP. The NEP does not apply to lands in Durham Region.

The Provincial Greenbelt Plan identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological and hydrological features, areas and functions occurring on this landscape.

The ORMCP is an ecologically based plan — established by the Province of Ontario under the Oak Ridges Moraine Conservation Act, 2001 — to provide land use and resource management direction for the Oak Ridges Moraine. Land use activity on the Oak Ridges Moraine is governed by the Oak Ridges Moraine Conservation Act, and the Oak Ridges Moraine Conservation Plan (ORMCP).

The current ROP implements the ORMCP (2002) and the Greenbelt Plan (2005) and will be updated through Envision Durham to conform with the 2017 plans. Key updates included the addition of policies for key hydrologic areas, as well as the introduction of policies and mapping pertaining to urban river valleys.

Approximately 90 per cent of survey respondents think that protecting the Oak Ridges Moraine and Greenbelt as vital components of the region is “very” to “extremely important”.

(Based on the Envision Durham Public Opinion Survey results, 391 respondents).

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1.1.4 Lake Simcoe

The Lake Simcoe Protection Plan (LSPP) was approved in 2009 and was established to improve water quality, protect the watershed's natural heritage resources, and manage the effects of climate change and invasive species.

The Lake Simcoe watershed contains significant natural, urban and agricultural systems, including portions of the Oak Ridges Moraine and the Greenbelt. It also holds provincially significant wetlands, woodlands and prime agricultural areas. Approximately one third of the region's geographic area lies within the Lake Simcoe watershed, including the Uxbridge, Sunderland, Cannington and Beaverton Urban Areas, as shown in Figure 3, on page 10.

Through Envision Durham, the ROP will be updated to include the requirements of the LSPP, including:

- Revising growth management policies related to urban boundary expansions to ensure that reference is made to the LSPP.
- Confirming the policy changes related to sewage and stormwater.
- Confirming the enhanced restrictions to development within vegetation protection zone (VPZ) along the Lake Simcoe shoreline.
- Confirming the enhanced Environmental Impact Study (EIS) requirements for development and site alteration along the Lake Simcoe shoreline.

1.1.5 Water

Since 2003, protection of water resources and systems has become a key provincial priority. There are a variety of legislative, policy and program measures that apply to water. These include:

- Clean Water Act, 2006, Source Protection Plans, 2015, and related Assessment Reports.
- Lake Simcoe Protection Plan, 2009.
- The Great Lakes Protection Act, 2015, and Strategy.
- International agreements such as the Canada-US Great Lakes Water Quality Agreement and the Canada-Ontario Agreement respecting the Great Lakes Basin Ecosystem.

Additionally, the provincial land-use plans have been updated to include more detailed policies for the protection of water resources, watershed planning, and support of the above-noted policy and legislation.

Through Envision Durham, the Region will be strengthening policies related to water resources, as appropriate, to implement and support associated provincial legislation and policy.

1.1.6 Endangered species

The protection of endangered species and their habitat is part of the provincial effort to conserve Ontario's biodiversity.

The 2014 PPS included new policies related to Species at Risk, including a definition of Habitat of Endangered Species and

Threatened Species that must be addressed in the ROP.

1.1.7 Invasive species

Since the last review of the ROP, the Invasive Species Act, 2015 has been passed and has had a significant effect on how invasive species are managed in Ontario. The Invasive Species Act, 2015 sets out the rules to prevent and control the spread of invasive species throughout the province. This legislation builds off the 2012 Ontario Invasive Species Strategic Plan, which established a strategy to mitigate the impacts of invasive species in the province.

Among the significant changes, the act defines an invasive species as a species that is not native to Ontario and is harmful or can be harmful to the natural environment. This includes plants, animals, or micro-organisms. In addition, the act classifies invasive species as either prohibited or restricted. Prohibited species are subject to a full prohibition while restricted species are subject to various regulations related to deposit or release.

Through Envision Durham, the Region will be considering incorporation of policies related to invasive species.

1.1.8 Waste

In 2016, the Waste Free Ontario Act (Bill 151) received Royal Assent. This act repealed the Waste Diversion Act, 2002, and enabled the Resources Recovery and Circular Economy Act, 2016 and the Waste Diversion Transition Act, 2016.

The Waste Free Ontario Act focuses on shifting the responsibility and costs of waste

management to producers and manufacturers of packaging and other designed products.

The Resource Recovery and Circular Economy Act also requires amendments to official plans, by-laws and other prescribed instruments related to waste reduction and resource recovery if necessary to be consistent with provincial policy statements.

In February 2017 a provincial strategy titled, Strategy for a Waste-Free Ontario: Building the Circular Economy, was released. The first policy statement issued under the authority of the Resource Recovery and Circular Economy Act in April 2018 was the Food and Organic Waste Policy Statement.

Through Envision Durham, the Region will consider whether adding policies is appropriate to reflect changes in provincial policy, as well as monitor on-going policy and legislative changes, in consultation with Durham Region's Works Department.

1.1.9 Environmental Protection Act (EPA)

The Environmental Protection Act (EPA) establishes various pollution controls in the province. The act prohibits the discharge of contaminants into the natural environment that may cause an adverse effect. In addition, the EPA establishes the definition of waste and waste disposal site, which is relevant to ROP policies.

The ROP must be consistent with the policies established in the EPA.

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1.1.10 Made in Ontario Environment Plan

The Made in Ontario Environment Plan was released for public consultation in November 2018 by the Province of Ontario. This plan establishes how the province will address climate change and greenhouse gases, water resources, reductions in waste, clean soil, and the protection of natural ecosystems among other environmental issues.

Through Envision Durham, the Region will monitor the potential outcome based on the public consultation and implement policies brought forward by the plan as appropriate.

1.2 Guidance Documents

To support the implementation of the provincial plans, several guidance documents have been released by the Province of Ontario as resources to aid municipalities in the interpretation and implementation of provincial policy.

Relevant guidance documentation and resources pertaining to the Environment/Greenlands System theme include:

- Natural Heritage Reference Manual, 2005.
- Greenbelt Plan 2005 – Technical Definitions and Criteria for Key Natural Heritage Features in the Natural Heritage System of the Protected Countryside Area: Technical Paper 1, 2012.
- The Regional Natural Heritage System for the Growth Plan for the Greater Golden Horseshoe: Summary of Criteria and Methods, 2018.
- Wildland Fire Risk Assessment and Mitigation Reference Manual in Support of the PPS 2014, 2017.
- Management of Excess Soil: A Guide for Best Management Practices, 2016.
- Strategy for a Waste-Free Ontario: Building the Circular Economy, 2017.

2.0 Current Durham Regional Official Plan

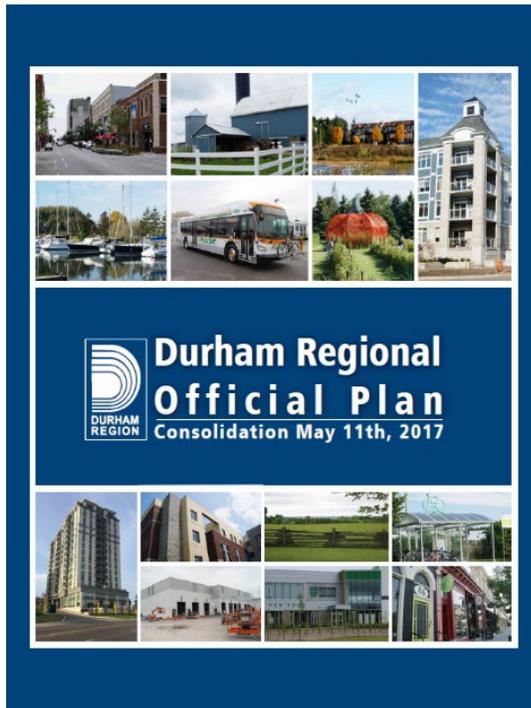


Figure 4: Cover of ROP

Within the ROP, the term environment refers to the natural, built and cultural environments. This includes air, soil, water, plant, landform and animal life, social and cultural conditions, buildings or structures and the direct or indirect impacts of human activities.

The ROP is based on a Regional Structure, which includes a continuous Greenlands System that is integrated with both the Urban and Rural Systems, to protect and connect the Oak Ridges Moraine, key natural heritage and hydrologic features, waterfronts, and to provide urban separators (lands that define and separate Lake Ontario based urban areas), and recreational opportunities.

Durham’s Greenlands System includes the following land use designations, as shown in Figure 5, on page 17:

- Major Open Space Areas.
- Oak Ridges Moraine Areas.
- Waterfront Areas.
- Tourist Activity/Recreational Nodes.
- Waterfront Places.
- Open Space Linkage.
- Waterfront Links.

Approximately 82 per cent of survey respondents think that the provision of opportunities for a variety of outdoor recreational activities compatible with the region’s natural areas is “very” to “extremely important”.

(Based on the Envision Durham Public Opinion Survey results, 391 respondents).

Durham’s Greenlands System comprises approximately 40 per cent of the region’s land base. This System supports environmental conservation, major recreational uses (including golf courses and ski hills), waterfronts, and other rural and agricultural land uses. Many of these have been discussed in further details in the Agriculture and Rural System Discussion Paper.

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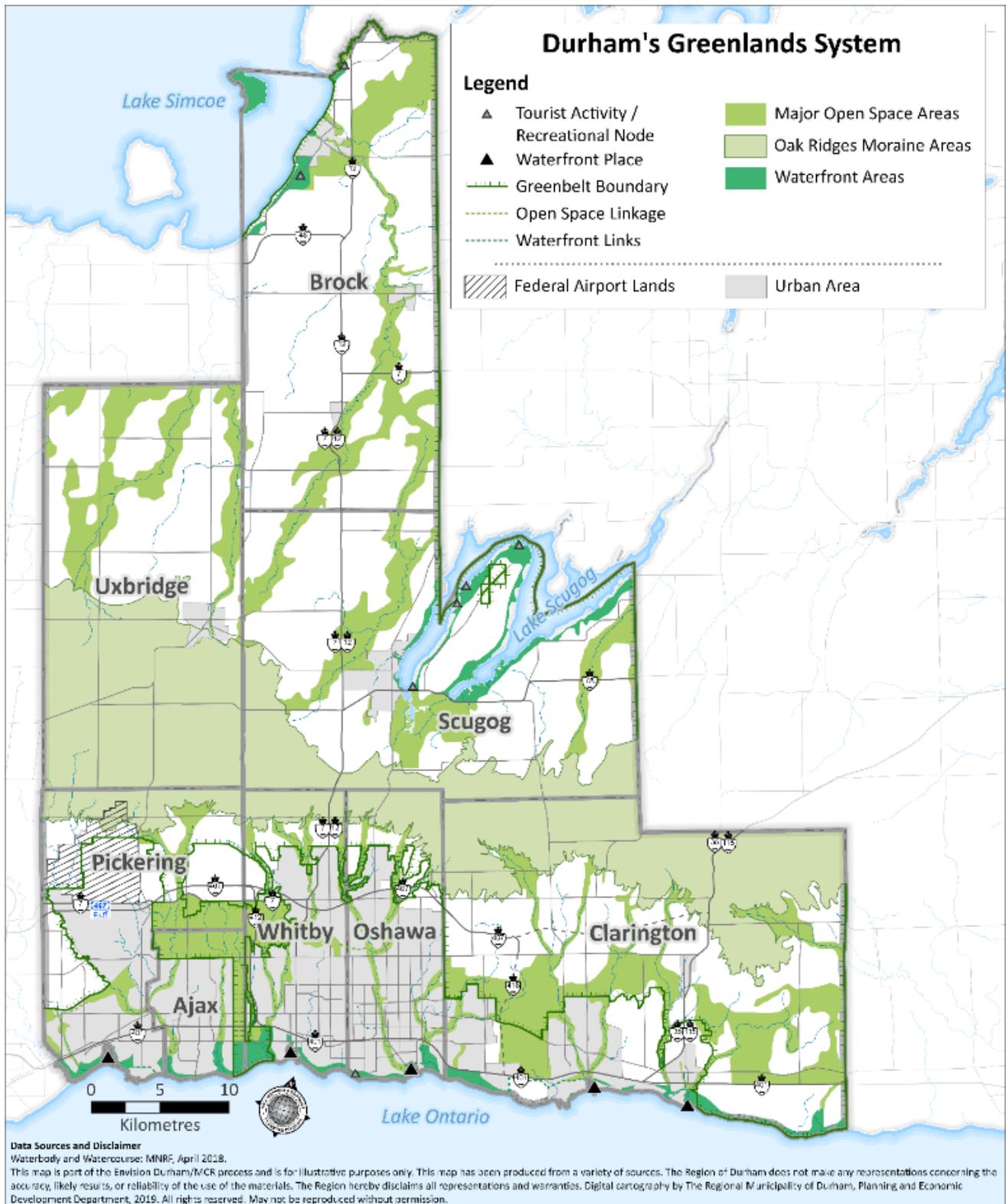


Figure 5: Durham Region's existing Greenlands System.

The current ROP establishes broad land use goals and directions. Some of the directions that support the Environment and Greenlands System include:

- Recognizing the distinction between Urban Areas and areas where agriculture and open space predominate.
- Encouraging developments that utilize land efficiently.
- Protecting significant features and functions of the natural environment.
- Encouraging development that will not have adverse cumulative impacts on the natural, built and cultural environments.
- Encouraging stewardship of land.
- Coordinating and managing the development of the Region in a manner that is consistent with provincial planning policies.
- Identifying and protecting resources in the region.

The ROP sets out goals specifically for the environment, which support:

- The preservation, conservation and enhancement of the natural environment for its valuable ecological functions and for the enjoyment of Durham's residents.
- Good community planning and design that enhances the regional landscape and minimizes pollution of air, water and land resources, as well as enhances public health and safety.
- Preservation and promotion of the attributes of communities and the historic and the cultural heritage landscape of Durham.
- Planning based on an understanding of the relationship between the natural and

built environment and the principle of preserving resources and protecting the natural environment for future generations.

The ROP sets out goals for the Greenlands System, which support:

- The establishment of a continuous system of open spaces (within and outside of the Oak Ridges Moraine, including waterfront areas) that weave through and between the Urban and Rural Systems to ensure ecological health and renewal and to assist in creating distinct Urban Areas.
- Protection of significant habitats of plants, fish and wildlife within natural, built and cultural environments.
- Opportunities for a variety of compatible recreational activities.
- Protection of the ecological and hydrological features and functions of the Oak Ridges Moraine and Greenbelt Protected Countryside in perpetuity as a vital component of the region's natural, built, and cultural environment, and in support of the province's vision of a continuous band of open space providing form and structure to south-central Ontario.
- Protection, sustainment, and enhancement of waterfronts as major and vital components of Durham's natural, built and cultural environments.

The goals of the ROP are achieved through structural policies that provide direction on development within the Greenlands System land use designations. Through this review, these goals will be evaluated, and input on policies and approaches will be requested.

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The ROP strives to balance growth, while conserving resources (such as agricultural land and aggregate resources), and protecting the environment.

Through discussions with Durham's conservation authorities and area municipalities, it was expressed that there is a need to add language around restoration and enhancement of the environment and to better clarify the policy framework where environment and agriculture interrelate.

Discussion Question:

Are the current goals for the Environment and Greenlands System still relevant/appropriate?

The ROP states that Regional Council shall, in co-operation with the provincial government, area municipalities, and conservation authorities, make every effort to preserve the ecological benefits and biodiversity of the Greenlands System (including groundwater resources, air purification, habitats for plants, fish and wildlife, flood and erosion control, and scenic and recreational values).

The Greenlands System includes areas with the highest concentration of sensitive and/or significant natural features and functions. These areas are to be managed as a connected and integrated natural heritage system recognizing the functional inter-relationships between them.

The main features of the Greenlands System, particularly the Oak Ridges Moraine, valley systems and the waterfronts, are to be protected for their special natural and scenic

features, their roles as predominant landscape elements in the region and the recreational opportunities that they facilitate.

Further, linking the waterfronts with the Oak Ridges Moraine through the connecting valley systems is a primary objective of the continuous Greenlands System, as is linking the valley systems themselves. The Greenlands System also contains agricultural and agriculture-related, and on-farm diversified uses which are to be protected as integral components of the system.

The maintenance and enhancement of the size, diversity and connectivity of key natural heritage and hydrologic features within the former Lake Iroquois Shoreline is encouraged.

Since 2003, the Region received 20 applications to amend the ROP, one was denied, one was appealed, and one is still in process pertaining to lands in the Greenlands System, which are classified as follows:

- Five applications proposed the consolidation of non-abutting farm parcels, and allowed for the severance of a dwelling rendered surplus to a farm operation.
- Four applications dealt with aggregate operations (Three expansions, one new).
- Other applications proposed commercial and industrial uses (including an expansion to a recycling facility, coffee shop and drive through, and contractor's yard), a golf course, residential development in the rural area, and the extension of municipal water and/or sanitary sewer services.

Applications for site specific Regional Official Plan Amendments in the Greenlands System filed between 2003 and 2018 are shown in Figure 6, on page 21.

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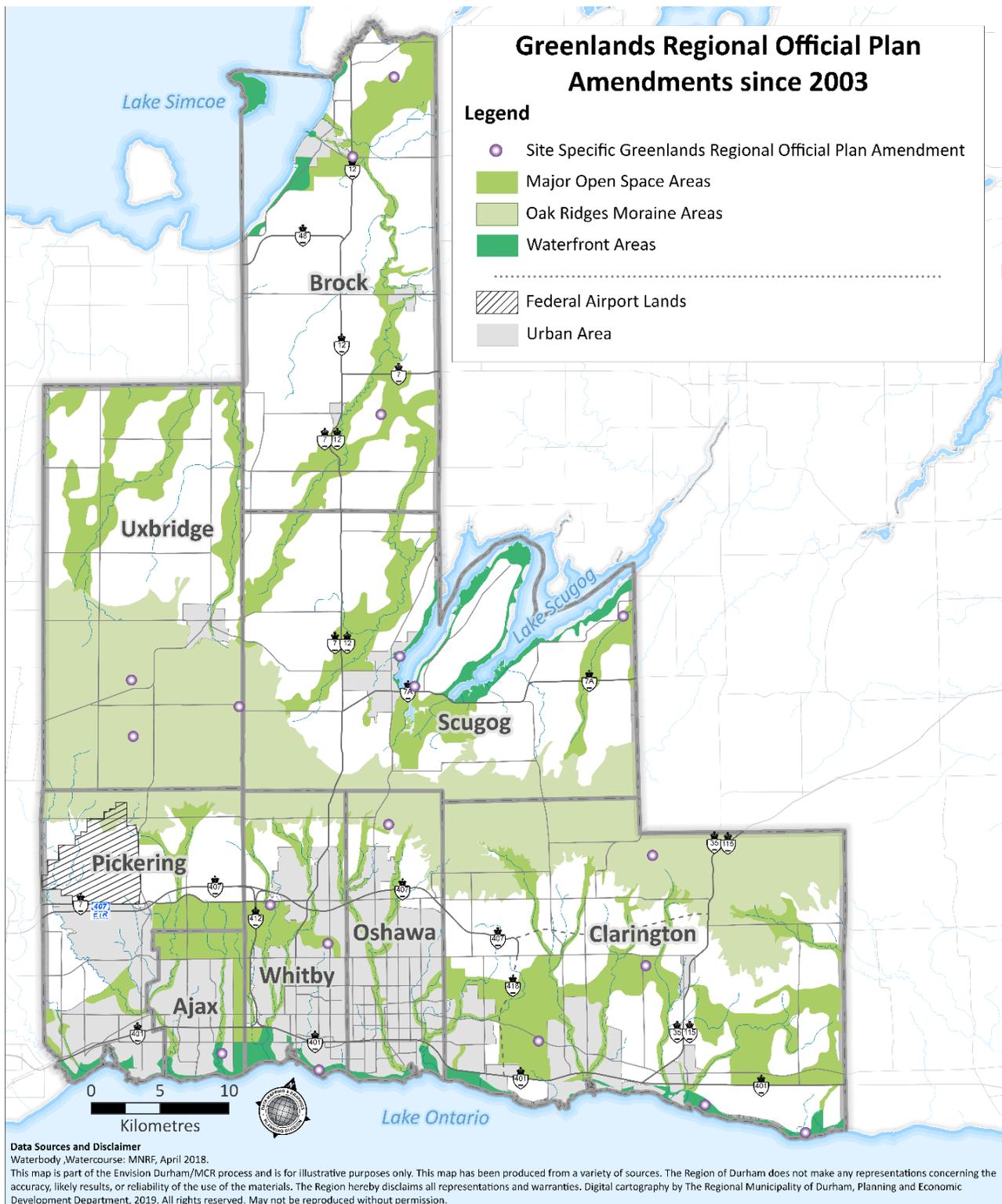


Figure 6: Regional Official Plan Amendments within the Greenlands System since 2003.

3.0 Durham’s environmental approach

Durham Region has an array of natural features and areas that support ecological functions and contribute to the quality of life in the region. These features not only provide opportunities for recreation and nature appreciation, they also serve to retain rainwater, manage erosion, filter pollutants and provide a diversity of habitats for fish and wildlife.

Therefore, an effective policy regime that not only serves to protect and enhance environmental features and functions, but also provides for healthy and sustainable communities is essential.

Approximately 94 per cent of survey respondents think that minimizing pollution of air, water and land resources is “very” to “extremely important”.

(Based on the Envision Durham Public Opinion Survey results, 391 respondents).

A key goal of the environmental policies of the ROP is to “ensure the preservation, conservation and enhancement of the region’s natural environment for its valuable ecological functions and for the enjoyment of the region’s residents.” This goal provides the basis for policies that ensure that natural heritage features and areas (such as valley systems, water resources and plant and animal habitats) are given “paramount consideration” in the planning and development of the region.

When considering development applications, the ROP requires that the “cumulative impact” on the environment be considered.

The Region works in partnership with five conservation authorities (refer to Figures 7 and 8), area municipalities, and other stakeholders in the community with a view to protecting and enhancing the natural environment, educating the public, and supporting approaches which improve sustainable planning and development practices. Additionally, since the Region is the primary funder of conservation authorities within its jurisdiction, it also enables the implementation of projects and initiatives that support environmental improvement.



Figure 7: Logos of the Five Conservation Authorities in the Region of Durham.

From an infrastructure perspective, the ROP currently requires that impacts of municipal services on the environment be minimized by:

- Requiring potentially polluting industries to pre-treat sewage to reduce impacts on sanitary sewerage facilities or, as the case may be, prohibiting these industries in locations which could potentially discharge sanitary sewerage into fragile environments.
- Requiring industries that consume large quantities of water to recycle water to

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reduce consumption of the Region's water resources.

- Continuing to monitor the implementation of the pollution control by-law, as amended from time to time, to ensure compliance.
- Encouraging industries that require water and sanitary sewerage facilities, in excess of domestic needs, to locate their plants in areas where adequate water and sewer services are available.
- Encouraging the conservation of water.

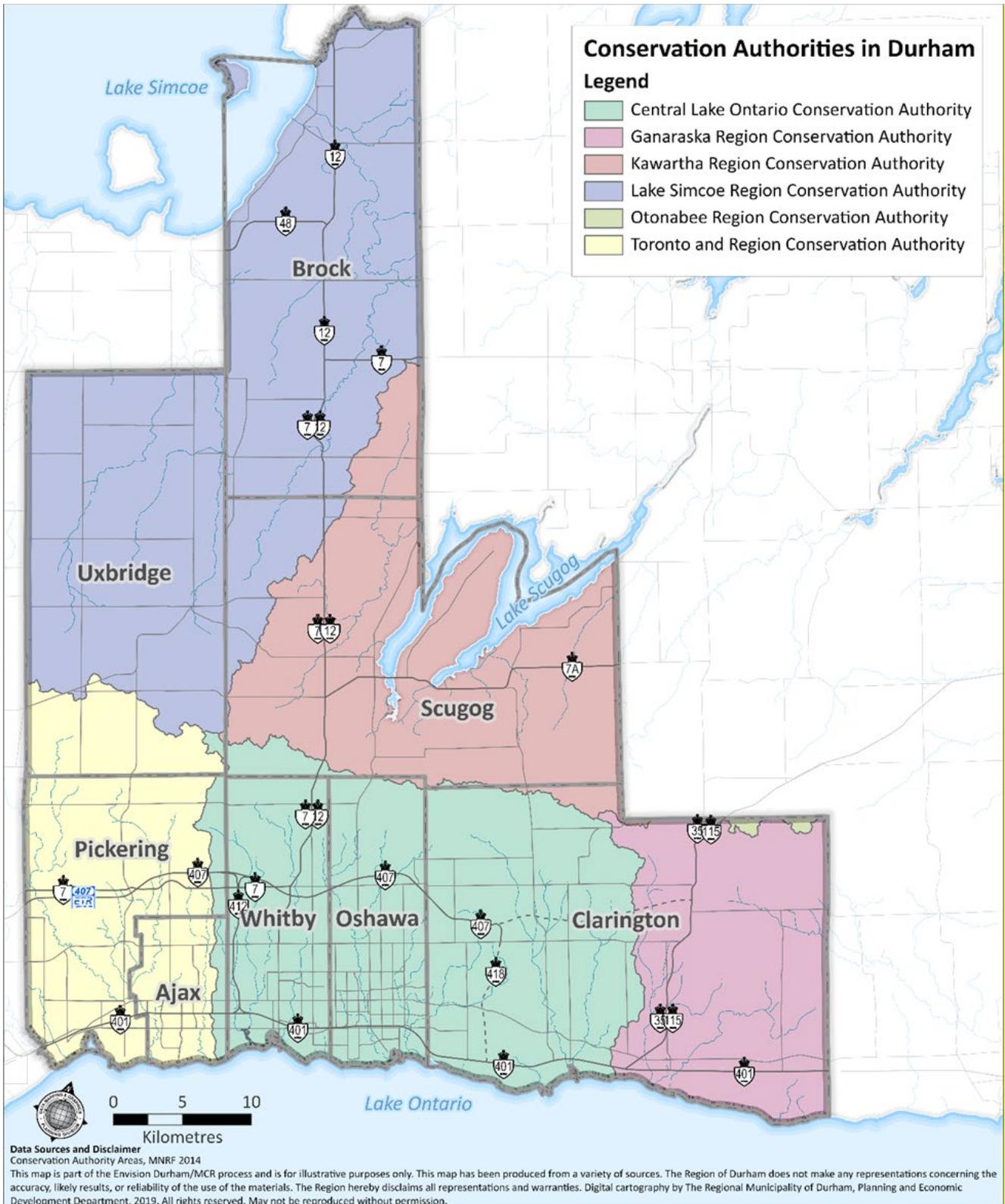


Figure 8: Conservation Authorities with jurisdiction in the Region of Durham.

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In addition to the ROP, which provides the land-use planning policy framework for the Environment and Greenlands System, since 2003, several plans and strategies have been implemented by the Region, and others, to support the advancement of environmental initiatives.

Relevant plans, strategies, and programs include:

3.1 Durham Region Strategic Plan

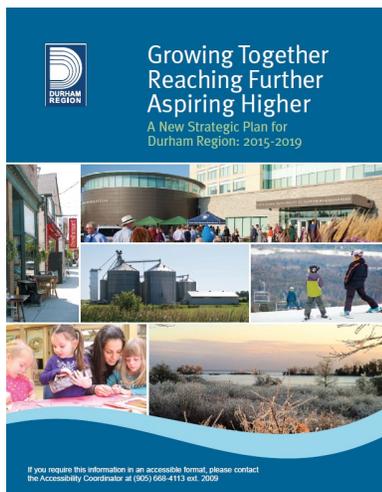


Figure 9: Durham Region Strategic Plan cover.

Healthy environment and sustainable communities is one of the pillars of the 2015-2019 Durham Region Strategic Plan, with a goal of protecting, enhancing and restoring the natural environment and building resilient, safe communities that are supported by reliable, affordable transportation systems and services.

Priorities related to healthy environment and sustainable communities include:

- Protecting, enhancing and where appropriate restoring significant

water resources, agricultural land, natural heritage and environmentally sensitive areas.

- Demonstrating leadership in sustainable asset management and environmentally friendly municipal practices.
- Investing in efforts to mitigate and adapt to climate change to build resiliency across the region.

Development of a new strategic plan is currently underway. The Strategic Plan is fundamental for guiding the overall vision and strategic directions of the ROP.

Directions arising out of the new strategic plan will be considered and incorporated into the ROP as appropriate through Envision Durham.

3.2 The climate change connection

As noted in Envision Durham’s Climate Change & Sustainability Discussion Paper released in May 2019, “climate change” is defined as a significant change in long-term weather patterns — including a rise in temperature, wind patterns, and precipitation that occurs over time. These changes can result in impacts such as floods, droughts, and severe weather events that impact our region.

The natural environment plays a critical role in climate change adaptation and mitigation. Since the last ROP review, the Region has assumed a leadership role in this area — through the development of climate change mitigation and adaptation plans with the help of area municipalities, conservation

authorities, utilities and other local stakeholders.

Some municipalities and conservation authorities have also adopted their own policies and strategies, which address the impacts of climate change on the natural environment. These plans and strategies will also be considered through Envision Durham.

3.2.1 Durham Community Climate Change Local Action Plan

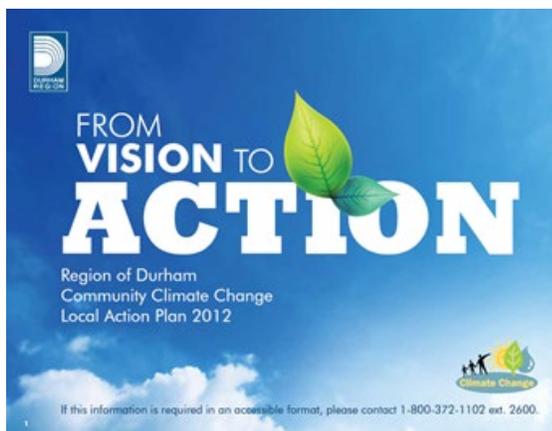


Figure 10: Durham Community Climate Change Local Action Plan cover.

Led by the Durham Region Roundtable on Climate Change (and adopted “in principle” by Regional Council in 2012), From Vision to Action: Region of Durham Community Climate Change Local Action Plan (LAP) identifies programs that could help to achieve the Region’s greenhouse gas (GHG) emission reduction targets.

The LAP identifies “Natural systems and resources” as a key theme with a view to protecting, enhancing, conserving, and/or managing natural resources in ways that reduce GHG emissions and promote wise use of resources. This includes:

- Increasing local net carbon sequestration capacity.
- Promoting local and sustainable use and reuse of indigenous natural resources.
- Promoting source protection, conservation, and reuse.

For example, the LAP identifies Durham’s “Five Million Trees” program, which seeks to plant five million trees throughout Durham over a 10-year period — from 2013 to 2022 — to increase forest cover by approximately 2,800 hectares. This program has been undertaken in partnership with Forest Ontario and with support from the Government of Canada.

While the ROP contains key policies that relate to the six themes of the LAP and contribute to GHG emissions reductions, through Envision Durham, the Region will consider how climate change adaptation, feature protection, mitigation, and resiliency can be further supported through policies pertaining to the natural environment and the Greenlands System.

3.2.2 Durham Community Energy Plan



Figure 11: Durham Community Energy Plan logo.

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Building on the LAP, the Durham Community Energy Plan (DCEP) was approved “in principle” by Regional Council in April 2019. Adopting a “low-carbon pathway”, the DCEP consists of six implementation programs to achieve the Region’s GHG emission reduction targets.

The projected outcomes of the low-carbon pathway highlighted in this plan could contribute to the long-term preservation of the natural environment.

Lowered energy use; switching to efficient or renewable energy models and green building standards (including incorporation of green infrastructure); and electrification of the transportation system are some of the measures highlighted in this plan that would improve air quality and have positive impacts on the natural environment.

3.2.3 Durham Community Climate Adaptation Plan

The Durham Community Climate Adaptation Plan (DCCAP) was endorsed “in principle” by Regional Council in 2016. It contains 18 programs, across seven sectoral areas, including the natural environment. These programs are intended to help the region adapt to future climate conditions.

The Natural Environment Climate Change Collaborative (NECCC) is a multi-stakeholder working group tasked with implementation of adaptation programs set out in the DCCAP for the natural environment sector.

The NECCC commissioned the development of a guidance document on incorporating climate change into plans and documents,

including natural heritage focused plans. Additionally, the NECCC is leading the update of the Region’s climate change projections. This will inform environmental planning efforts including incorporating climate change considerations into watershed planning and the development of natural heritage systems.



Figure 12: Durham Community Climate Adaptation Plan cover.

3.2.3.1 Keeping Our Cool: Managing Urban Heat Islands in Durham Region

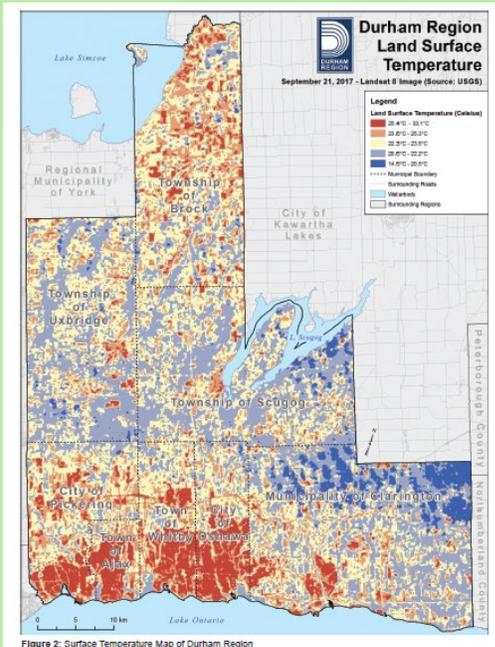


Figure 13: Map of Land Surface Temperature in Durham. Hotter areas, shown in red, are generally areas with less forest cover and vegetation.

A key consequence of climate change is the development of “urban heat islands.” This term refers to urban areas with higher temperatures — typically caused by heat absorbing buildings, roads, and other “hard” surfaces — resulting in social, economic, health, and environmental impacts.

Many of Durham Region’s urban areas are experiencing some of these impacts. Keeping Our Cool: Managing Urban Heat Islands in Durham Region identifies the causes, impacts, and measures that can lessen their effects.

One of the key contributors to urban heat islands is the removal of vegetation. Bare soil absorbs and holds onto more of the sun’s heat than vegetated landscapes. Trees provide shade and stop the absorption of solar energy below the canopy, resulting in cooler surface and air temperatures. Cooler air temperatures also occur when heat is absorbed as plants transpire water, and as water evaporates from permeable ground surfaces such as soil and grass.

Mitigation measures, to reduce the urban heat island effect, include tree planting and incorporating low-impact development in urban areas to increase the tree canopy and promote shading, as well as increasing permeable surface areas.

This work should be considered in natural environment stewardship and enhancement initiatives.

3.3 Water conservation and drinking water protection



Figure 14: Duffins Creek Water Pollution Control Plant, City of Pickering.

The Region provides municipal water supply to its urban areas, as well as a number of

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rural settlement areas. For Durham's southern urban areas, the water supply comes from Lake Ontario.

In north Durham, water supply is provided by a series of municipal wells that access groundwater, except for the Beaverton urban area, which uses a system that accesses Lake Simcoe water.

As part of its responsibilities under the Clean Water Act, Regional Council has appointed a Risk Management Official (RMO). The duties of the RMO are to administer and enforce certain Source Protection Plan policies; review building permit and Planning Act applications in vulnerable areas; negotiate and enforce risk management plans to manage significant drinking water threats; and verify significant drinking water threats, among other tasks.

The Region delivers water conservation and drinking water protection initiatives. Through these, the Region has supported demonstration projects, including Priority Green Clarington; working with new home builders in Bowmanville and Courtice to use beyond-code water and energy conservation technologies; as well as a Water and Energy Efficient Demonstration Community in the Town of Ajax.

Additionally, Durham Region is a participating stakeholder on the Lake Ontario Collaborative Group, which is currently working on Lake Ontario water quality monitoring/modelling, data handling and storage, and improving communications between the Province of Ontario and partner municipalities. This group consists of

municipalities, conservation authorities, and provincial ministries and agencies, with the goal of assessing the location and nature of risks to drinking water intakes in Lake Ontario.

Lake health has been identified as a particular concern for certain communities on Lake Ontario, Lake Scugog, and Lake Simcoe. This includes increased algae blooms, aquatic invasive species, and water quality concerns. Several initiatives are underway, through the LSPP and by conservation authorities and other stakeholders, to address lake health. One example is the Scugog Water Fund.

Through Envision Durham, the Region will be exploring how the ROP can further support these initiatives and programs.

Scugog Water Fund

The Scugog WATER Fund, funded by the Region of Durham and administered by KRCA, provides financial assistance to property owners who undertake projects that contribute to the health of Lake Scugog and its watershed. WATER stands for Water And Terrain Environmental Restoration.

The goal of the Scugog WATER Fund is to address issues affecting Lake Scugog, including: contaminated urban and agricultural runoff, extensive erosion on lakeshores and stream banks, poorly functioning septic systems around the lake, and loss of natural cover along shorelines and stream banks.

3.4 Waste management

Waste has an impact on the environment. Recycling, composting and re-use programs reduce dependence on landfills and other methods of waste disposal as well as conserve valuable resources. About 225,000 tonnes of waste are generated by the Region's residents annually.

Along with other duties, the Region is responsible for the collection of blue box recyclables, source separated organics, leaf and yard waste and residential garbage in all local municipalities, with the exception of the City of Oshawa and Town of Whitby. Oshawa and Whitby collect all residential waste, except for blue box recyclables. The Region operates three waste management facilities.



Figure 15: Curbside Waste in Durham.

The Durham York Energy Centre (DYEC), located in Clarington, is the Region's primary long-term disposal option for waste. This state-of-the-art facility, owned by the Regional Municipalities of Durham and York, produces energy from the combustion of garbage, and began operations in 2016. The DYEC processes the household waste remaining after Durham and York Regions' aggressive composting, recycling and reuse programs. Both regions are leaders in waste diversion with diversion rates consistently

above 60 per cent. The facility currently has a processing capacity of 140,000 tonnes of residential garbage per year. Of that capacity, 110,000 tonnes are allocated to Durham Region. In 2019, a process was initiated to increase this capacity by 20,000 tonnes to 160,000 tonnes.



Figure 16: Durham York Energy Centre, Clarington

The Region recently launched the development of a new Long-Term Waste Management Strategy with the Council endorsed vision:

“The Region of Durham will manage solid waste as a resource through innovation and adaptability to enhance environmental sustainability.”

The new strategy is intended to guide the Region's waste management actions for the next 20 years through 2040. This strategy will be consistent with the intent of the ROP, which states that Regional Council will pursue measures related to the reduction, reuse and recycling of waste.

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3.5 Local initiatives

In addition to the Region’s environmental efforts, environmental initiatives, policies, and stewardship are largely undertaken at the local level by Durham’s area municipalities, conservation authorities and other stakeholders.

Additionally, many of the Region’s area municipalities have also recently updated their local official plans. Significant efforts, including preparation of studies and extensive public consultation went into these processes. Adopted local approaches — related to the Environment and Greenlands System policies and mapping — will be considered through Envision Durham. For reference purposes, Official Plans can be found on the websites of each of the area municipalities.

Results of these initiatives will be considered through Envision Durham and relevant and supporting policies will be recommended as appropriate.

Some area municipalities have established Environmental Advisory Committees to advise their Council on environmental matters. These committees also promote

environmental awareness and stewardship in their communities.

Durham Environmental Advisory Committee

The Durham Environmental Advisory Committee (DEAC) was established in 2001 by Regional Council to provide advice to the Region on environmental planning matters. This volunteer Citizen Advisory Committee is comprised of members appointed by Regional Council representing all eight of Durham’s local area municipalities, post-secondary students, youth, the Planning & Economic Development Committee, and citizens at-large.

DEAC has been participating in Envision Durham by reviewing and providing input on proposed changes to the Region’s environmental policies, mapping and by providing input more broadly on other topics.



4.0 Observations on environment and Greenlands areas in Durham

The following are recent trends and observations affecting the Region's environment and Greenlands System areas.

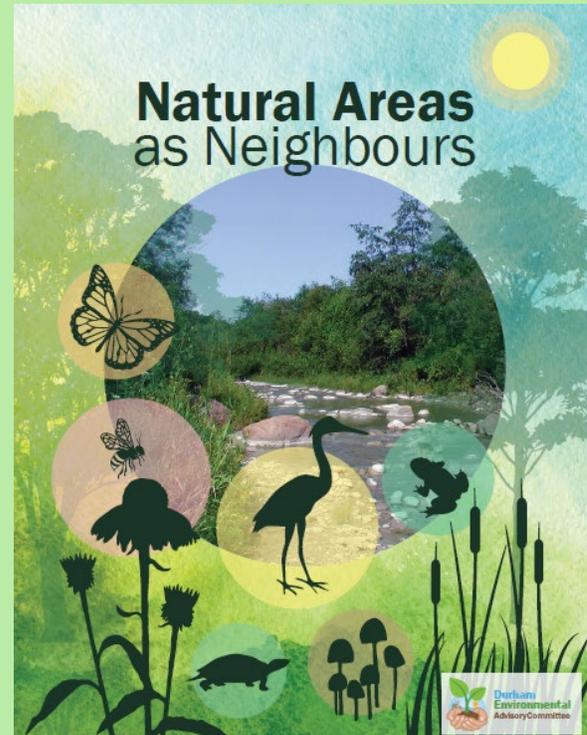
4.1 Impacts to the natural environment

With an increasing population and development pressure in the Region, there is the potential for impacts to the natural environment. Examples of impacts can include removal of trees and vegetation to make way for new development; impacts to the natural environment as a result of nearby development or increased access by humans to natural areas; spread of invasive species; as well as impacts, such as noise and light pollution that affect natural areas and wildlife.

Approximately 92 per cent of survey respondents think that protecting key environmental features (such as woodlands, wetlands, creeks, etc.) from the effects of development is “very” to “extremely important”.

(Based on the Envision Durham Public Opinion Survey results, 391 respondents).

Natural Areas as Neighbours Guide



In 2018, DEAC produced an updated Natural Areas as Neighbours Guide that is designed to help residents and visitors understand, appreciate, and care for the natural heritage areas in Durham Region

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4.1.1 Climate change

Climate change will have impacts on the region's natural environment, including more frequent extreme weather events, flooding, heavy precipitation, hydrological changes (such as temperature in watercourses and lakes), heat stress, shifting climate zones, and an increase in invasive species and pests.

The impacts of these climate shifts are being felt in various sectors related to the natural environment, such as, agriculture (crop productivity), forestry (such as regional changes in timber supply and the increased frequency and extent of forest fires); and ecological integrity (at-risk species).²

Natural areas assist with mitigating the impacts of climate change in the following ways:

- Forests and agricultural soils remove carbon dioxide from the atmosphere.
- Green spaces can provide protection from storms, flooding, and erosion.
- Wetlands filter and regulate water supplies.
- Trees produce oxygen and improve urban air quality by absorbing pollution and carbon sequestration.

Through Envision Durham, the Region will incorporate policies to address climate change in the ROP for conformity with provincial plans and in support of the various regional and local climate-related plans and

strategies. More detail on this topic has been provided in the Climate Change and Sustainability Discussion Paper.

4.1.2 Invasive Species

Invasive species have become a significant local concern. They pose a growing threat to Ontario's economy and native biodiversity. Purple loosestrife, garlic mustard, buckthorns, emerald ash borer, zebra mussels, dog strangling vine, reed canary grass (phragmites), and round goby are a few of the invasive species that are being addressed with various local programs and initiatives across Ontario. The Province of Ontario has a variety of programs in place to address invasive species.

At the local level, conservation authorities are addressing invasive species through watershed plans, habitat restoration and rehabilitation, water quality and quantity programs, and natural lands management among other initiatives.

Through Envision Durham, the Region will continue to monitor any changes to legislation or regulation regarding invasive species and add policies to the ROP, as appropriate, to address invasive species.

Discussion Question:

How can the ROP be revised to further help address the issue of invasive species?

² Colombo, S.J, McKenney, D.W., Lawrence, K.M., & Gray, P.A. (2007). Climate Change Projections for Ontario: Practical

Information for Policymakers and Planners. *Climate Change Research Report CCRR-05*. Ontario Ministry of Resources.

Emerald Ash Borer



Figure 17: Effects of emerald ash borer. (Source, CBC, Invasive Species Centre).

The emerald ash borer (EAB) is an example of an invasive species that further proliferates with climate change. It is a species of metallic wood-boring Asian beetle, first detected in the Greater Toronto and Hamilton Area in 2007; and within a 10-year period, wiped out nearly 860,000 ash trees in Toronto.³ The Climate Atlas of Canada suggests, “warmer summers allow the ash borer to undergo two reproductive cycles rather than just one, doubling their normal rate of infestation.”⁴ Warmer winters also limit natural capacities to control pests, thus allowing them to spread farther and faster. Changes in climate that promote the spread of pests and insects also impact trees’ natural capacities to defend against them. Trees become less resilient in warmer conditions, and more susceptible to the impact of insects and diseases. EAB is an issue for municipalities in Durham as well. Some municipalities have developed strategies and plans to address the issue.

4.1.3 Excess soil and soil conservation

The protection of soil as a natural resource is particularly important to the region’s agricultural industry, and plays a key role in the health of our natural heritage system and its ecological function. Topsoil serves as a nutrient and moisture source for plant growth. It can take thousands of years for agriculturally productive soil to form. Soil erosion and degradation reduces agricultural productivity and impairs the soils ecological function. Good soil health is important for flood mitigation, carbon sequestration, and the health of natural heritage features and areas. Additionally, natural cover can reduce soil erosion.

Excess soil is soil that has been excavated, typically during construction activities, and moved to another site because it cannot be reused on site. The Municipal Act allows area municipalities to regulate excess soil through the development of “fill by-laws” to mitigate potential negative environmental and community impacts. All municipalities in Durham have adopted fill by-laws which address excess soil.

³ <https://www.cbc.ca/news/canada/toronto/toronto-s-ash-trees-face-extinction-1.1001010>

⁴ <https://climateatlas.ca/forest-pests-and-climate-change>

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Figure 18: A commercial fill operation in the City of Pickering. Source: TRCA.

The Province of Ontario has provided policy direction related to excess soil management through the updated provincial plans. The intent of these policies is to encourage municipalities to develop soil reuse strategies as part of long term planning for growth and development. Accordingly, municipal planning policies and relevant development proposals are now required to incorporate best practices for the management of excess soil generated and fill received during development or site alteration (including infrastructure development). This helps to ensure that:

- Any excess soil is reused on-site or locally to the maximum extent possible and, where feasible, excess soil reuse planning is undertaken concurrently with development planning and design.
- Appropriate sites for excess soil storage and processing are permitted close to areas where proposed development is concentrated or areas of potential soil reuse.
- Fill quality received and fill placement at a site will not cause an adverse effect with regard to the current or proposed use of the property or the natural

environment and is compatible with adjacent land uses.

To support the implementation of these policies, the Province released an Excess Soil Management Policy Framework and Regulatory Proposal and a document entitled Management of Excess Soil: A Guide for Best Management Practices. In addition, as part of the Made in Ontario Environment Plan, in May 2019, the province released draft regulations regarding the rules for managing and transporting excess soil.

The current ROP does not contain policies related to excess soil or soil conservation. However, many of the local area municipalities do have policies and/or by-laws in place to manage excess soil. Through Envision Durham, the Region will investigate incorporating policies related to excess soil and soil conservation, as appropriate.

Discussion Question:

How can the Region best effectively support local implementation of excess soil policies?

4.1.4 Septage

Septage is waste material removed from portable toilets, sewage holding tanks and septic systems. Since the time of the last review, there has been a growing concern about the potential impact of spreading hauled sewage, commonly known as septage, on the land, and its potential for impact on the quality of groundwater and surface waters.

The Ministry of Environment, Conservation and Parks (MECP) currently regulates the transportation and land application/disposal of untreated septage through Environmental Compliance Approvals issued under the Environmental Protection Act (EPA), and through Ontario's General Waste Management Regulation under the EPA.

Currently, if septage is treated to an appropriate level, its application to agricultural land for crop benefit may fall under the Nutrient Management Act and would be exempt from the approval requirements for land application/disposal under the EPA.

As part of a septage policy and program review, initiated in early 2016, MECP was examining options for addressing environmental impacts and human health concerns associated with hauled sewage management, including its treatment, disposal and beneficial use.

The ROP is currently silent on this issue. Through Envision Durham, the Region will be reviewing whether there is a need to restrict or regulate this practice further in the region.

Discussion Question:

Should the Region include policies in the ROP restricting or limiting the land application of septage?

4.2 Ecosystem goods and services, and green infrastructure

There has been a shift toward an “ecosystem services” approach to environmental planning; recognizing the socio-economic benefits associated with natural heritage and hydrologic features and their functions. In particular, these benefits address flood protection and clean water. By increasing resiliency of infrastructure and encouraging the use of green infrastructure, municipalities can reduce the risk of harm to life and property and decrease the need for costly repairs or replacement resulting from extreme weather events.

Green infrastructure is defined as natural and human-made elements that provide ecological and hydrological functions and processes and can include components such as natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs.

Provincial plans support the incorporation of green infrastructure and low impact development in stormwater management planning to reduce greenhouse gas emissions and address climate adaptation goals. The Natural Heritage System is also recognized as a component of green infrastructure.

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Figures 19 & 20: Low impact development project at the Uxbridge Arena. **Source:** LSRCA.

Through Envision Durham, the Region will be including policy support in the ROP to encourage and promote green infrastructure.

Oshawa's Natural Assets Pilot Project



Figure 21: Oshawa Creek. **Source:** CLOCA, photo by Keith Isnor.

Recognizing the ecosystem services values of natural areas, the City of Oshawa is working with the Municipal Natural Assets Initiative (MNAI) in partnership with the University of Toronto (UofT), CLOCA, and Oshawa's Teaching City, to explore methodologies for valuing and accounting for natural assets in Oshawa's financial planning and asset management programs.

As part of this pilot project the City will be applying natural asset principals on a portion of the highly urbanized Oshawa Creek. By working with MNAI and partners, the City hopes to apply practical strategies to value the services of the creek corridor and to further recognize the important services that our creek corridors play as part of our municipal infrastructure while also identifying gaps in knowledge and processes for implementation.

4.3 Ecosystem compensation

Over time, provincial land-use planning policy has placed a stronger focus on the protection and enhancement of natural features and natural heritage systems. Municipalities and conservation authorities protect these features and areas through the strengthening of environmental policies in official plans and watershed planning documents, by-laws to restrict/regulate tree removal, and stewardship initiatives. Some municipalities have developed compensation approaches, where funds are secured from those whose propose to remove vegetation. Funds are secured for the value of trees lost or removed through development, which are then used to plant trees and/or restore ecosystem functions (such as woodland, wetland or meadows). Compensation is viewed as a last resort, only after all other options for protection, minimization, and mitigation have been exhausted.

In many cases, loss of natural features and areas has occurred through urbanization and infrastructure expansion, but climate change also poses an increased risk due to invasive species/pests, diseases and severe weather events which affect natural features and systems.

More recently, some conservation authorities and municipalities have established ecosystem compensation policies, guidance documents and protocols. Within Durham, the Toronto Region Conservation Authority (TRCA) and Lake Simcoe Region Conservation Authority (LSRCA) have established protocols and formulae for calculating the financial value of features, functions, or areas; and requiring such financial value to be secured

and applied toward enhancing natural heritage systems elsewhere. There is not widespread agreement on an accepted methodology for the valuation of ecosystem goods and services. For example, although new trees may be planted, it will take many years to provide the same benefit as a mature forest.

Through Envision Durham, the Region, in consultation with the conservation authorities and area municipalities, will consider whether a policy approach on ecosystem compensation should be included in the ROP.

Discussion Question:

Should policies regarding ecosystem compensation and valuation be included in the ROP through Envision Durham? If so, are there examples of best practices?

4.4 Traditional ecological knowledge

The importance of engagement with Indigenous Peoples in land use planning has been recognized through recent updates to the PPS and Provincial Plans.

Traditional ecological knowledge (TEK) is knowledge unique to Indigenous Peoples about the natural environment and processes, built up through generations of living in close contact with nature and the land.

The value of TEK is increasingly being recognized as an important part of natural resource management and is already

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practiced through Environmental Assessments (EAs) under the Environmental Assessment Act. Further consideration of traditional knowledge was also proposed to be included in the 2019 update of the PPS.

Through Envision Durham, the Region will work closely with Indigenous communities and organizations to consider how we can support consideration of TEK more broadly through the ROP.

Discussion Question:

How can the ROP support the consideration of TEK in land use decisions?

4.5 Environmental stewardship

Environmental stewardship of both urban and rural properties is crucial for protecting natural heritage and hydrologic features and their functions.

In recognition of the special natural and scenic features, the ROP currently directs that Regional Council shall develop programs, in cooperation with the Provincial Government, area municipalities and the conservation authorities, to maintain or enhance the features of the Greenlands System, such as streams and valleylands, wetlands, wooded areas, wildlife habitats, urban separators and other natural attributes of the environment.

The conservation authorities and area municipalities are often the first point of contact for private landowners. Environmental stewardship activities are happening throughout Durham, co-ordinated

by area municipalities, conservation authorities, advisory committees, and other organizations on both public and private lands.

Specific programs that are implemented in partnership with the Region include, the Durham Region Five Million Trees Program and the Scugog Water Fund (as mentioned in Sections 3.2.1 and 3.3 of this discussion paper). These initiatives help to meet the environmental goals of the ROP.

Some additional examples of stewardship activities that have occurred in Durham include:

- Tree planting programs in urban and rural areas.
- Community clean up events or initiatives such as adopt a park or road.
- Habitat restoration initiatives.
- Installation of low-impact design in waterfront areas to improve stormwater management and aid in phosphorus reduction.
- Development and implementation of green/sustainable development standards.
- Creation of pollinator habitat.
- Completion of Environmental Farm Plans by farmers.

Public education programs also help to inform people of management techniques and practices to protect natural areas.

Clarington's Trees for Rural Roads Program

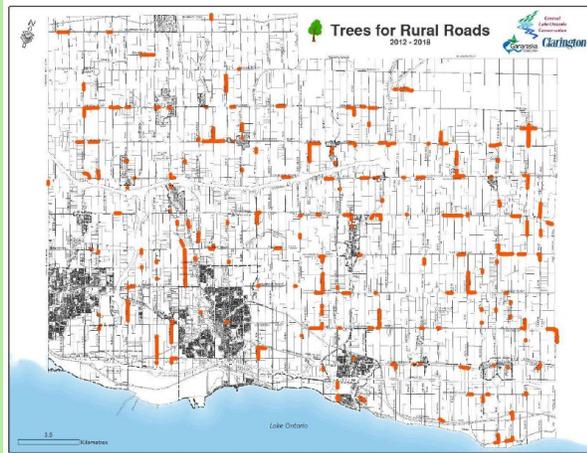


Figure 22: Map showing trees planted along rural roads in Clarington between 2012 and 2018. (Source, Municipality of Clarington).

To restore trees along rural roads, the Municipality of Clarington, in partnership with CLOCA and GRCA, offers the Trees for Rural Roads program to all municipal rural residents/property owners.

In the middle and late 19th century, farmers planted native maples, taken from their woodlots, along their property edges and on their lane ways. This gave rise to an important element in the rural landscape – lines of stately maples alongside roads and separating farmer's fields. The legacy of maple trees is embedded in many people's memories and part of the rural aesthetic. These century (and older) trees are now succumbing to old age, and are being exposed to wind, insects and disease.

Since 2012, more than 5,500 trees have been distributed and planted along municipal roads on private land in Clarington.

Ajax's backyard tree planting program



The Town of Ajax has partnered with Ontario Power Generation (OPG) and Local Enhancement and Appreciation of Forests (LEAF), a not-for-profit organization, to offer residents and businesses in Ajax a subsidized tree planting program.

Discussion Question:

How can the ROP better support environmental stewardship efforts in Durham? What are other examples of best practices?

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5.0 Land use designation policy considerations

The following are planning considerations associated with the Greenlands System which will be considered through the Envision Durham exercise.

5.1 Major Open Space Areas

The current ROP includes a Major Open Space (MOS) System as a continuous system of open space lands woven throughout the region. It serves to define the boundaries of distinct urban areas, supports the ecological health of the region, and protects environmental areas and their functions.

Schedule “A” Regional Structure in the current ROP designates ‘Major Open Space Areas’ within the Greenlands System, which is shown in Figure 5, on page 17. Area municipalities also designate environmental lands at a finer level of detail than the ROP. Approximately 19 per cent of the total land base of the Region is designated Major Open Space Areas.

The Major Open Space Areas designation in the ROP permits agricultural, agriculture-related, and on-farm diversified uses and reflects both lands containing natural heritage and hydrologic features and “rural lands” as defined by the province. Rural lands in the Major Open Space areas outside of the urban area boundary include non-agricultural uses such as cemeteries, fairgrounds, campgrounds, and recreation sites.

Additionally, these areas function as urban separators. In contrast, designated Major Open Space areas in urban areas are

intended to focus on both active and passive recreational uses and environmental protection, and do not function as urban separators or allow for uses permitted on Rural Lands. Through recent updates, the provincial plans added further direction on planning for parkland and trails. This is largely done at the area municipal level. The ROP will incorporate high level direction as appropriate.

As discussed in the Agriculture & Rural Discussion Paper, much of the Region’s Major Open Space designation has been identified as Prime or Candidate Agricultural Land in the Province of Ontario’s recently released Agricultural System mapping. Consequently, it is anticipated that the Region’s Major Open Space designation could be significantly reduced.

The province has also indicated a preference in the Implementation Procedures for the Agricultural System in Ontario’s Greater Golden Horseshoe (2018) that Major Open Space Areas be referred to as Rural Lands. There is significant overlap between areas where Major Open Space predominates and the Agriculture & Rural System.

Envision Durham will include a review of the need to adjust designations including Major Open Space Areas and Prime Agricultural Areas following the final establishment of the Region’s Natural Heritage System and Features Mapping and the delineation of the Agricultural System.

This review will include considering whether to keep the Major Open Space Areas designation, change the terminology (such as rural lands or environmental lands), and

whether the Region chooses to designate lands comprised of the natural heritage system/environmental features or adopt an overlay approach.

Discussion Question:

Are there additional factors the Region should take into account when re-considering the Major Open Space Areas designation?

5.2 Oak Ridges Moraine

The Oak Ridges Moraine is an irregular ridge that stretches 160 kilometres from the Trent River in the east to the Niagara Escarpment in the west. It divides the watersheds draining south into western Lake Ontario from those draining north into Georgian Bay, Lake Simcoe, and the Trent River system.

The Moraine provides for clean and abundant water resources, diverse plant and animal habitat, an attractive landscape, prime agricultural areas, and sand and gravel resources. This combination of environmental, geological and hydrological features makes the Moraine an important ecosystem that should be protected. Approximately 20 per cent of the Region's total land area is designated Oak Ridges Moraine Areas (shown in Figure 5, on page 17).

The broad objectives of the policies within the ORMCP are to protect the ecological and hydrological integrity of the Moraine and to provide for land and resource uses and development that are compatible with the other objectives of the plan. In Durham

Region, portions of Scugog, Uxbridge, Pickering, Whitby, Oshawa, and Clarington are within the ORMCP Area as shown in Figure 3, on page 10). In 2003, Regional Council adopted Amendment No. 89 to the ROP to implement the ORMCP.

There were very few policy changes to the ORMCP in 2017, the majority were minor edits and definition changes to better align the ORMCP with other the provincial plans and PPS. Envision Durham will implement these changes.

5.3 Waterfront Areas



Figure 23: Children fishing by a marina.

Waterfront Areas are a component of the Region's Greenlands System which includes the waterfronts of Lake Ontario, Lake Scugog, and Lake Simcoe. Waterfront Areas include tourist/activity nodes (that may be permitted to develop) along those waterfronts. They do not include identified Waterfront Places, which are key areas for mixed use development and part of the Region's Urban System.

The existing ROP identifies waterfront areas as "people places" (except for significant natural areas, which are to be protected). Development in these areas should make provision for public access to the waterfront. In this regard, the ROP supports the

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development of a continuous Lake Ontario waterfront trail and support for area municipalities, conservation authorities, provincial agencies, community groups and the private sector, in the development of this trail. Connection of the waterfront trail with other trails is encouraged for the purpose of forming a region-wide trail network.

In accordance with the ROP, waterfront development is not to negatively impact key natural heritage or hydrologic features. These areas may be used for observation and education purposes. As part of any development or redevelopment plan along the waterfronts, the need to protect wildlife habitat, including connections between significant natural areas, as well as aquatic resources, is required to be addressed.

Additionally, where an Environmental Impact Study (EIS) is required in support of development along the Lake Ontario waterfront, supporting studies are required to address:

- Impacts on the shoreline, creeks, wetlands and nearshore wildlife habitat and aquatic characteristics.
- Opportunities for portions of the site to be included in a natural corridor system along the waterfront and creek valleys.
- Impacts on lake water quality.
- Acceptability of soil quality (as determined by the provincial or federal authority having jurisdiction), if the development proposal involves lakefilling.

The PPS generally requires planning authorities to identify shoreline areas that

are necessary for the ecological and hydrological health of the watershed, maintain linkages between these areas, and consider environmental lake capacity.

The Growth Plan directs municipalities to consider the Great Lakes Strategy and targets and goals of the Great Lakes Protection Act and any Great Lakes agreements as part of watershed planning and coastal or waterfront planning initiatives. The Growth Plan and Greenbelt Plan contain policies that apply to developed shorelines. These areas are particularly important and sensitive because they include key natural heritage and hydrologic features and functions; benefits to water quality and quantity; cultural heritage resources; vital human services; and recreational opportunities, including trail systems.

Climate change is expected to be an important consideration in shoreline management given projected declines in Great Lakes water levels.

Through Envision Durham, the Region will review existing policies to determine their relevance, as well as ensure that the policies are updated to reflect provincial plan requirements.

Approximately 90 per cent of survey respondents think that protecting and enhancing waterfronts as major components of the region is “very” to “extremely important”.

(Based on the Envision Durham Public Opinion Survey results, 391 respondents).

The Waterfront Trail



Figure 24: Portion of the Waterfront Trail in Whitby.

Within Durham, the Waterfront Trail follows the shore of Lake Ontario — from Pickering to the boundary of Durham with Northumberland in the east — offering visitors a virtually uninterrupted view of the beautiful vistas of the lake to the south.

The Waterfront Trail also crosses many natural areas including Second Marsh in Oshawa, as well as connecting Durham to the Rouge National Urban Park as an eastern gateway to Scarborough’s Waterfront Trail.

Durham Region’s five lakeshore municipalities have contributed to this important trail through investments in amenities: recreational features and parking that allows direct access to the trail.

The Waterfront Trail is also well connected to these municipalities’ urban areas via a series of north-south creek trails, which make access to the Waterfront Trail easy for residents and visitors.

5.4 Tourist Activity/Recreational Nodes



Figure 25: Ice fishing huts on Lake Simcoe in Beaverton.

The ROP designates “Tourist Activity/Recreational Nodes” along the waterfront areas of Lake Ontario, Lake Scugog and Lake Simcoe. The policies recognize the importance of these areas as a recreational and tourism resource and allow specified developments. The importance of the Trent-Severn Waterway is also recognized.

Tourist Activity/Recreational Nodes will be reviewed through Envision Durham to determine if the designation serves a purpose in the current ROP.

Discussion Question:

Do you feel that a separate Tourist Activity/Recreational Node designation is necessary in the ROP? If so, do you feel the policies should be enhanced or revised?

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5.5 Open Space Linkages

The ROP has a policy that provides guidance for the protection and use of “Open Space Linkages” as identified in the Land Use Schedules. The symbology illustrates additional connections within and between components of the Greenlands System.

These linkages are meant to provide natural areas and features for the migration of flora and fauna, as well as pedestrians (where appropriate) between the systems. The linkages as well as lands adjacent to the linkage shall preserve and maintain the environmental features and functions of the area.

Currently, there are Open Space Linkages identified in Pickering and Oshawa in the ROP. Open Space Linkages will be reviewed through Envision Durham.

5.6 Waterfront Links

Waterfront Links are shown on Schedule “A” of the ROP. These linkages are illustrated around large facilities such as the nuclear power plants, St. Mary’s cement plant and the Oshawa Harbour industrial area along the Lake Ontario waterfront. These areas have been identified where access to the waterfront is not desirable or in the public interest, specifically in Pickering, Oshawa and Clarington.

Currently there are no specific policies for Waterfront Links in the ROP. Waterfront Links will be reviewed through Envision Durham.

Discussion Question:

Should Open Space Linkages and Waterfront Links continue to be identified in the ROP? If so, what additional areas should be identified and how could the policies associated with these areas be enhanced?

6.0 Environmental policy considerations

The following are some of the policy considerations that will form part of Envision Durham.

6.1 Natural heritage features and areas

Natural heritage features and areas refers to features and areas, including significant wetlands, significant coastal wetlands, other coastal wetlands, fish habitat, significant woodlands, significant valleylands, habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest which are important for their environmental and social values as a legacy of the natural landscapes of an area. These are described in further detail, within the sections below.

In the event that portions of key natural heritage or hydrological features are damaged or destroyed by unauthorized development or site alteration, the ROP specifies that these areas and their ecological features, functions and/or landforms will continue to be subject to all the relevant key natural heritage or hydrological features policies of the ROP, and restoration will be required as part of any development approval process.

The ROP also provides an indication of the general location of key natural heritage and hydrologic features across the region, as shown in Figure 26, on page 48. These areas largely fall within the Major Open Space

System, but also are identified in the other structural elements of the ROP. Developments proposed in proximity to these areas are required to be supported by an environment impact study.

Outside settlement areas, development or site alteration is generally not permitted in Key Natural Heritage Features that are part of the Natural Heritage System or in key hydrologic features, except for:

- Forest, fish, and wildlife management.
- Conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all alternatives have been considered.
- Activities that create or maintain infrastructure authorized under an environmental assessment process.
- Mineral aggregate operations and wayside pits and quarries.
- Expansions to existing buildings and structures, accessory structures and uses, and conversions of legally existing uses which bring the use more into conformity with the ROP, subject to demonstration that the use does not expand into the key hydrologic feature or key natural heritage feature or vegetative protection zone unless there is no other alternative, in which case any expansion will be limited in scope and kept within close geographical proximity to the existing structure.
- Expansions or alterations to existing buildings and structures related to agriculture and expansions to existing residential dwellings if it is demonstrated that:

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- There is no alternative, and the expansion or alteration in the feature is minimized and, in the vegetation protection zone, is directed away from the feature to the maximum extent possible.
- The impact of the expansion or alteration on the feature and its functions is minimized and mitigated to the maximum extent possible.
- Small-scale structures for recreational uses, including boardwalks, footbridges, fences, docks, and picnic facilities, if measures are taken to minimize the number of such structures and their negative impacts.

Within urban areas, key natural heritage and hydrologic areas shall be protected in accordance with the PPS. A Place to Grow also supports the development and protection of natural heritage systems in accordance with the PPS.

The current Schedule “B1” in the ROP illustrates all key natural heritage and hydrologic features as a single layer, rather than separately distinguishing between each of the different features.

Features identified in the current ROP were largely compiled from provincial data that was available in the early 2000’s. Since then, significant advancements have been made in the mapping of these areas and developing inventories of the natural features in Durham Region. This is largely due to the efforts of conservation authorities and through environmental impact studies submitted in support of development.

Some of the Region’s area municipalities have recently completed updated environmental mapping exercises for updates to their local official plans. The Region will update its environmental mapping as part of the development of a connected Regional Natural Heritage System.

Excerpt from Current
Durham Regional
Official Plan

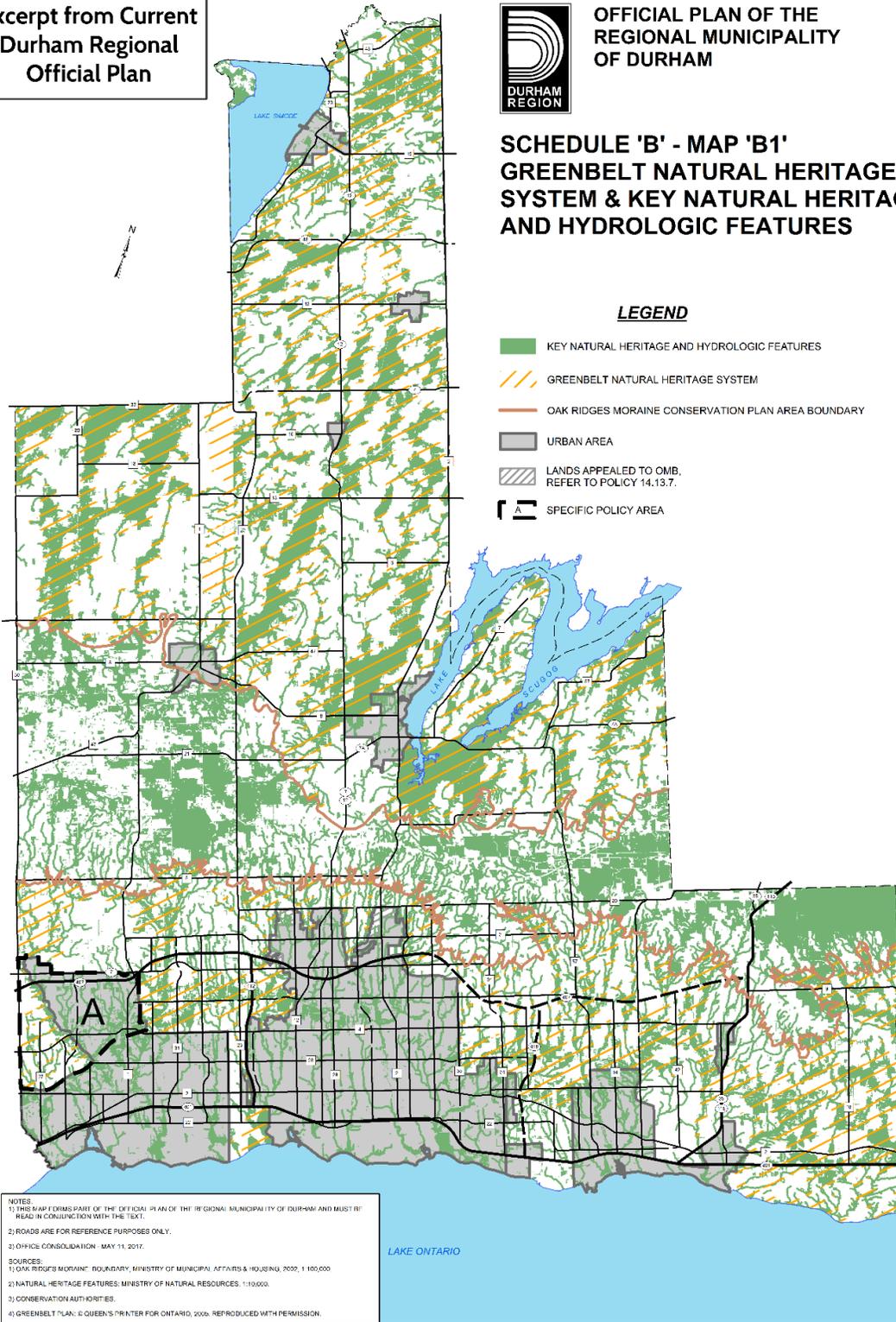


OFFICIAL PLAN OF THE
REGIONAL MUNICIPALITY
OF DURHAM

**SCHEDULE 'B' - MAP 'B1'
GREENBELT NATURAL HERITAGE
SYSTEM & KEY NATURAL HERITAGE
AND HYDROLOGIC FEATURES**

LEGEND

- KEY NATURAL HERITAGE AND HYDROLOGIC FEATURES
- GREENBELT NATURAL HERITAGE SYSTEM
- OAK RIDGES MORaine CONSERVATION PLAN AREA BOUNDARY
- URBAN AREA
- LANDS APPEALED TO OMB, REFER TO POLICY 14.13.7.
- SPECIFIC POLICY AREA



NOTES:
1) THIS MAP FORMS PART OF THE OFFICIAL PLAN OF THE REGIONAL MUNICIPALITY OF DURHAM AND MUST BE READ IN CONJUNCTION WITH THE TEXT.
2) ROADS ARE FOR REFERENCE PURPOSES ONLY.
3) OFFICE CONSOLIDATION - MAY 11, 2017.
SOURCES:
1) OAK RIDGES MORaine BOUNDARY, MINISTRY OF MUNICIPAL AFFAIRS & HOUSING, 2009, 1:100,000
2) NATURAL HERITAGE FEATURES, MINISTRY OF NATURAL RESOURCES, 1:10,000.
3) CONSERVATION AUTHORITIES.
4) GREENBELT PLAN © QUEEN'S PRINTER FOR ONTARIO, 2006, REPRODUCED WITH PERMISSION.

Figure 26: Region of Durham’s existing Schedule ‘B’ – Map ‘B1’ – Greenbelt Natural Heritage System and Key Natural Heritage and Hydrologic Features.

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6.1.1 Significant wetlands

The PPS 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 marshes, swamps, fens and bogs. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands.” Wetlands provide a variety of economic, social and ecological functions and benefits.

Development and site alteration is not permitted in significant wetlands or significant coastal wetlands. Other wetlands would be included as part of the natural heritage system and are subject to those policies.

Significance in regard to wetlands and coastal wetlands means an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry (MNRF) using evaluation procedures established by the Province of Ontario, as amended from time to time.

Within a natural heritage system, all unevaluated wetlands are considered to be significant, however, the 2019 draft PPS proposes to add policy which would provide municipalities with flexibility in dealing with unevaluated wetlands.

Oshawa's Second Marsh



Figure 27: View of Second Marsh. (Source: City of Oshawa).

Oshawa's [Second Marsh](#) is a 137 hectare provincially significant coastal wetland and significant area of natural and scientific interest (ANSI) that provides considerable habitat for wetland dependent wildlife. It is particularly known as an important breeding and migratory stopover area for birds.

The City of Oshawa, in collaboration with CLOCA, Ducks Unlimited Canada and Friends of Second Marsh, is preparing an update to the 1992 Second Marsh Management Plan.

The plan will guide the stewardship of Second Marsh over the next 10-20 years, identifying restoration opportunities, recommending management initiatives and guiding public access and use while respecting the natural and cultural heritage features of the area. The Second Marsh has been largely impacted by the Emerald Ash Borer.

Based on information from the MNRF, there are approximately 66 wetlands within the region that have been identified as provincially significant, covering approximately seven per cent of the Region's total land area. Unevaluated wetlands comprise an additional approximately four per cent of the Region's total land area.

The wetlands in Durham Region as shown in Figure 28, on page 51, illustrates the location and extent of all wetlands within Durham Region.

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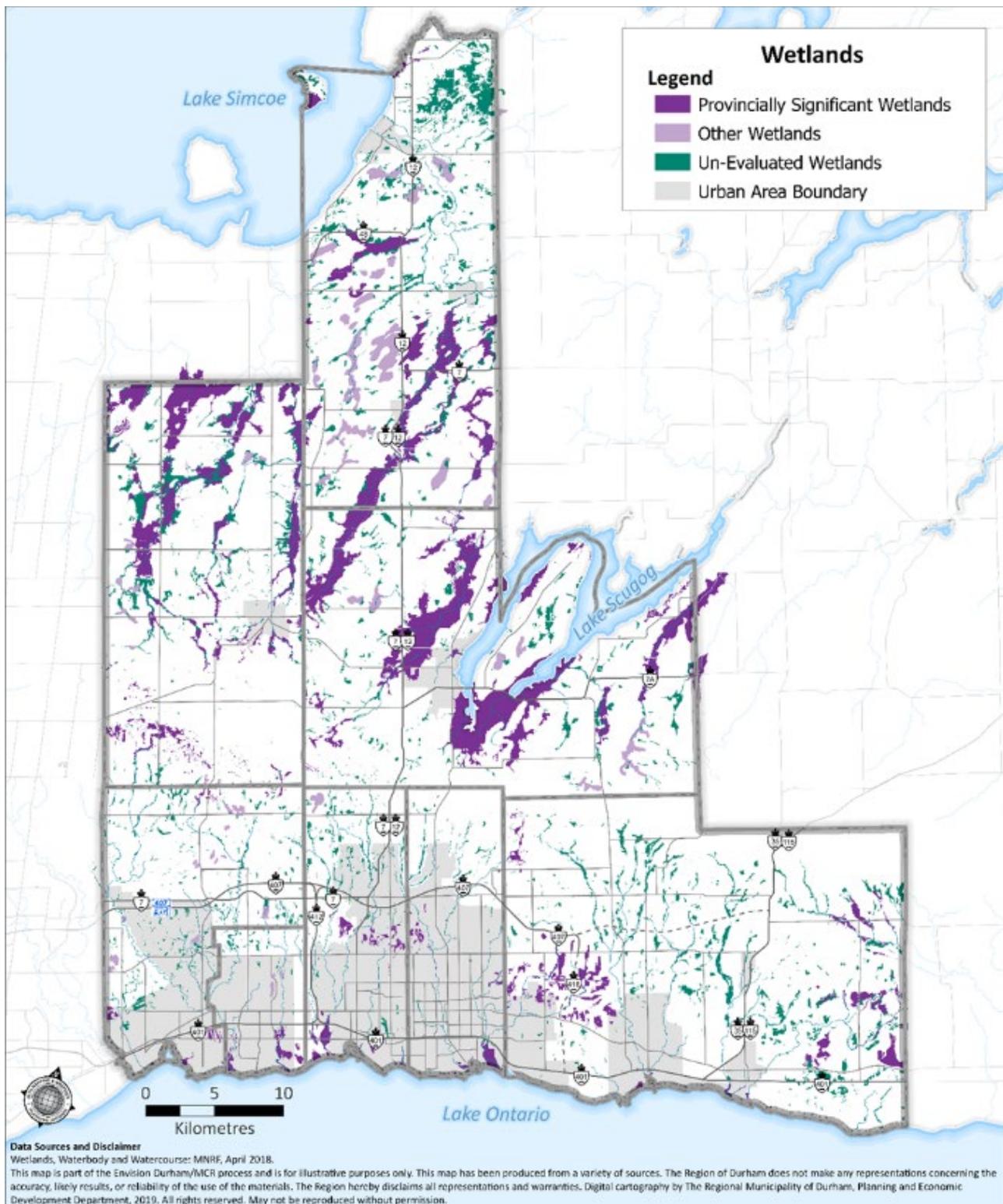


Figure 28: Map of wetlands within the Region of Durham

6.1.2 Significant woodlands

Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels. Woodlands may be delineated according to the Forestry Act definition or the province's Ecological Land Classification system definition for "forest".

Significance of woodlands, refers to whether 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 identified using criteria established by the MNRF.

Woodlands provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products.

The PPS prohibits development and/or site alteration within significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Unlike other natural heritage features, the Province of Ontario has not produced clear

criteria for determining significant woodlands. The Ontario Natural Heritage Reference Manual, (2005) provides general guidance to identifying significant woodlands. Factors such as woodland size, shape, linkages, threatened species, and economic and social values are suggested. Through Envision Durham, the Region will be working with the conservation authorities to determine an appropriate methodology and map significant woodlands across the Region.

The ROP states that the Region will — in co-operation with the area municipalities, conservation authorities and other agencies having jurisdiction — participate in managing woodlands in the region by:

- Conducting a woodlands inventory to identify significant woodlands.
- Encouraging expanding sustainable woodlands throughout the Region to improve woodland functions and linkages with other areas.
- Establishing a tree planting program on Regional road allowances that encourages the use of indigenous species.
- Requiring studies to be carried out on the impact of development on significant woodlands.
- Encouraging land owners to take advantage of programs offered by the Province and conservation authorities in the management of forests and woodlots.
- Encouraging area municipalities to prepare Urban Tree Strategies.

The ROP currently has a target of 30 per cent for woodland cover for the entire municipality. Through Envision Durham, the Region will be reviewing the appropriateness of this target. It is generally recommended

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that a minimum of 30 per cent of each watershed area should be forest cover.⁵ However, more specific targets are also established in individual watershed plans (based on local conditions and opportunities) and avoiding prime agricultural lands. The use of indigenous tree species to achieve these targets is encouraged.

Forest cover in Durham

Forest cover, defined as old growth as well as plantations, covers approximately 26 per cent (67,696 hectares (ha)) of Durham Region. In comparison, other regions such as, Halton, Peel and York have about 26 per cent (24,901 ha), 19 per cent (23,575 ha) and 20 per cent (41,946 ha) total forest cover for their municipality, respectively.

Since the time of the last ROP review, forest cover has increased in all area municipalities in Durham and in all of the other above-noted regional municipalities. This could be due to several factors including: the availability of better mapping; enhanced protection of forests through provincial policy and the planning process; maturation of trees; and stewardship activities.

Durham's Woodland Conservation and Management By-Law

Recognizing the importance of tree cover, the Region of Durham has a by-law that protects the destruction of trees.

Under the Municipal Act, an upper-tier municipality may prohibit or regulate the destruction or injury of trees in woodlands designated in a by-law, having regard for good forestry practices, and by regulating the removal of trees in woodlands of one hectare or more in size. Tree removal in any woodland under one hectare is regulated by the local area municipalities.

The Tree By-law is currently in the process of being updated to the "Woodland Conservation and Management By-law".⁶

Through Envision Durham, consideration will be given to updating the ROP to provide further support for the Regional Woodland By-law which could include, further detail about the by-law, policy requirements for tree preservation plans (with associated arborist analysis and land scape plans), mitigation measures, and where no alternative is possible, compensation (refer to Section 4.3).

⁵ Environment Canada. How Much Habitat is Enough? http://publications.gc.ca/collections/collection_2013/ec/CW66-164-2013-eng.pdf

⁶ See Commissioner's Report [#2019-P-5](#) for further detail of the review.

Table 1 below details the amount of forest cover in Durham Region by area municipality based on data from the Ministry of Natural Resources and Forestry.

Table 1: Overall forest coverage by municipality within the Region of Durham

Municipality	Forest Cover (%)
Ajax	15.9
Brock	23.4
Clarington	29.7
Oshawa	12.8
Pickering	21.8
Scugog	24.7
Uxbridge	36.4
Whitby	15.2
Durham (total)	25.8

Source: MNRF July 2018 and Durham Region Planning and Economic Development

Discussion Question:

How can the Region best support the protection and enhancement of significant woodlands in Durham?

Discussion Question:

Should there be targets included in the ROP for other natural heritage and hydrologic features in addition to woodlands?

6.1.2.1 Forest management plans and strategies

The preparation of forest management strategies is supported by the ROP for both urban and rural areas.

Urban trees refers to all trees within urban areas (including trees along streets, in gardens and parks, small and larger woodlands, cemeteries and other open spaces). There has been a growing interest in maintaining and extending urban forests as the benefits for a healthy and sustainable community environment become better understood.

Urban trees and woodlands are invaluable for a number of reasons. They provide wildlife habitats, screening, noise reduction, dust traps, absorption of greenhouse gases, stormwater retention, and linkages to other wildlife areas.

Urban forests are especially beneficial in reducing the urban heat island effect, as discussed in Section 3.2.3.1 of this paper. Trees provide shade and stop the absorption of solar energy. This results in cooler surface and air temperatures. Trees also contribute to peace and tranquility, relief from stress, and aesthetic value.

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Some area municipalities have urban forest management plans in place, while other municipalities including the Town of Whitby, are in the process of developing plans and strategies. Through Envision Durham, consideration will be given to how the ROP can better encourage the preparation and implementation of these plans and strategies for urban and rural areas.

6.1.3 Significant valleylands

Valleylands, as defined in the PPS, are natural areas that occur in valleys or other landform depressions that have water flowing through or standing for some period of the year. These lands are often prone to flooding (refer to Natural Hazards Section).

The PPS prohibits development and/or site alteration within significant valleylands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Significant valleylands have typically been identified through the preparation of watershed plans, and subsequently added environmental features mapping as appropriate. In the absence of this information, significant valleylands have also been identified on a site-by-site basis, through development applications.

Through Envision Durham, significant valleylands will be mapped and included in the natural heritage system.

6.1.4 Fish habitat

Fish habitat, as defined in the Fisheries Act, means spawning grounds and any other areas, including nursery, rearing, food supply

and migration areas on which fish depend directly or indirectly in order to carry out their life processes.

The PPS prohibits development in fish habitat, except in accordance with provincial and federal requirements. Fish habitat is predominantly identified by warm and cold watercourses in the ROP.

Yellow Fish Road Program



Figure 29: Yellow Fish Road Program. Source: Trout Unlimited Canada.

The Yellow Fish Road Program, a nation-wide environmental education program designed and managed by Trout Unlimited Canada, is supported by many area municipalities and conservation authorities in Durham.

The Yellow Fish Road program educates students and the public about the impacts of pollution entering urban storm drains.

Preventing pollutants from entering our storm drains is critical to protecting and improving water quality and aquatic habitat.

6.1.5 Habitat of endangered species and threatened species

According to the PPS, an endangered species is one that is listed or categorized as an “Endangered Species” on the Ontario Ministry of Natural Resources and Forestry’s official Species at Risk list. Such native species include plants, animals, fish, reptiles and invertebrates (insects/spiders).

Development and site alteration is not permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements. Due to the confidential nature of this information, the specific habitat sites cannot be shown. However, where known, they are included in natural heritage features/system mapping and are also assessed on an application, site-by-site basis.

Through Envision Durham, the Region will be reviewing updated species information available through the Ontario Natural Heritage Information Centre and revising policies and mapping to implement the provincial plans and applicable legislation.

6.1.6 Significant wildlife habitat

The ROP directs that Regional Council, in conjunction with the provincial government and area municipalities, examine the ways and means to maintain wildlife habitats.

The identification of significant wildlife habitat has not been completed to date. Significant wildlife will be identified through the preparation of watershed plans and may be added to the Natural Heritage System mapping as appropriate. In the absence of

this information, significant wildlife will be identified on a site-by-site basis, through development applications.

Wildlife habitat is defined in the PPS to include areas where plants, animals and other organisms live, and find adequate amounts of food, water and shelter and space needed to sustain their populations.

Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species. As a result, significant wildlife habitat often overlaps with other natural heritage features.

6.1.7 Significant Areas of Natural and Scientific Interest

Areas of Natural and Scientific Interest (ANSIs) are defined by the PPS as areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.

Development or site alteration is not permitted within significant areas of natural and scientific interest, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

The MNRF is responsible for identifying and evaluating ANSIs. Life science includes features such as undisturbed unique vegetation and landforms. Earth science includes significant bedrock, fossil and

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landform features. The ANSIs in Durham Region include many significant examples of unique bedrock, fossils and land forms.

There are 27 significant ANSIs in Durham (19 Life Science and eight Earth Science). Additionally, there are 34 candidate ANSIs (29 Life Science and five Earth Science). Figure 31, on page 58 illustrates the location of ANSIs in the Region of Durham.

6.1.8 Other key natural heritage features

Additional key natural heritage features identified in the provincial plans include:

- Sand barrens.
- Savannahs.
- Tallgrass Prairies.
- Alvars.

Development or site alteration is not permitted within these key natural heritage

features unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Within Durham Region, sand barrens and tallgrass prairies have been identified. Through Envision Durham, the Region will update mapping of these features.



Figure 30: A sand barren in Carruthers Creek Watershed.
Source: TRCA.

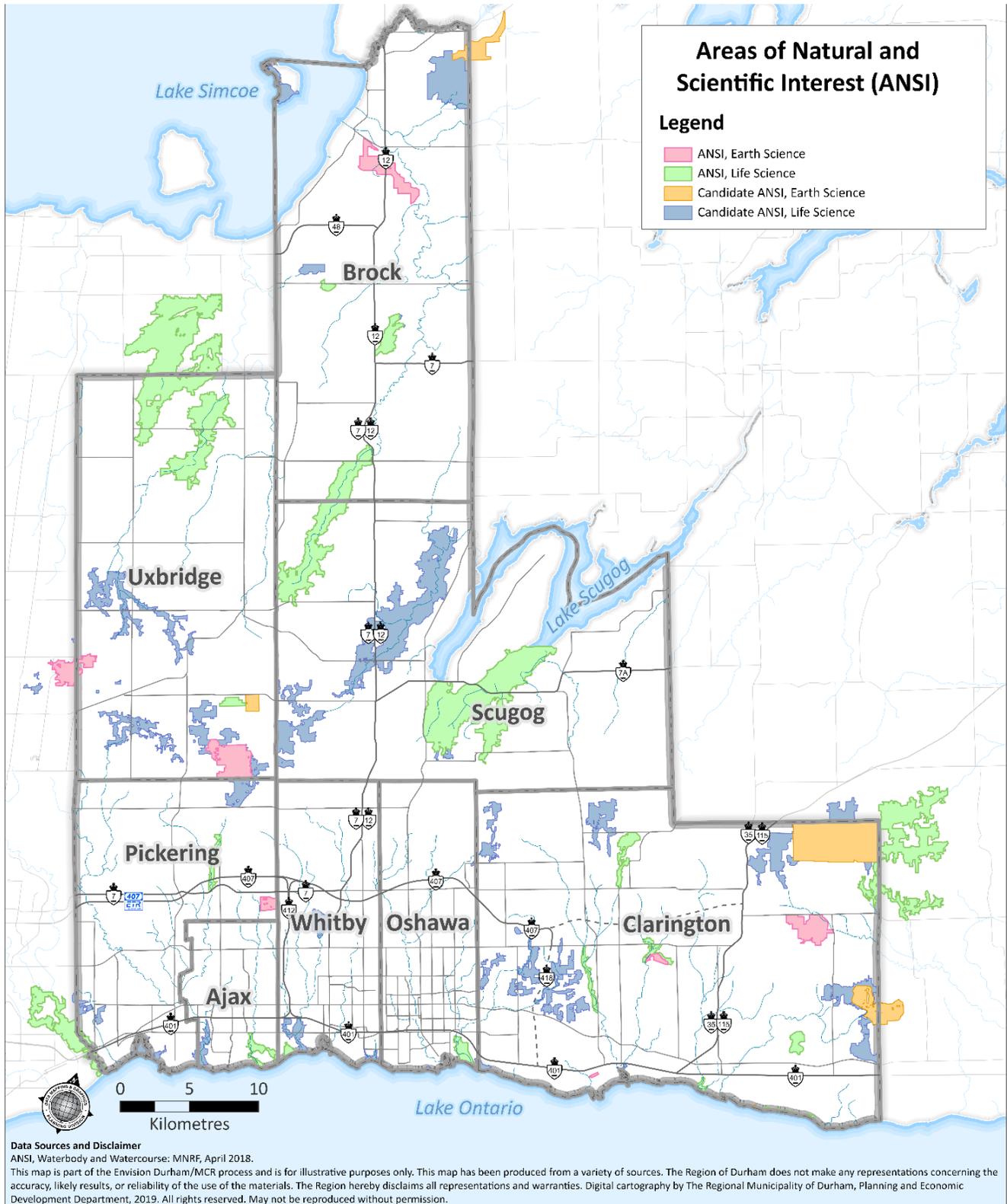


Figure 31: Areas of Natural and Scientific Interest in the Region of Durham.

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6.2 Vegetation protection zones (buffers)

The PPS prohibits development and site alteration on adjacent lands to the natural heritage features and areas, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions. Adjacent lands are those lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or area. The extent of the adjacent lands may be recommended by the province; or based on municipal approaches which achieve the same objectives.

Provincial plans provide policy guidance regarding minimum “vegetation protection zones” (VPZ). Outside of settlement areas, development or site alteration within 120 metres of key natural heritage features within the natural heritage system or key hydrologic features requires a natural heritage or hydrologic evaluation (refer to Environmental Impact Study Section). The required study will identify a VPZ which:

- Is of sufficient width to protect the key natural heritage feature or key hydrologic feature and its functions from the impacts of the proposed change and associated activities that may occur before, during and after construction and, where possible, restore or enhance the feature and/or its function.

- Is established to achieve and be maintained as natural self-sustaining vegetation.
- For key hydrologic features, fish habitat, and significant woodlands, is no less than 30 metres measured from the outside boundary of the key natural heritage feature or key hydrologic feature.

Development or site alteration is not generally permitted in the VPZ, except in limited circumstances, such as for agriculture and shoreline development — subject to separate criteria and requirements, as outlined in provincial plans.

Currently, within urban areas and rural settlements, the ROP requires appropriate setbacks to be determined/confirmed through an EIS prepared in support of a development application. This determination is made in consultation with conservation authorities.

Some area municipalities have updated their official plans to provide further policy and to establish minimum VPZs beyond those required by provincial policy.

Through Envision Durham, the Region will be reviewing its policies around VPZs.

Discussion Question:

Should the Region include more detailed policies prescribing minimum vegetation protection zones (where they are not otherwise prescribed by provincial policy)?

6.3 Natural Heritage System

The PPS defines a Natural Heritage System (NHS) as a system made up of natural heritage features and areas (as identified in the previous sections); 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.

A natural systems approach is important. It protects areas of natural heritage, hydrologic and/or landform features; and recognizes they are often functionally inter-related and collectively provide essential ecosystem services (including water storage and filtration, cleaner air, habitat, support for pollinators, carbon storage and resilience to climate change).

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

requirement was added to the PPS, in 2014, that required the identification of natural heritage systems. It also recognized that natural heritage systems will vary in size and form within settlement areas, rural areas, and prime agricultural areas.

The province has a recommended approach for identifying natural heritage systems (where provincial systems do not apply). However, municipal approaches that achieve or exceed the same objective may also be used.

In accordance with provincial policy, development or site alteration within the NHS is required to demonstrate that:

- There are no negative impacts on key natural heritage features or key hydrologic features or their functions.
- Connectivity along the system and between key natural heritage features and key hydrologic features located within 240 metres of each other will be maintained or, where possible, enhanced for the movement of native plants and animals across the landscape.
- The removal of other natural features not identified as key natural heritage features and key hydrologic features is avoided, where possible. Such features should be incorporated into the planning and design of the proposed use wherever possible.
- Except for certain uses as set out in the provincial plans, the disturbed area, including any buildings and structures, will not exceed 25 per cent of the total developable area, and the impervious surface will not exceed 10 per cent of the total developable area.

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- With respect to golf courses, the disturbed area will not exceed 40 per cent of the total developable area.
- At least 30 per cent of the total developable area will remain or be returned to natural self-sustaining vegetation, except where otherwise specified.

NHS policies are not intended to prevent the continuation of agricultural operations.

Applications to establish or expand a major recreational use in the NHS are required to be accompanied by a vegetation enhancement plan that incorporates planning, design, landscaping and construction measures that:

- Maintain or, where possible, enhance the amount of natural self-sustaining vegetation on the site and the connectivity between adjacent key natural heritage features or key hydrologic features.
- Wherever possible, keep intermittent stream channels and drainage swales in a free-to-grow, low-maintenance condition;
- Minimize the application and use of pesticides and fertilizers.
- Locate new natural self-sustaining vegetation in areas that maximize the ecological functions and ecological value of the area.

Such applications are also required to be accompanied by a conservation plan demonstrating how water, nutrient and biocide use will be kept to a minimum, including through the establishment and monitoring of targets.

While the Growth Plan and Greenbelt Plan Natural Heritage Systems do not apply within settlement areas, A Place to Grow directs that in these areas, municipalities will continue to protect any other natural heritage features and areas in a manner that is consistent with the PPS; and may continue to protect any other natural heritage system or identify new systems in a manner that is consistent with the PPS.

The ROP encourages the development of a connected natural areas system allowing for the migration of plants and wildlife. The Major Open Space System establishes a framework for connectivity at the regional scale. A system of linkages and corridors has been established for the Oak Ridges Moraine through the ORMCP. The recognition and establishment of natural connectivity is essential to the vitality of the natural heritage resources of the region.

Accordingly, the development of a connected and functional natural system comprised of the Greenlands System and additional linkages and corridors, substantiated by appropriate study, as identified in area municipal official plans is encouraged.

Currently, area municipal official plans are directed to include a refined Greenbelt Natural Heritage System boundary, to be determined at the time of the area municipalities' Greenbelt Plan conformity exercises. Unlike the Growth Plan NHS or the Provincial Agricultural System, there are no provincial criteria for refining the Greenbelt NHS.

In Durham, the Growth Plan NHS applies to lands outside of the existing Urban Area

Boundary and the Greenbelt, commonly referred to as “Whitebelt” lands. Within these limited areas, the Growth Plan NHS has only been identified for small portions of land containing natural heritage features in the City of Pickering and Municipality of Clarington, as shown in Figure 32, on page 63.

Additionally, the 2017 Greenbelt Plan added policies and mapping of urban river valleys as shown in Figure 32, on page 63. These lands — while not part of the Protected Countryside — are now considered to be part of the Greenbelt. Accordingly, relevant policies and mapping will be incorporated into the ROP through Envision Durham.

The Greenbelt Plan promotes the following matters within the Urban River Valley designation:

- Protection of natural and open space lands along river valleys in urban areas which will assist in ecologically connecting the rest of the Greenbelt Area to the Great Lakes and other inland lakes.
- Protection of natural heritage and hydrologic features and functions along urban river valleys, including coastal wetlands.
- Conservation of cultural heritage resources.
- Provision of a gateway to the rural landscape of the Greenbelt.
- Provision of a range of natural settings on publicly owned lands for recreational,

cultural and tourism uses, including parkland, open space land and trails.

Through Envision Durham, the Region will be refining the Greenbelt and Growth Plan natural heritage systems in consultation with area municipalities and in accordance with Provincial criteria, as applicable. Some area municipalities have identified their own natural heritage systems within local official plans, based on conservation authority natural heritage systems. The Region will be considering how to best identify a regional scale natural heritage system, based on the provincial mapping and available area municipal and conservation authority natural heritage system mapping. Area municipal official plans generally provide more detailed mapping.

Through Envision Durham, the Region will also determine whether the Region should adopt an overlay approach or a separate land-use designation (for example Environmental Lands) to protect the natural heritage system and key natural heritage and hydrologic features and areas.

Discussion Question:

Recognizing the two-tier municipal system, how should the Region best protect the natural heritage system, features, and areas in the ROP (overlay, designation, level of detail)?

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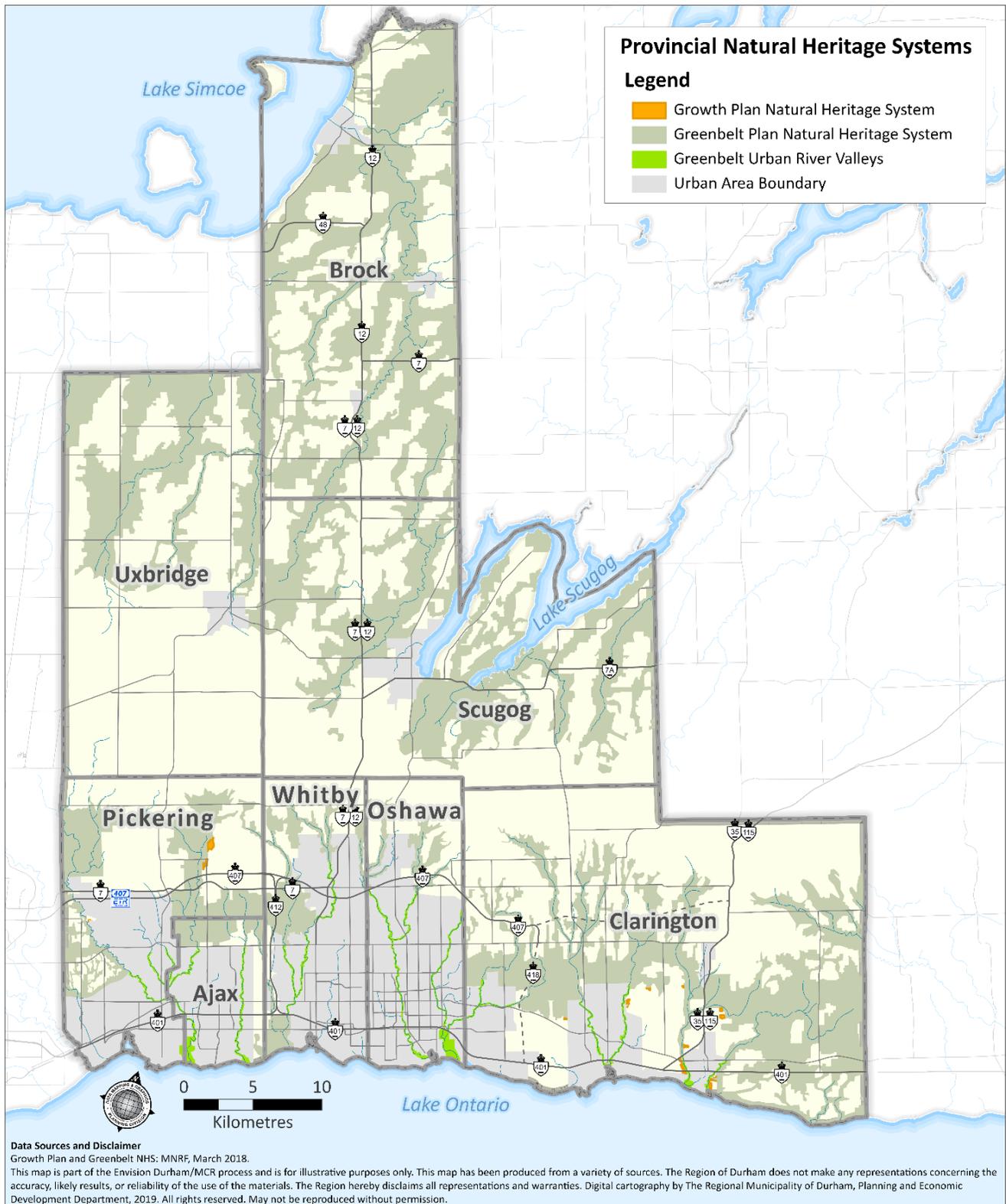


Figure 32: Provincial Natural Heritage Systems located within Durham Region.

6.4 Water resources

Water is essential to health, economic and social well-being. Ground and surface sources sustain healthy aquatic and terrestrial ecosystems, and supply water to residents and industries in urban and rural communities. Key areas of hydrologic significance in Durham include:

- The Oak Ridges Moraine, with its primary recharge, headwater and discharge areas, and major drinking water aquifers.
- Major river valleys that flow from the Oak Ridges Moraine to Lake Ontario.
- Portions of the Lake Simcoe watershed.
- The former Lake Iroquois shoreline.

Provincial plans require planning authorities to protect, improve, or restore the quality and quantity of water. These directions include protecting municipal drinking water supplies and designating and protecting vulnerable areas. The provincial plans direct municipalities to:

- Use the watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development.
- Minimize potential negative impacts, including cross-jurisdictional and cross-watershed impacts.
- Identify water resource systems consisting of ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas, which

are necessary for the ecological and hydrological integrity of the watershed.

- Maintain linkages and related functions among ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas.
- Implement necessary restrictions on development and site alteration to:
 - Protect all municipal drinking water supplies and designated vulnerable areas.
 - Protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions.
- Plan for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality.
- Ensure consideration of environmental lake capacity, where applicable.
- Ensure stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.

Water resource systems are required to be identified through watershed planning to provide for the long-term protection of key hydrologic features, key hydrologic areas, and their functions.

The PPS further restricts development and site alteration in, or near, sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.

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Mitigative measures and/or alternative development approaches may be required to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.

A Place to Grow requires upper-tier municipalities — in partnership with area municipalities and conservation authorities — ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to protecting, enhancing, or restoring the quality and quantity of water within a watershed.

To ensure that water resources are available in sufficient quality and quantity to meet existing and future needs of the Region's residents, the current ROP:

- Promotes and supports water resource conservation and management initiatives.
- Requires lakes and streams and adjoining lands to be retained, or rehabilitated to a natural state when assessing development to protect fish and wildlife habitat and minimize alterations to natural drainage systems and sediments entering a watercourse or lake.
- Discourages alterations to watercourses.
- Ensures that, where appropriate, area municipal official plans require stormwater management and erosion and sedimentation control plans be prepared in the context of subwatershed plans, or other similar plans and that stormwater management facilities be

implemented as part of the pre-servicing of development proposals.

- Ensures that, for lands located on the Oak Ridges Moraine and the lands within the Protected Countryside of the Greenbelt Plan, stormwater management and watershed plans and their components, meet the requirements of the Oak Ridges Moraine Conservation Plan and the Greenbelt Plan respectively.
- Where appropriate, promotes groundwater infiltration, through improved stormwater management design.

Additionally, the ROP directs the Region to co-operate with the province and conservation authorities to promote the effective use and conservation of water resources, and to protect against adverse cumulative impacts of development on water quantity and quality.

The ROP requires the submission of a hydrogeological study in support of development applications in certain instances, where there may be impacts to water resources to maintain and/or enhance such resources in sufficient quality and quantity to meet existing and future needs of the Region's residents on a sustainable basis.

Through Envision Durham, the Region will review its policies pertaining to water resources and applicable studies and updating policies and mapping as necessary for conformity with updated provincial plans.

6.5 Watershed planning

A watershed is defined by the PPS as “an area that is drained by a river and its tributaries.” The PPS directs planning authorities to use the watershed as an ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development.

What is watershed planning?

Watershed planning is defined by the Growth Plan and Greenbelt Plan as “planning that provides a framework for establishing goals, objectives and direction for the protection of water resources, the management of human activities, land, water, aquatic life and resources within a watershed and for the assessment of cumulative, cross-jurisdictional and cross-watershed impacts.”

The Greenbelt Plan, 2017 and A Place to Grow, 2019 have enhanced requirements for the completion of watershed plans or equivalent. The Greenbelt Plan directs municipalities — partnering with conservation authorities — to ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement or restoration of the quality and quantity of water within a watershed.

A Place to Grow, 2019 requires watershed planning to inform:

- The identification of the water resource system including key hydrologic features and key hydrologic areas and their functions.
- The protection, enhancement, or restoration of the quality and quantity of water.
- Decisions on allocation of growth.
- Planning for water, wastewater, and stormwater infrastructure.

Furthermore, the Growth Plan requires planning for large-scale greenfield development, including secondary plans, to be informed by subwatershed planning, or equivalent. Settlement Area Boundary Expansions need to demonstrate that any proposed expansion will minimize or mitigate potential impacts on watershed conditions and the water resource system, including the quality and quantity of water. Master planning for water, wastewater and stormwater infrastructure needs to be informed by watershed planning.

Watershed planning is also required to consider the Great Lakes Strategy, the targets and goals of the Great Lakes Protection Act, 2015, and any applicable Great Lakes agreements.

Generally, within Durham Region, the preparation of watershed plans has been led by conservation authorities in partnership with the Region, area municipalities and other key stakeholders.

The ORMCP required completion of watershed plans by (upper and single-tier municipalities) for every watershed that has streams originating on the Oak Ridges Moraine (within their jurisdiction). Due to this requirement, the Region of Durham partnered with the five conservation authorities to have them prepare watershed plans. These watershed plans were

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predominantly completed between 2010 and 2013.

Watershed plans cover the majority of the Region as shown in Figure 33 on page 68. Table 2 on page 69 provides the current status of watershed plans in Durham Region. It should be noted that in many cases for areas where watershed plans have not been completed, other studies have been completed which may be considered as equivalent.

Current ROP policies support the preparation and implementation of watershed plans as an effective planning tool in the protection of the Region's natural resources. The ROP prioritizes the preparation of watershed plans based on development pressures, environmental urgency and fiscal constraints. For example, the ROP states that any consideration of expansion of the urban boundary in north-east Pickering require an update to the East Duffins and Carruthers Creek watershed plan. This study is currently underway.

The Region continues to partner with the conservation authorities, as opportunities arise, to update watershed plans. Watershed plans should be regularly updated, where necessary, to address matters including provincial plan conformity, climate change, and water resource identification, and in accordance with provincial guidance. Draft watershed planning guidance was released by the province in 2018 for comment. The final guidance may be released in 2019.

Through Envision Durham, the Region will update watershed planning policies in accordance with provincial policy and guidance, as appropriate, and will include required mapping of water resources. In addition, a new map could be appended to the ROP showing conservation authority jurisdictions and watershed plan boundaries, for reference purposes and to aid in implementation. Policy language could be included in the ROP to allow for the update of this schedule as new information becomes available without amendment to the ROP.

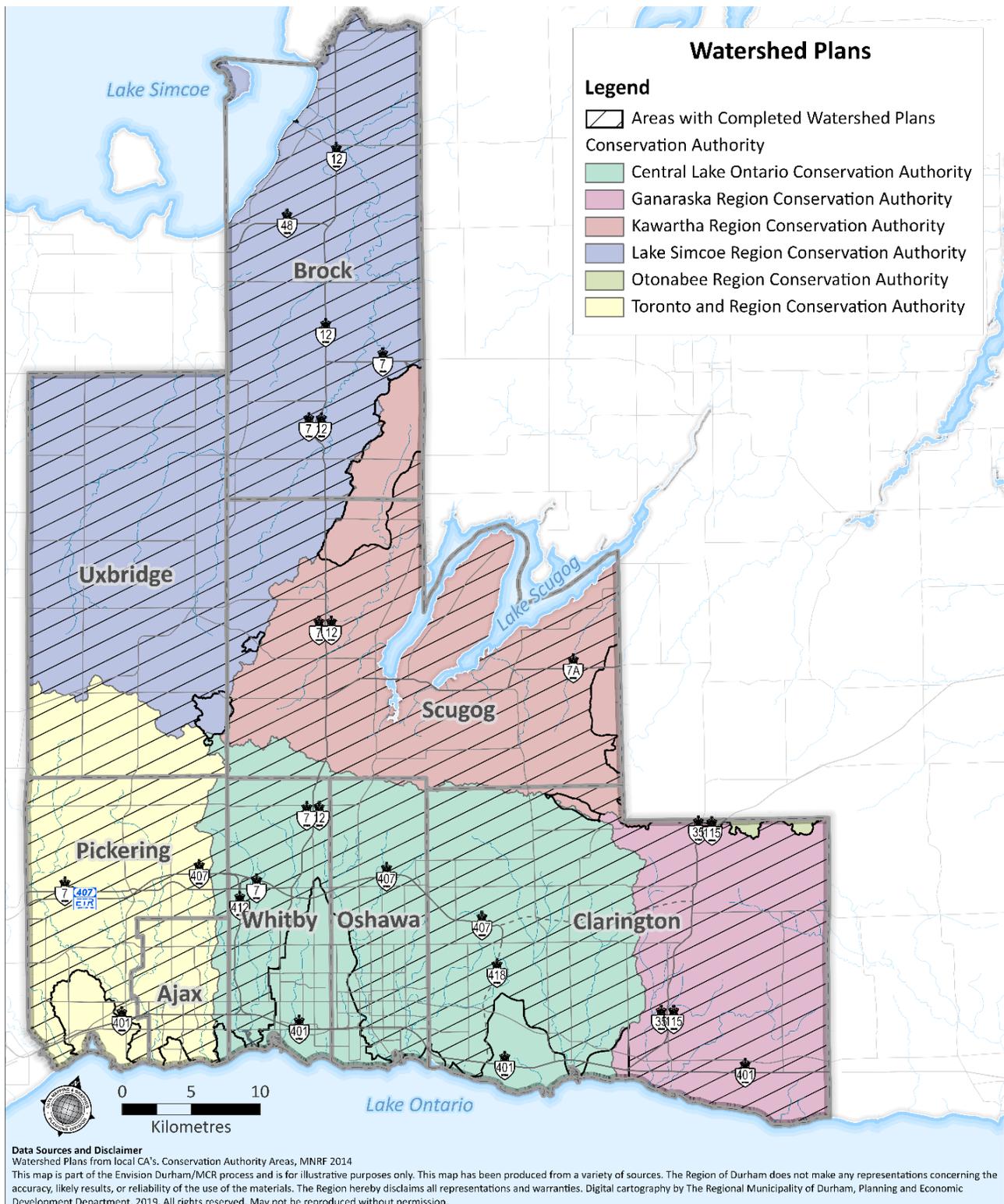


Figure 33: Areas with completed watershed plans by conservation authorities in Durham Region.

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Table 2: Status of completed watershed plans in the Durham Region by conservation authority.

Watershed plan	Status	Conservation authority
Lynde	Completed in 2012*	CLOCA
Oshawa	Completed in 2013*	CLOCA
Black/Farewell/Harmony	Completed in 2013*	CLOCA
Bowmanville/Soper	Completed in 2013*	CLOCA
Robinson/Tooley	Completed in 2011	CLOCA
Ganaraska	Completed in 2010	GRCA
Graham	Completed in 2010	GRCA
Wilmot	Completed in 2010	GRCA
Lovekin, Bouchette Point, Port Granby	Completed in 2010	GRCA
Nonquon	Completed in 2012	KRCA
South Lake Scugog	Completed in 2012	KRCA
Blackstock	Completed in 2012	KRCA
East Cross	Completed in 2012	KRCA
Black	Completed in 2010	LSRCA
Beaver	Completed in 2012	LSRCA
Pefferlaw	Completed in 2012	LSRCA
Uxbridge Brook	Completed in 1997	LSRCA
Duffins/Carruthers	Completed in 2003*	TRCA
Rouge	Completed in 2007	TRCA
Petticoat Creek	Completed in 2012	TRCA

* Identifies where updates are currently underway.

Carruthers Creek Watershed Plan Update



Figure 34: Carruthers Creek. (Source: TRCA).

In 2015, TRCA was retained to update the 2003 Carruthers Creek Watershed Plan. The Carruthers Creek Watershed is a small watershed of approximately 38 square kilometres located within the Town of Ajax and City of Pickering. As part of the update, TRCA will assess the changes and impacts which have occurred since 2003 and review the current conditions of the watershed. The updated watershed plan will include actions to keep the watershed healthy over the long-term. The final watershed plan will be an important resource to guide future decision-making for the watershed by the Region of Durham, the City of Pickering and the Town of Ajax.

CLOCA Watershed Plans Update

In 2018, CLOCA began a process to update several watershed plans, including those for Lynde, Oshawa, Black/Harmony/Farewell and Bowmanville/Soper creeks. With new science and technology tools and emerging challenges, CLOCA has more data to better assess the impact of changing landscapes on watershed health which will help to evolve relevant actions and responses. Watershed plans are being updated to reflect current conditions, provide new recommendations and actions for all stakeholders. Updated watershed plans are scheduled for release in 2020.

6.5.1 Key hydrologic features

Key hydrologic features refers to permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.

Development or site alteration is not permitted in key hydrologic features, including any associated VPZ, with the exception of:

- Forest, fish and wildlife management.
- Conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all alternatives have been considered.
- Infrastructure, aggregate, recreational, shoreline and legally existing uses.

The ROP currently contains mapping of these features on Schedule “B1”, as shown in Figure 37, on page 75. Through Envision Durham, mapping and policies related to key hydrologic features will be updated.

6.5.2 Key hydrologic areas

Recent updates to A Place to Grow and the Greenbelt Plan introduced new policies for the protection of key hydrologic areas, in addition to key hydrologic features.

Key hydrologic areas consist of significant groundwater recharge areas, highly vulnerable aquifers, and significant surface water contribution areas. These are necessary for the ecological and hydrologic integrity of a watershed. These areas maintain ground and surface water quality

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and quantity by collecting, storing and filtering rainwater and overland flow, recharge aquifers and feed downstream tributaries, lakes, wetlands and discharge areas. These areas are also sensitive to contamination and activities that reduce their recharge functions.

For lands within these areas, major development may only be permitted where it has been demonstrated that the hydrologic functions, including groundwater and surface water quality and quantity, of these areas shall be protected and, where possible, improved or restored through measures such as:

- Identification of planning, design and construction practices and techniques.
- Meeting criteria and direction set out in the applicable watershed planning or subwatershed plan.
- Meeting any applicable provincial standards, guidelines and procedures.

6.5.2.1 Significant groundwater recharge areas

Significant groundwater recharge areas are areas on the landscape that are characterized by porous soils, such as sand or gravel, which allows water to seep easily into the ground and flow to an aquifer.

A recharge area is considered significant when it helps maintain the water level in an aquifer that supplies a community or private residence with drinking water.

6.5.2.2 Highly vulnerable aquifers

Highly vulnerable aquifers are areas underground that are highly saturated with water – enough water that it can be withdrawn for human use.

A highly vulnerable aquifer is one that is particularly susceptible to contamination because of its location near the surface of the ground, or where the types of materials in the ground around it are highly permeable. For example, clay is less permeable and typically acts to protect the aquifer below it, compared to sand and fractured bedrock which are both highly permeable and do not have these protective characteristics.

Groundwater recharge

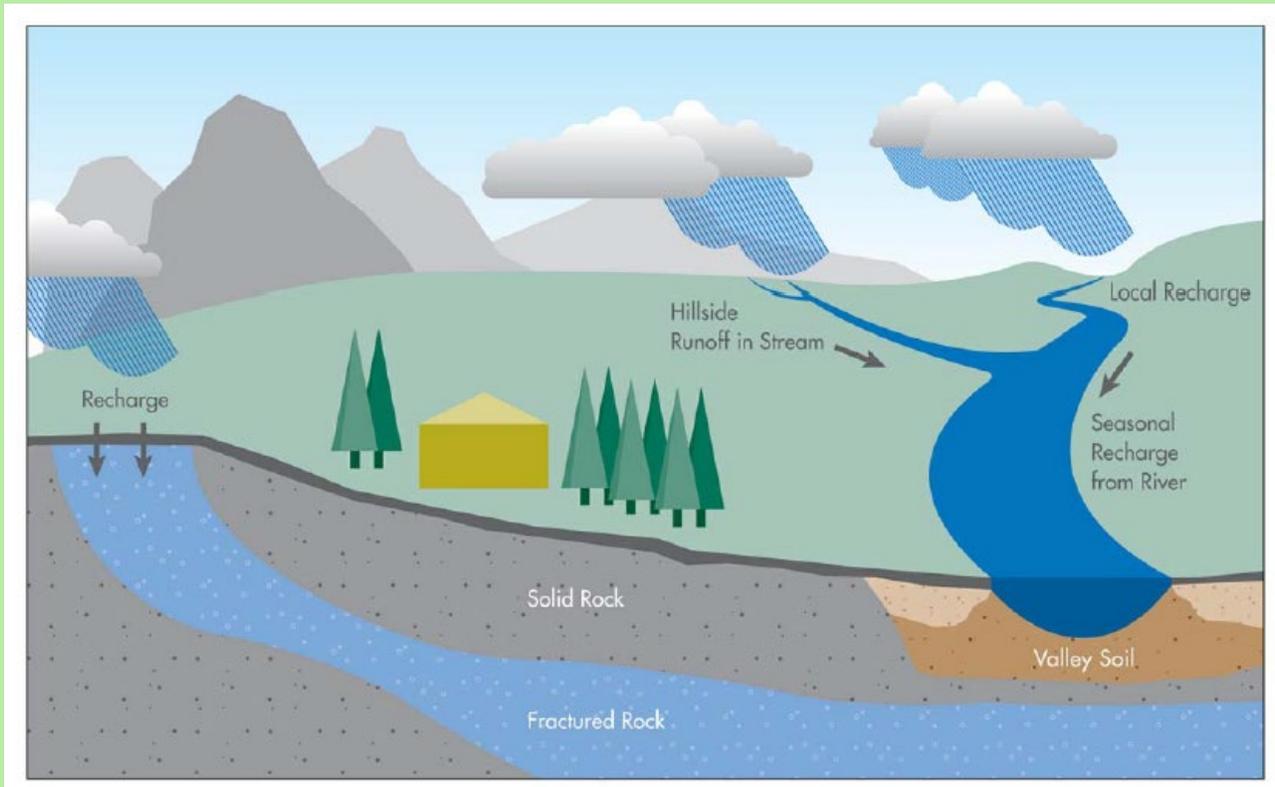


Figure 35: Diagram of groundwater recharge. (Source: Oregon State University, in Source Protection Primer, Conservation Ontario).

An aquifer is an area of soil or rock underneath the ground that is porous and permeable, and that contains or serves to transport water to another place. Water that seeps into an aquifer is called recharge. The land where the rain or snow seeps into the aquifer is called a recharge area.

6.5.2.3 Significant surface water contribution areas

Significant surface water contribution areas are generally associated with headwater catchments, that contribute to baseflow volumes which are significant to the overall surface water flow volumes within a watershed.

6.6 Source protection

Following the Walkerton tragedy, legislation was introduced to protect drinking water in Ontario. The Clean Water Act, 2006, and related regulations established source protection areas and regions and the development of source protection plans for the protection of drinking water in Ontario.

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Figure 36: Drinking water protection zone sign in the Township of Uxbridge.

There are three source protection regions (SPR) in Durham Region, as shown in Figure 38, on page 76:

- The South Georgian Bay Lake Simcoe (SGBLS) Source Protection Region.
- The Credit Valley, Toronto and Region and Central Lake Ontario Source Protection Region.
- The Trent Conservation Coalition Source Protection Region.

There are four Source Protection Plans (SPPs) — completed and in effect as of 2015 — that apply to Durham Region:

- The Trent Source Protection Plan.
- The Ganaraska Source Protection Plan.
- The South Georgian Bay Lake Simcoe (SGBLS) Source Protection Plan.
- The Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source Protection Plan.

These SPPs are to be implemented by the Region through this review. However, some area municipalities have already brought forward local official plan amendments to

implement the SPPs. The policies of the SPPs apply whether or not the updates have been completed to the local and regional official plan.

The Clean Water Act identifies activities that could pose a threat to drinking water sources under certain circumstances. These threat activities may be significant, moderate, or low-level risks. These include:

- Application, handling and storage of agricultural source material (such as manure), non-agricultural source material (such as biosolids), commercial fertilizer, and pesticides.
- Handling and storage of fuel, dense non-aqueous phase liquids (DNAPLs), and organic solvents.
- Management of aircraft de-icing chemical runoff.
- Land used for livestock grazing or pasturing, outdoor confinement areas, and farm-animal yards.
- Application, handling and storage of road salt, and storage of snow.
- The establishment, operation and maintenance of systems that collect, store, transmit, treat or dispose of sewage (such as septic systems and sewage treatment plants, stormwater management facilities).
- The establishment, operation and maintenance of waste disposal sites (such as landfills).
- Activities that take water from a water body without returning the water to the same water body.
- An activity that reduces the recharge of an aquifer.

- The establishment and operation of a liquid hydrocarbon pipeline.

Dense Non-Aqueous Phase Liquids (DNAPLs) are a particularly hazardous group of substances that are heavier than water and are difficult to remove once they contaminate a water source. (Source: Conservation Ontario)

The ORMCP includes policies related to wellhead protection and areas of high aquifer vulnerability. These policies require municipal official plans to establish wellhead protection areas (WHPAs) and prohibit certain uses within these areas. Additionally, restricting the transportation of chemicals and volatile materials along haulage routes through these areas is encouraged. The ROP currently contains policies related to WHPAs and High Aquifer Vulnerability areas as well as mapping on Schedule “B” – Map “B2” High Aquifer Vulnerability and Wellhead Protection Areas as shown in Figure 37, on page 75.

While the ROP already contains sound policies on the protection of WHPAs in accordance with the ORMCP, revisions are required through Envision Durham to implement the four SPPs including, updating relevant policies, schedules and definitions to include SPP boundaries, intake protection zones, significant groundwater recharge areas, and highly vulnerable aquifers, adding updated WHPA boundaries, and including a policy to require salt management plans, where applicable.

Intake Protection Zones (IPZs)

An Intake Protection Zone is the area on the water and land surrounding a municipal surface water intake. The size of each Zone is determined by how quickly water flows to the intake, in hours. Because surface water travels much faster than groundwater, the IPZ is drawn primarily for emergency response purposes. There are three categories of IPZs; the IPZ-1 is a one-kilometre circle around the intake if it is located in one of the Great Lakes; the IPZ-2 is the area where water can reach the intake in a specified time, two hours was used in the CTC. An IPZ-3 is delineated if modelling demonstrates that spills from a specific activity that is located outside IPZ-1 and IPZ-2 may be transported to an intake and result in the deterioration of the water quality at an intake.

Wellhead Protection Area (WHPA)

The surface and subsurface area surrounding a water well or well field that supplies a municipal residential system, or other designated system, through which contaminants are reasonably likely to move so as to eventually reach the water well or well.

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Excerpt from Current
Durham Regional
Official Plan

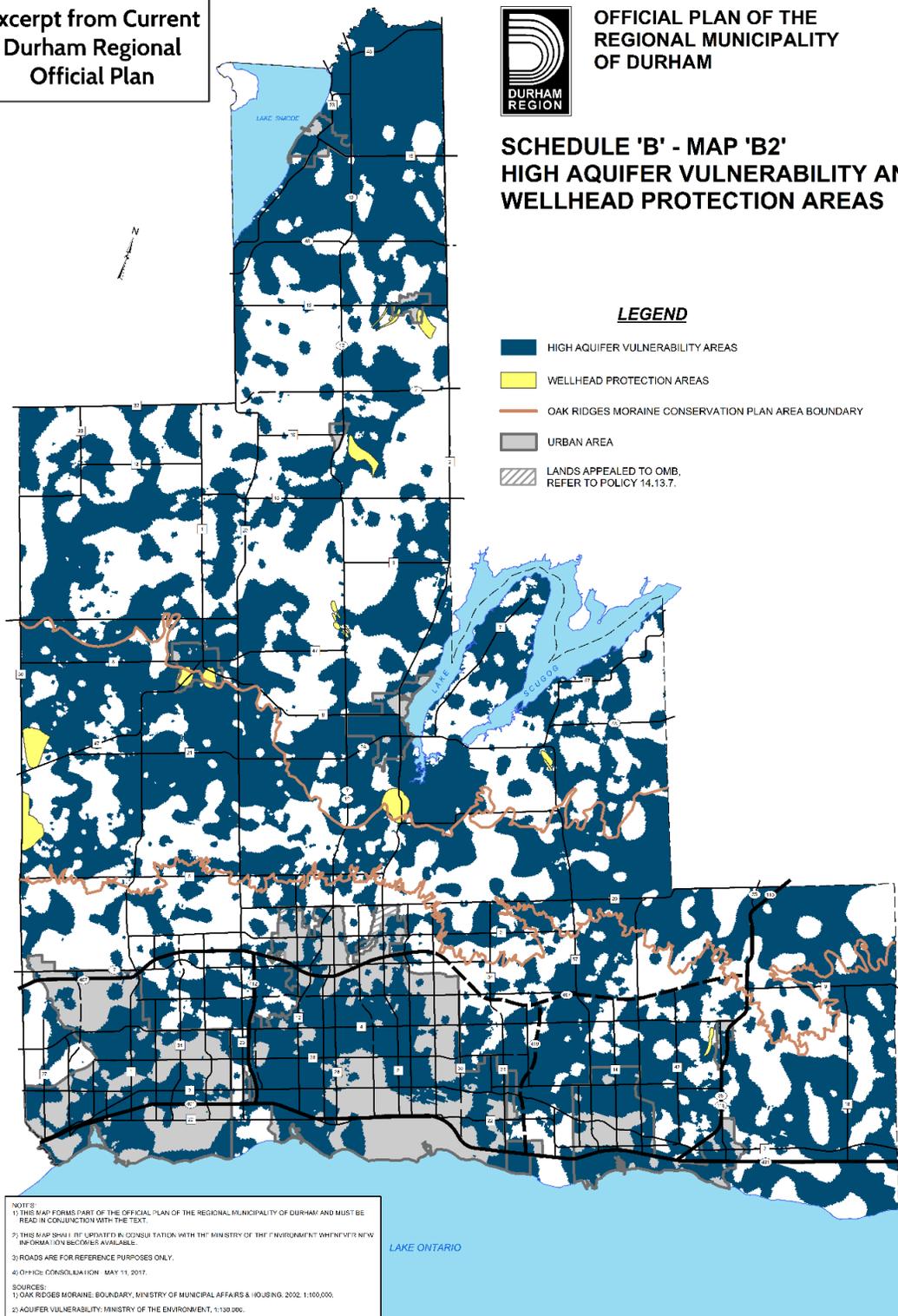


OFFICIAL PLAN OF THE
REGIONAL MUNICIPALITY
OF DURHAM

SCHEDULE 'B' - MAP 'B2' HIGH AQUIFER VULNERABILITY AND WELLHEAD PROTECTION AREAS

LEGEND

- HIGH AQUIFER VULNERABILITY AREAS
- WELLHEAD PROTECTION AREAS
- OAK RIDGES MORaine CONSERVATION PLAN AREA BOUNDARY
- URBAN AREA
- LANDS APPEALED TO OMB, REFER TO POLICY 14.13.7.



NOTES:
1) THIS MAP FORMS PART OF THE OFFICIAL PLAN OF THE REGIONAL MUNICIPALITY OF DURHAM AND MUST BE READ IN CONJUNCTION WITH THE TEXT.
2) THIS MAP SHALL BE UPDATED IN CONSULTATION WITH THE MINISTRY OF THE ENVIRONMENT WHEN NEW INFORMATION BECOMES AVAILABLE.
3) ROADS ARE FOR REFERENCE PURPOSES ONLY.
4) OFFICE CONSOLIDATION: MAY 11, 2011.
SOURCES:
1) OAK RIDGES MORaine BOUNDARY, MINISTRY OF MUNICIPAL AFFAIRS & HOUSING, 2002, 1:100,000.
2) AQUIFER VULNERABILITY, MINISTRY OF THE ENVIRONMENT, 1:100,000.

Figure 37: Region of Durham’s existing Schedule “B” – Map “B2” – High Aquifer Vulnerability and Wellhead Protection Areas.

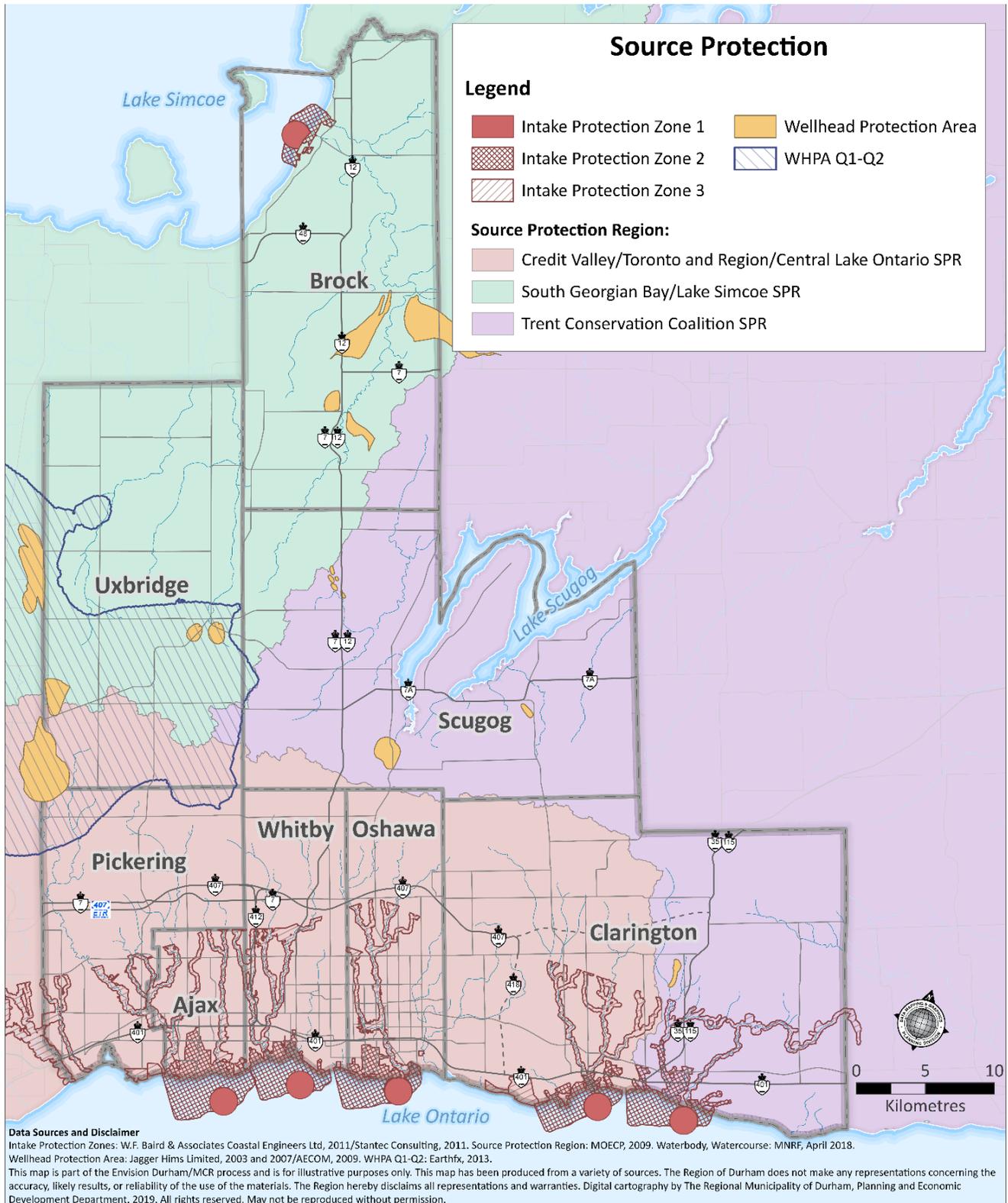


Figure 38: Source protection areas by region within the Region of Durham.

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6.7 Natural hazards



Figure 39: Preparations for flooding along the Lake Ontario shoreline in 2019. (Source: Municipality of Clarington).

Natural hazards are those lands exhibiting unstable or organic soils, poor drainage, steep slopes, flood, erosion or landslide susceptibility or any other physical conditions that would create risk to life and property or damage to the environment. They are primarily located in the Greenlands System. Hazard lands are often associated with various natural features (such as watercourses and valleylands).

Conservation authorities have provincially delegated responsibilities to represent provincial interests regarding natural hazards under the PPS and through the Conservation Authorities Act. They do this through regulating development and activities in or adjacent to river or stream valleys, lakes, hazardous lands and wetlands. These areas are within their “regulation limit” and often permits are required for projects in these areas. Additionally, CAs conduct monitoring activities, floodplain mapping, as well as undertake projects to reduce the risk of natural hazards.

The PPS requires that development be directed away from areas of natural or human-made hazards where there is an unacceptable risk to public health or safety or of property damage. Development also cannot create new hazards or aggravate existing ones.

The PPS states that development shall generally be directed to areas outside of:

- Hazardous lands adjacent to the shorelines of the Great Lakes and large inland lakes, which are impacted by flooding hazards, erosion hazards and/or dynamic beach hazards.
- Hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.
- Hazardous sites.

Development shall not be permitted to locate in hazardous lands and hazardous sites where:

- The use is institutional (such as hospitals, long-term care/retirement homes, preschools, school nurseries, day cares and schools).
- It’s an essential emergency service (such as fire, police and ambulance stations).
- The use is an electrical substation.
- The use is associated with the disposal, manufacture, treatment or storage of hazardous substances

Development and site alteration is prohibited within:

- The dynamic beach hazard.
- Defined portions of the flooding hazard along connecting channels (the St. Marys, St. Clair, Detroit, Niagara, and St. Lawrence rivers).
- Areas that would be rendered inaccessible to people and vehicles during times of flooding hazards, erosion hazards and/or dynamic beach hazards, unless it has been demonstrated that the site has safe access appropriate for the nature of the development and the natural hazard.
- A floodway, regardless of whether the area of inundation contains high points of land not subject to flooding.

Notwithstanding the above, development and site alteration may be permitted in certain areas associated with natural hazards, in cases where:

- The effects and risk to public safety are minor, could be mitigated in accordance with provincial standards.
- Development and site alteration is carried out in accordance with floodproofing standards, protection works standards, and access standards.
- Vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies.

- New hazards are not created and existing hazards are not aggravated.
- No adverse environmental impacts will result.

Other exceptions include instances where the development is limited to uses which - by their nature - must locate within the floodway. This includes flood and/or erosion control works or minor additions or passive non-structural uses which do not affect flood flows.

Finally, there are exceptional situations where a Special Policy Area has been approved. The designation of a Special Policy Area, - and any change or modification to the official plan policies, land use designations or boundaries applying to Special Policy Area lands, must be approved by the Ministers of Municipal Affairs and Housing and Natural Resources and Forestry prior to the approval authority approving such changes or modifications. Special Policy Areas related to natural hazards are designated at the local level in area municipal official plans and secondary plans.

PPS policies related to natural hazards are currently under review by the Province of Ontario's Special Advisor on flooding.

Through Envision Durham, the Region will revise natural hazard policies in the ROP including, updating definitions in accordance with revised provincial policy, by adding policy related to climate change and natural hazards, and to address forest fire hazards

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Dynamic beach hazard: means areas of inherently unstable accumulations of shoreline sediments along the Great Lakes - St. Lawrence River System and large inland lakes, as identified by provincial standards, as amended from time to time. The dynamic beach hazard limit consists of the flooding hazard limit plus a dynamic beach allowance. (Source: PPS)

Erosion hazard: means the loss of land, due to human or natural processes, that poses a threat to life and property. The erosion hazard limit is determined using considerations that include the 100 year erosion rate (the average annual rate of recession extended over an one hundred year time span), an allowance for slope stability, and an erosion/erosion access allowance. (Source: PPS)

6.7.1 Wildland Fire Hazards

After flooding, wildland fires are the second most frequent type of reported natural disaster in Canada.

The PPS includes a new requirement that development be directed outside of areas considered unsafe, due to the presence of hazardous forest types for wildland fire, unless mitigation measures are implemented.

Hazardous forest types for wildland fire means forest types assessed as being associated with the risk of high to extreme wildland fire using risk assessment tools established by the Ontario Ministry of Natural Resources, as amended from time to time.

In 2017, the Province of Ontario released the Wildland Fire Risk Assessment and Mitigation Reference Manual. This recommends official plans include policies that recognize wildland fire hazards as risks to public health and safety, and as hazards that should be avoided.

Areas of potential hazardous forest types for wildland fire are shown in Figure 40 on page 80.

Wildlife fire assessment and mitigation standards: means the combination of risk assessment tools and environmentally appropriate mitigation measures identified by the Ontario Ministry of Natural Resources and Forestry to be incorporated into the design, construction and/or modification of buildings, structures, properties and/or communities to reduce the risk to public safety, infrastructure and property from wildland fire.

Implementation and mitigation may be more appropriately administered at the area municipal level. Woodlands are generally part of the natural heritage system and would therefore in many cases be subject to an EIS in cases where development is proposed within proximity to these areas.

Through Envision Durham, the Region will be adding the applicable policy for conformity with the PPS and considering whether to include mapping and/or a requirement for consideration of forest fire hazards, as part of the preparation of environmental impact studies, where applicable.

Discussion Question:

How should the ROP address the issue of wildland fire hazards?

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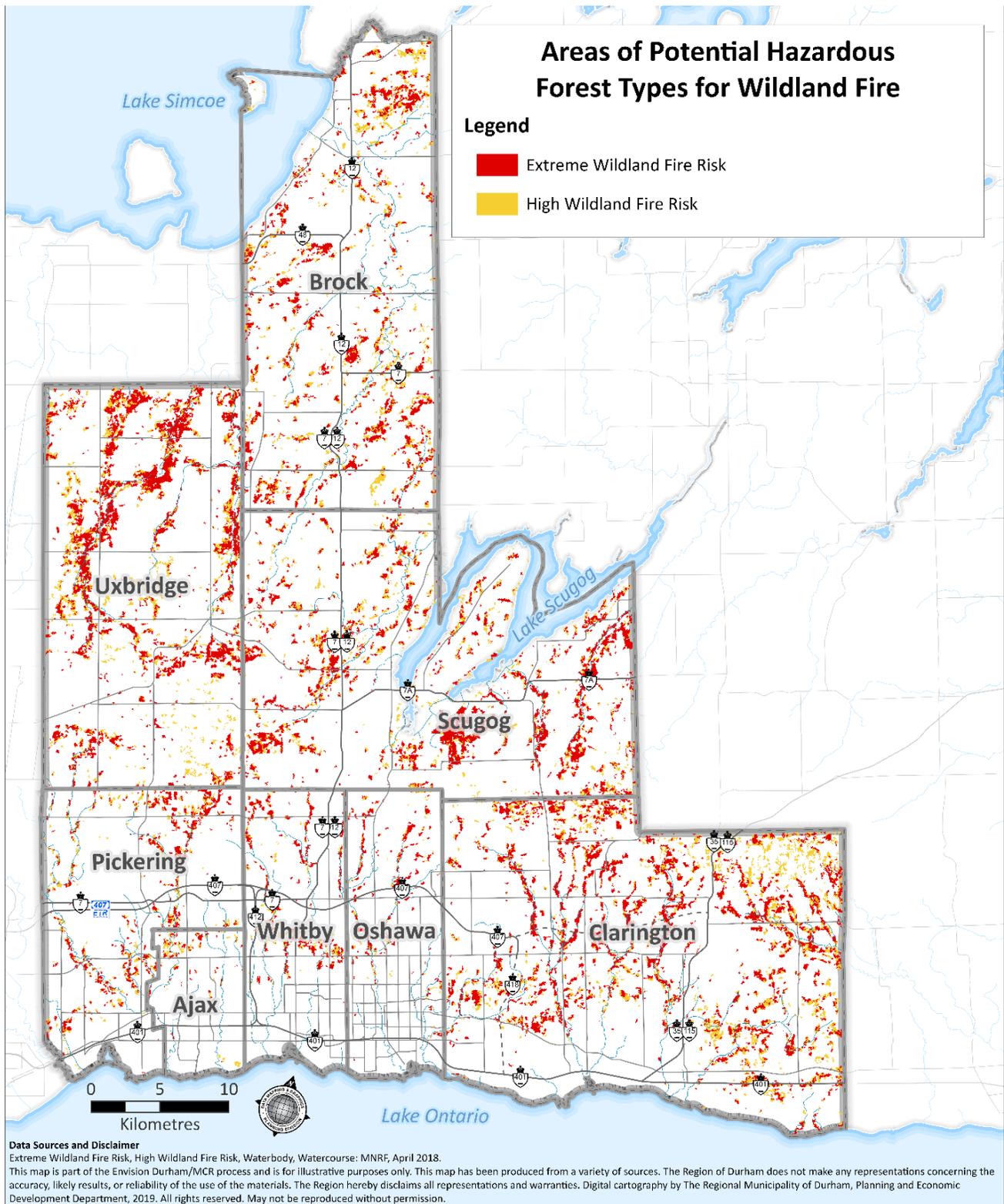


Figure 40: Areas of Potential Hazardous Forest Types for Wildland Fire in the Region of Durham.

6.8 Waste

The PPS requires that official plans support conservation efforts, including waste reduction, composting, and recycling. In addition, the PPS requires that Waste Management Systems be provided that are of an appropriate size and type to accommodate present and future requirements, and facilitate, encourage and promote reduction, reuse and recycling objectives.

The ROP contains policies that encourages the reduction, re-use and recycling of waste. In addition, the establishment of new landfill sites, expansion, or capacity increases for existing landfills requires an amendment to the ROP. Such requirements do not currently extend to such uses as transfer stations, or recycling facilities.

In the consideration of development applications for landfill sites, the following matters are to be considered:

- The principle of reduction, re-use and recycling of waste.
- Alternative solutions for waste disposal.
- The impact of the proposal on the environment.
- The health of surrounding residents, the Transportation System and existing and future surrounding land uses.
- Financial implications to the Region.

The Region supports provincial initiatives to identify active and former domestic and industrial landfill sites, to determine the health risks associated with such sites and to establish decommissioning programs.

Area municipal official plans are required to identify all such known sites for information purposes only, and establish appropriate policies dealing with lands in the vicinity, taking into consideration decommissioning considerations and the designations in this Plan. Accordingly, some area municipalities have undertaken studies of former landfill sites.

Though Envision Durham, the Region will be reviewing and updating waste policies, as appropriate.

6.9 Cultural heritage and archaeological resources

The PPS and provincial plans requires the protection and conservation of the cultural heritage landscape and resources.

The ROP encourages the conservation, protection, and enhancement of Durham's built and cultural heritage resources.

Area municipalities are encouraged to utilize the Ontario Heritage Act to conserve, protect and enhance the built and cultural heritage resources of the municipality; to establish Municipal Heritage Committees to consult regarding matters relating to built and cultural heritage resources planning; and the designation of heritage conservation districts and properties as provided for in the Ontario Heritage Act.

Cultural heritage is generally dealt with by the area municipalities. The Region of Durham is focused on the protection of archaeological resources through development applications.

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Cultural heritage can generally be categorized into built heritage resources (such as historical homes) and cultural heritage landscapes which include views and vistas that should be preserved. In addition to these cultural heritage resources, physical archaeological artifacts must also be preserved.

Recent updates to the PPS require municipalities to work with stakeholders, as well as First Nations and Métis communities, in developing and implementing official plan policies and strategies for the identification, wise use and management of cultural heritage resources. Further, municipalities are encouraged to prepare archaeological management plans and municipal cultural plans and consider them in their decision-making.

The Region of Durham has a rich cultural heritage, with archaeological resources dating back 13,000 years ago.

Artifacts have been found in Durham Region from 13 periods in time. They date, from the Paleo-Indian Period (9,000 B.C. to 7,000 B.C.) to the Colonial Period (1700 to present).

It is important for the Region to protect these resources, as they are the physical remains of our history.

Archaeological resources are defined in the PPS as including artifacts, archaeological sites, and marine archaeological sites, as defined under the Ontario Heritage Act. The identification and evaluation of archaeological resources are based upon

fieldwork undertaken in accordance with the Ontario Heritage Act.

The Region requires an archaeological assessment to be completed for development or site alteration applications that may contain archaeological resources.

The PPS includes policies directing planning authorities to consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources, as well as considers the interests of Indigenous communities in conserving cultural heritage and archaeological resources. Areas of archaeological potential are largely comprised of sites along waterbodies.

The potential for archaeological resources is identified using the Region's Archaeological Potential Model, which was created by a consultant group using the area's history and the Ministry of Tourism, Culture and Sport (MTCS) evaluation criteria. Every development application the Region receives is screened for archaeological potential to determine whether further study is required.

When archaeological potential is triggered, the appropriate studies are required to be completed by a licensed archaeologist to determine if the lands have undiscovered resources. These studies must be completed and sent to the MTCS for their sign-off prior to the Region allowing any grading or soil disruption on a development parcel.

The Region does not currently map archaeological resources in the ROP. This is to ensure that known archaeological resources are protected; and other areas of

interest are not prematurely destroyed, prior to the completion of appropriate studies and work being completed through the development process. The Region does not propose to add archaeological resource mapping through Envision Durham. However, it may consider the inclusion of a policy that would enable the Region to undertake the development of an archaeological management plan.

Envision Durham will review the ROP's current cultural heritage and archaeological resource policies for conformity with provincial policy; and determine if additional changes or refinements are necessary.

Lynde Creek indigenous settlement model



Figure 41: Replica of an archaeological site (Joseph Picard Site) found through the excavations for Highway 407 on the shores of the Lynde Creek in Whitby. (Source: ASI and the Town of Whitby)

The Joseph Picard Settlement (replica depicted above) was found when excavating for the development of Highway 407, along the shores of Lynde Creek in Whitby. The location was an ancestral site of the Huron-Wendat village; a confederacy of five Iroquoian-speaking nations who lived in the area between Lake Simcoe and Georgian Bay. This site was believed to be inhabited from approximately 1350 to 1400 A.D. (therefore, is approximately 650 years old).

When the site was unearthed, archaeologists worked to catalogue and document 10 longhouses, which would have housed six to eight families in one long house, plus, tens of thousands of artifacts, including pottery, stone tools, stone beads and smoking pipes.

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6.10 Protection of environmental lands

The long-term protection of "green" elements of the Region can occur effectively through a range of tools such as, stewardship, and land acquisition by easement, donation or purchase. Planning policy can enable these tools.

6.10.1 Land securement

Conservation authorities, area municipalities, and many non-government organizations, have taken steps to protect and preserve a natural environment legacy through land securement.

The ROP currently supports the use of various land securement tools as a means of protecting and enhancing the Region's natural environment, and currently focuses potential for land securement for conservation purposes to the following areas:

- Key natural heritage and hydrologic features and hazard lands.
- Establishment of a regional trail network.
- Damaged or degraded areas.
- Nature and immediacy of threats to an area.
- Proximity of an area to property in public ownership.
- The cost of purchase.
- Long-term management of an area.

The policy also allows for other considerations not explicitly listed in the policy, which were identified in the Council approved Land Securement Strategy. There is, however, the possibility that planning policies may change over time. For this

reason, land securement also includes stewardship and acquisition.

6.10.2 Land acquisition

Acquisition of land in appropriate locations — by municipalities or conservation authorities — for natural heritage conservation purposes is supported by the ROP.

The Region and its area municipalities may acquire land to implement any feature of the ROP, through Council direction. The ROP currently contains policies that specify who can acquire land, and for what purpose they can acquire it (such as for conservation purposes, public agencies, utility providers etc.). A severance to secure valued greenspace for natural heritage conservation purposes may be permitted — to adjust a property boundary or create a new lot — provided that the severed parcel is zoned to permit only natural heritage conservation uses, subject to any relevant provincial plan.

In 2007, Regional Council approved the Durham Region Land Acquisition Funding Policy for Conservation Authorities. This program, which still exists today, created a Land Conservation and Protection Reserve Fund for land acquisition projects undertaken by the five conservation authorities.

This program established a consistent, focused and transparent set of criteria for the Region to follow when participating in Conservation Authority Land Acquisitions. The funding program was designed to encourage agencies to work together when acquiring land, as the Regional funding is not to be more than 40 per cent of the total

direct cost of the land acquisition. As part of the decision-making process, the Region and the conservation authorities also analyze the operational and maintenance costs associated with acquiring lands over the long term.

Discussion Question:

What should the Region’s role be in the protection of land for environmental purposes and how can the ROP provide further policy support for this?

Conservation Lands Master Plan Study



Figure 42: Photo of a swamp in Heber Down Conservation Area in the Town of Whitby. (Source: CLOCA).

CLOCA owns and manages over 2,700 hectares of environmentally sensitive land within their jurisdiction. These lands are referred to as conservation areas. With population growth in the community, the demand for our greenspace, trails and nature appreciation has increased significantly.

In response, CLOCA staff have initiated a Conservation Lands Master Plan Study to ensure these public lands continue to meet our original intention to conserve natural features and functions, while providing for compatible, high quality visitor experiences that meet the needs of the community. This Master Plan involves a conservation area lands assessment and consultation with the public and stakeholders.

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6.11 Environmental Impact Studies (EIS)

An Environmental Impact Study (EIS) is a technical report prepared by an environmental expert in support of a development application and provides:

- A baseline inventory of environmental features and functions.
- An analysis/forecast and assessment of potential environmental effects of the proposed development related to Regional and provincial policy.
- Identifies areas to be preserved and any mitigation measures required to address impacts of the proposed development on environmental features and functions.

The ROP uses the term EIS to address a natural heritage evaluation and hydrological evaluation. The ROP requires an EIS for any proposal for:

- Development or site alteration in proximity to a key natural heritage or hydrologic features.
- Aggregate resource extraction.
- Development applications located within the Oak Ridges Moraine.

Additional ROP policies also enable the use of an EIS to determine the location and extent of a key natural heritage and/or hydrologic features and identify the vegetative protective zone of a key natural heritage/hydrologic feature. The EIS should also identify any additional restrictions to be applied before, during, and after development, in order to protect the

hydrologic and ecological functions of the feature.

EISs are further addressed through Durham's EIS Guideline. This guideline was developed in consultation with the conservation authorities and area municipalities. It was adopted by Regional Council in 1999 and was last updated in 2001.

Through Envision Durham, the Region will review policies pertaining to the requirement of EISs, while ensuring conformity with the PPS and provincial plans, as well as considering the need for review and update of the Region's EIS guidelines.

Discussion Question:

Are there any additional considerations or best practices that the Region should be considering when updating the Region's EIS policies?

6.12 Land use compatibility

Land use compatibility is a term that refers to minimizing adverse effects on a community that could be caused by industrial, transportation, or other land uses that may emit noise, odour and/or air pollution proximal to sensitive land uses. Sensitive land uses include residential, institutional, parkland and agricultural uses.

Land use compatibility is assessed through development applications, particularly when considering Official Plan or Zoning By-law amendments. Assessment is typically undertaken using the province's guidelines — D-6 Compatibility between Industrial

Facilities. This document classifies industrial uses based on factors such as: type of production, emissions and traffic, with an associated minimum separation distance from sensitive uses.

As the Region continues to intensify and redevelop, land use compatibility is an important development issue that will remain at the forefront. The ROP includes general policies that ensure informed decision-making regarding land use compatibility and is addressed using the Provincial Land Use Compatibility Guidelines, as well as the Environmental Protection Act.

Development within the Region must consider matters including: aesthetics; sources of noxious or hazardous substances; noise, odour, dust, and light pollution; and reduction of energy consumption.

Discussion Question:

Are there any other land use compatibility issues the Region should be considering through Envision Durham?

6.13 Site contamination

Contaminated sites are those where past land use activities have resulted in soil and/or groundwater contamination. Contaminated sites pose a health threat that should be assessed and remediated as necessary.

The PPS requires contaminated sites to be restored prior to any activity occurring on a site such that there will be no adverse effects to human health or the environment.

Current policies in the ROP direct Regional Council and area municipalities to ensure that contaminated sites are decommissioned — in accordance with the provincial legislation — prior to redeveloping a site. It also directs the area municipalities to contain policies in their official plans to outline the process for redevelopment in areas where soil contamination is known or suspected.

In addition, Complete Application Requirements within the ROP identifies that site contamination reports, including a Phase One and Two Environmental Site Assessment and/or the receipt of a Record of Site Condition from the MECP, may be required for any Planning Act application to be reviewed and/or accepted by the Region. The remediation and redevelopment of contaminated sites through various programs and initiatives is supported.

The current Regional Site Contamination Protocol was last updated in 2014. Prior to any development being undertaken within the region, the approval authority (the Region or the area municipality) must identify the soil and groundwater conditions of a property.

The soil quality for more sensitive land uses (such as residential and institutional) is held to a higher standard than for less sensitive land uses (such as industrial and commercial). However, even for non-residential development proposals, the Region must consider the site conditions before approvals are given. A review of the

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current protocol is currently underway as a separate initiative.⁷

6.14 Noise

Noise can be generated from a variety of sources, which have the potential to disrupt the environment and residents if not mitigated appropriately. There are four general categories of noise sources: road, rail, aircraft and stationary sources. In 2013, the Province of Ontario released updated guidelines (NPC-300) to address the proper control of sources of noise emissions to the environment; providing guidance for the preparation of noise studies for new development.

The ROP requires, as part of the Complete Application Requirements, that a noise study be completed any time development is proposed within 300 metres of an arterial road. Additionally, the ROP directs that comments be considered from the appropriate authorities in approving developments in proximity to railways, airports, freeways and industries (with respect to noise, vibration and possible hazards associated with such facilities). The Regional Planning Division is responsible for the review of these studies.

Through Envision Durham, current ROP policies regarding noise studies will be reviewed to ensure that they are current and continue to reflect the Region's goals.

6.15 Light pollution

The ROP encourages light pollution abatement measures to avoid and reduce light trespass, glare, over-lighting and uplighting. The intent is to reduce adverse impacts from lighting on natural areas and wildlife; protect the night sky for its scientific and natural interest, and educational value; as well as, to conserve energy; reduce impacts on neighbouring properties; and improve pedestrian and road safety. Accordingly, outdoor lighting is also to be directed away from key natural heritage and/or hydrologic features and their associated vegetative protection zones.

Furthermore, the ROP encourages area municipalities to include outdoor lighting policies for new developments in their official plans, by-laws, or site-plan control guidelines. Many area municipalities have adopted such policies and guidelines that speak to full cut-off lighting techniques, or elimination of architectural uplighting to support "dark sky" objectives.

Through Envision Durham, the Region will review the ROP's policies pertaining to light pollution.

6.16 Environmental Assessments

An Environmental Assessment (EA) is a decision-making process used by both the government and private sector to analyze the potential effects of certain activities on the natural and human environment.

⁷ See Commissioner's Report #2019-P-15 for further detail of the review.

In Ontario, this process is legislated by the Environmental Assessment Act and its regulations. The purpose of this act is to provide for the protection, conservation and wise management of Ontario's environment. It is intended to minimize or avoid adverse environmental effects before they occur and incorporate environmental factors into decision making.

The ROP includes policies that require new and expanding infrastructure and transportation projects to complete an EA in accordance with the Environmental Assessment Act.

Recently, the Province of Ontario has amended the Environmental Assessment Act in an attempt to streamline the process. This would allow projects that have the potential to cause minimal adverse environmental effects and are primarily operational, and maintenance related to be exempt from completing an EA.

Through Envision Durham, the Region will be reviewing policies in the ROP regarding EAs.

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7.0 Next steps

This Discussion Paper is the fourth in a series of papers being released over the course of 2019. These discussion papers provide an overview and background on theme-based land-use planning matters; and pose various questions in order to gather opinions to help shape future policy.

Your feedback is important to us. The Regional Planning Division appreciates your interest and encourages your participation throughout the Envision Durham process. To submit your comments, please visit durham.ca/EnvisionDurham.

Following the release of these discussion papers, interested parties will also have opportunities to provide feedback on theme-based policy proposals, and a future draft of the Regional Official Plan.

To stay up-to-date on Envision Durham, please visit durham.ca/EnvisionDurham, and subscribe to receive email updates.

Discussion Question:

Have we missed any trends that you feel should be reviewed and considered in the environment/Greenlands System context as part of Envision Durham?

Appendix A: Discussion questions workbook

Discussion questions are posed throughout the Environment & Greenlands System Discussion Paper. We are interested in hearing from you on these topics or any others that are important to you but have not been addressed. The following is a summary of the questions contained within this discussion paper:

1. **Are the current goals for the Environment and Greenlands System still relevant/appropriate? (Page 19)**

2. **How can the ROP be revised to further help address the issue of invasive species? (Page 33)**

3. **How can the Region best effectively support local implementation of excess soil policies? (Page 35)**

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4. Should the Region include policies in the ROP restricting or limiting the land application of septage? (Page 36)

5. Should policies regarding ecosystem compensation and valuation be included in the ROP through Envision Durham? If so, are there examples of best practices? (Page 38)

6. How can the ROP support the consideration of Traditional Ecological Knowledge in land-use decisions? (Page 39)

7. How can the ROP better support environmental stewardship efforts in Durham? What are other examples of best practices? (Page 40)

8. Are there additional factors the Region should take into account when re-considering the Major Open Space Areas designation? (Page 42)

9. Do you feel that a separate Tourist Activity/Recreational Node designation is necessary in the ROP? If so, do you feel the policies should be enhanced or revised? (Page 44)

10. Should Open Space Linkages and Waterfront Links continue to be identified in the ROP? If so, what additional areas should be identified and how could the policies associated with these areas be enhanced? (Page 45)

11. How can the Region best support the protection and enhancement of significant woodlands in Durham? (Page 54)

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12. Should there be targets included in the ROP for other natural heritage and hydrologic features in addition to woodlands? (Page 54)

13. Should the Region include more detailed policies prescribing minimum vegetation protection zones (where they are not otherwise prescribed by provincial policy)? (Page 59)

14. Recognizing the two-tier municipal system, how should the Region best protect the natural heritage system, features, and areas in the ROP (Overlay, designation, level of detail)? (Page 62)

15. How should the ROP address the issue of wildland fire hazards? (Page 80)

16. What should the Region’s role be in the protection of land for environmental purposes and how can the ROP provide further policy support for this? (Page 86)

17. Are there any additional considerations or best practices that the Region should be considering when updating the Region’s EIS policies? (Page 87)

18. Are there any other land use compatibility issues the Region should be considering through Envision Durham? (Page 88)

19. Have we missed any trends that you feel should be reviewed and considered in the environment/Greenlands System context as part of Envision Durham? (Page 91)

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Appendix B: Glossary

Access standards: means methods or procedures to ensure safe vehicular and pedestrian movement, and access for the maintenance and repair of protection works, during times of flooding hazards, erosion hazards and/or other water-related hazards (PPS, 2014).

Adjacent lands: means

- For the purposes of policy 1.6.8.3 (in the PPS), those lands contiguous to existing or planned corridors and transportation facilities where development would have a negative impact on the corridor or facility. The extent of the adjacent lands may be recommended in guidelines developed by the Province or based on municipal approaches that achieve the same objectives;
- For the purposes of policy 2.1.8 (in the PPS), those lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or core. The extent of the adjacent lands may be recommended by the Province or based on municipal approaches which achieve the same objectives;
- For the purposes of policy 2.4.2.2 and 2.5.2.5 (in the PPS), those lands contiguous to lands on the surface of known petroleum resources, mineral deposits, or deposits of mineral aggregate resources where it is likely that development would constrain future access to the resources. The extent of the

adjacent lands may be recommended by the Province; and

- For the purposes of policy 2.6.3 (in the PPS), those lands contiguous to a protected heritage property or as otherwise defined in the municipal official plan (PPS, 2014).

Adverse effects as defined in the Environmental Protection Act, means one or more of:

- a) Impairment of the quality of the natural environment for any use that can be made of it;
- b) Injury or damage to property or plant or animal life;
- c) Harm or material discomfort to any person;
- d) An adverse effect on the health of any person;
- e) Impairment of the safety of any person;
- f) Rendering any property or plant or animal life unfit for human use;
- g) Loss of enjoyment of normal use of a property; and
- h) Interference with the normal conduct of business (PPS, 2014).

Agricultural uses: means the growing of crops, including nursery, biomass, and horticultural crops; raising of livestock; raising of other animals for food, fur or fibre, including poultry and fish; aquaculture; apiaries; agro-forestry; horse riding and boarding stables; sod farms; maple syrup production; and associated on-farm buildings and structures, including, but not limited to livestock facilities, manure storages, value-retaining facilities, and accommodation for full-time farm labour when the size and

nature of the operation requires additional employment (PPS, 2014).

Agriculture-related uses: means those farms related commercial and farm-related industrial uses that are directly related to the farm operations in the area, support agriculture, benefit from being in close proximity to farm operations, and provide direct products and/or services to farm operations as a primary activity (PPS, 2014).

Alvars: means naturally open areas of thin or no soil over essentially flat limestone, dolostone or marble rock, supporting a sparse vegetation cover of mostly shrubs and herbs (Greenbelt Plan, 2017).

Archaeological resources: includes artifacts, archaeological sites, marine archaeological sites, as defined under the Ontario Heritage Act. The identification and evaluation of such resources are based upon archaeological fieldwork undertaken in accordance with the Ontario Heritage Act (PPS, 2014).

Areas of archaeological potential: means areas with the likelihood to contain archaeological resources. Methods to identify archaeological potential are established by the Province, but municipal approaches which achieve the same objectives may also be used. The Ontario Heritage Act requires archaeological potential to be confirmed through archaeological fieldwork (PPS, 2014).

Area of high aquifer vulnerability: on the Oak Ridges Moraine, means an area of high aquifer vulnerability as prescribed in the Oak Ridges Moraine Conservation Plan. Elsewhere, means lands whose uppermost aquifer is most vulnerable to contamination

as a result of surface activities or sources, due to the thickness and permeability of the rock and soil above the aquifer. Vulnerability is expressed as an intrinsic susceptibility index calculated using methods established by the Ministry of the Environment, Conservation and Parks. Lands with an index value of less than 30 are considered to be of high vulnerability (ORMCP, 2017).

Area of Natural and Scientific Interest: means areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education (ORMCP, 2017).

Built heritage resource: means a building, structure, monument, installation or manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Aboriginal community. Built heritage resources are generally located on property that has been designated under Parts IV or V of the Ontario Heritage Act, or included on local, provincial, and/or federal registers (PPS, 2014).

Coastal wetland: means

- Any wetland that is located on one of the Great Lakes or their connecting channels (Lake St. Clair, St. Marys, Detroit, Niagara and St. Lawrence Rivers); or
- Any other wetland that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located two kilometres upstream of the 1:100 year floodline (plus wave run-up) of the large

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water body to which the tributary is connected (PPS, 2014).

Cultural heritage landscape: means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including Aboriginal community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Examples may include, but are not limited to, heritage conservation districts, designated under the Ontario Heritage Act; villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways, viewsheds, natural areas and industrial complexes of heritage significance; and areas recognized by federal or international designation authorities (e.g. a National Historic Site or District designation, or a UNESCO World Heritage Site) (PPS, 2014).

Cultural heritage resources: means built heritage resources, cultural heritage landscapes and archaeological resources that have been determined to have cultural heritage value or interest for the important contribution they make to our understanding of the history of a place, an event, or a people. While some cultural heritage resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation (A Place to Grow, 2019).

Defined portions of the flooding hazard along connecting channels: means those areas which are critical to the conveyance of the flows associated with the one hundred

year flood level along the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers, where development or site alteration will create flooding hazards, cause updrift and/or downdrift impacts and/or cause adverse environmental impacts (PPS, 2014).

Deposits of mineral aggregate resources: means an area of identified mineral aggregate resources, as delineated in Aggregate Resource Inventory Papers or comprehensive studies prepared using evaluation procedures established by the Province for surficial and bedrock resources, as amended from time to time, that has a sufficient quantity and quality to warrant present or future extraction (PPS, 2014).

Development: means the creation of a new lot, a change in land use, or the construction of buildings and structures, any of which require approval under the Planning Act, or that are subject to the Environmental Assessment Act, but does not include:

- a) Activities that create or maintain infrastructure authorized under an environmental assessment process;
- b) Works that are subject to the Drainage Act; and
- c) The carrying out of agricultural practices on land that continues to be used for agriculture uses (A Place to Grow, 2019).

Dynamic beach hazard: means areas of inherently unstable accumulations of shoreline sediments along the Great Lakes – St. Lawrence River System and large inland lakes, as identified by provincial standards, as amended from time to time. The dynamic beach hazard limit consists of the flooding

hazard limit plus dynamic beach allowance (PPS, 2014).

Earth science values: means values that relate to the geological, soil and landform features of the environment (ORMCP, 2017).

Ecological features: means naturally occurring land, water and biotic features that contribute to ecological integrity (ORMCP, 2017).

Ecological function: means the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrologic functions and biological, physical, chemical and socio-economic interactions (ORMCP, 2017).

Ecological integrity: which includes hydrological integrity, means the condition of ecosystems in which:

- a) The structure, composition and function of the ecosystems are unimpaired by the stresses from human activity;
- b) Natural ecological processes are intact and self-sustaining; and
- c) The ecosystems evolve naturally (Greenbelt Plan, 2017).

Ecological value: means the value of vegetation in maintaining the health of the key natural heritage feature or key hydrologic feature and the related ecological features and ecological functions, as measured by factors such as the diversity of species, the diversity of habitats, and the suitability and amount of habitats that are available for

rare, threatened and endangered species (A Place to Grow, 2019).

Endangered species: means a species that is classified as an endangered species in Ontario Regulation 230/08 (Species at Risk in Ontario List) made under the Endangered Species Act, 2007, as it may be amended from time to time (PPS, 2014).

Fish: means fish, which is defined in the Fisheries Act, includes fish, shellfish, crustaceans, and marine animals, at all stages of their life cycles (PPS, 2014).

Fish habitat: means, as defined in the Fisheries Act, spawning grounds and any other areas, including nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes (Greenbelt Plan, 2017).

Flooding hazard: means the inundation, under the conditions specified below, of areas adjacent to a shoreline or a river or stream system and not ordinarily covered by water:

- a) Along the shorelines of the Great Lakes – St. Lawrence River System and large inland lakes, the flooding hazard limit is based on the one hundred year flood level plus an allowance for wave uprush and other water-related hazards;
- b) Along river, stream and small inland lake systems, the flooding hazard limit is the greater of:
- c) The flood resulting from the rainfall actually experienced during a major storm such as the Hurricane Hazel storm (1954) or the Timmins storm (1961),

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- transposed over a specific watershed and combined with the local conditions, where evidence suggests that the storm event could have potentially occurred over watersheds in the general area;
- d) The one hundred year flood; and
 - e) A flood which is greater than 1. or 2. which was actually experienced in a particular watershed or portion thereof as a result of ice jams and which has been approved as the standard for that specific area by the Minister of Natural Resources;
 - f) Except where the use of the one hundred year flood or the actually experienced event has been approved by the Minister of Natural Resources as the standard for a specific watershed (where the past history of flooding supports the lowering of the standards) (PPS, 2014).

Flood plain: for river, stream and small inland lake systems, means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazards (PPS, 2014).

Floodplain Special Policy Area: means an area within the community that has historically existed within the floodplain, and where site-specific policies, approved by the Province, are intended to provide for the continued viability of existing uses (which are generally on a small scale) and address the significant social and economic hardships to the community that would result from the strict adherence to provincial policies concerning development. The criteria and procedures for approval are established by the Province. A floodplain special policy area is not intended to allow for new or intensified development and site alteration, if

a community has feasible opportunities for development outside the floodplain (Durham Region Official Plan, 2017).

Floodproofing standard: means the combination of measures incorporated into the basic design and/or construction of buildings, structures, or properties to reduce or eliminate flooding hazards, wave uprush and other water-related hazards along the shorelines of the Great-Lakes – St. Lawrence River System and large inland lakes, and flooding hazards along river, stream and small inland lake systems (PPS, 2014).

Floodway: for river, stream and small inland lake systems, means the portion of the flood plain where development and site alteration would cause a danger to public health and safety or property damage. Where the one zone concept is applied, the floodway is the entire contiguous flood plain. Where the two zone concept is applied, the floodway is the contiguous inner portion of the flood plain, representing that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage. Where the two zone concept applies, the outer portion of the flood plain is called the flood fringe (PPS, 2014).

Forest management: means the management of woodlands, including accessory uses such as the construction and maintenance of forest access roads and maple syrup production facilities:

- a) For the production of wood and wood products, including maple syrup,

- b) To provide outdoor recreation opportunities,
- c) To maintain and, where possible, improve or restore conditions for wildlife, and
- d) To protect water supplies (ORMCP, 2017).

Greater Golden Horseshoe (GGH): means the geographic area identified as the Greater Golden Horseshoe growth plan area in Ontario Regulation 416/05 under the Places to Grow Act, 2005 (A Place to Grow, 2019).

Great Lakes-St. Lawrence River System: means the major water system consisting of Lakes Superior, Huron, St. Clair, Erie and Ontario and their connecting channels, and the St. Lawrence River within the boundaries of the Province of Ontario (PPS, 2014).

Green infrastructure: means natural and human-made elements that provide ecological and hydrological functions and processes. Green infrastructure can include components such as natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs (PPS, 2014).

Greenbelt Area: means the geographic area identified as the Greenbelt Area in Ontario Regulation 59/05 under the Greenbelt Act, 2005 (Greenbelt Plan, 2017).

Groundwater feature: means water-related features in the earth's subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface

hydrogeologic investigations (A Place to Grow, 2019).

Groundwater recharge: means the replenishment of subsurface water,

- a) Resulting from natural processes, such as the infiltration or rainfall and snowmelt and the seepage of surface water from lakes, streams and wetlands, and
- b) Resulting from human interventions, such as the use of stormwater management systems (ORMCP, 2017).

Habitat of endangered species and threatened species: means

- a) With respect to a species listed on the Species at Risk in Ontario List as an endangered or threatened species for which a regulation made under clause 55(1)(a) of the Endangered Species Act, 2007 is in force, the area prescribed by that regulation as the habitat of the species; or
- b) With respect to any other species listed on the Species at Risk in Ontario List as an endangered or threatened species, an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding, as approved by the Ontario Ministry of Natural Resources; and
- c) Places in the areas described in clause (a) or (b), whichever is applicable, that are used by members of the species as dens, nests, hibernacula or other residences (PPS, 2014).

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Hazardous forest types for wildland fire: means forest types assessed as being associated with the risk of high to extreme wildland fire using risk assessment tools established by the Ontario Ministry of Natural Resources, as amended from time to time (PPS, 2014).

Hazardous lands: means property or lands that could be unsafe for development due to naturally occurring processes. Along the shorelines of the Great Lakes – St. Lawrence River System, this means the land, including that covered by water, between the international boundary, where applicable, and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along the shorelines of large inland lakes, this means the land, including that covered by water, between a defined offshore distance or depth and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along river, stream and small inland lake systems, this means the land, including that covered by water, to the furthest landward limit of the flooding hazard or erosion hazard limits (PPS, 2014).

Hazardous sites: means property or lands that could be unsafe for development and site alteration due to naturally occurring hazards. These may include unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography) (PPS, 2014).

Hazardous substances: means substances which, individually, or in combination with other substances, are normally considered to pose a danger to public health, safety and the environment. These substances generally

include a wide array of materials that are toxic, ignitable, corrosive, reactive, radioactive or pathological (PPS, 2014).

Highly vulnerable aquifers: means aquifers, including lands above the aquifers, on which external sources have or are likely to have a significant adverse effect (Greenbelt Plan, 2017).

Hydrological features: means

- a) Permanent and intermittent streams,
- b) Wetlands,
- c) Kettle lakes and their surface catchment areas,
- d) Seepage areas and springs, and
- e) Aquifers and recharge areas (ORMCP, 2017).

Hydrologic functions: means the functions of the hydrological cycle that include the occurrence, circulation, distribution, and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things (PPS, 2014).

Hydrological integrity: means that condition of ecosystems in which hydrological features and hydrological functions are unimpaired by stresses from human activity (ORMCP, 2017).

Impervious surface: means a surface that does not permit the infiltration of water, such as a rooftop, sidewalk, paved roadway, driveway or parking lot (ORMCP, 2017).

Key hydrologic areas: means significant groundwater recharge areas, highly vulnerable aquifers, and significant surface

water contribution areas that are necessary for the ecological and hydrologic integrity of a watershed (Greenbelt Plan, 2017).

Key hydrologic features: means

- a) Permanent and intermittent streams;
- b) Wetlands;
- c) Lakes, and their littoral zones; and
- d) Seepage areas and springs (Greenbelt Plan, 2017).

Key natural heritage features: means

- a) Habitat of endangered and threatened species;
- b) Fish habitat;
- c) Wetlands;
- d) Areas of Natural and Scientific Interest (ANSIs), life science;
- e) Significant valleylands;
- f) Significant woodlands;
- g) Significant wildlife habitat (including habitat of special concern species);
- h) Sand barrens, savannahs and tallgrass prairies; and
- i) Alvars (Greenbelt Plan, 2017).

Lake: means any inland body of standing water, usually fresh water, larger than a pool or pond or a body of water filling a depression in the earth's surface (Greenbelt Plan, 2017).

Landfill site: means any land or building or structure in which waste is deposited or processed and any machinery or equipment or operation required for the treatment or disposal of waste (excluding waste transfer, recycling and composting facilities). For the purpose of this Plan, waste includes ashes, garbage, refuse, domestic waste, industrial

waste or municipal refuse and such other wastes as designated under the Environmental Protection Act (Durham Region Official Plan, 2017).

Landform features: means distinctive physical attributes of land such as slope, shape, elevation and relief (ORMCP, 2017).

Large inland lakes: means those waterbodies having a surface area of equal to or greater than 100 square kilometres where there is not a measurable or predictable response to a single runoff event (PPS, 2014).

Life science areas of natural and scientific interest: means an area(s) that has been:

- a) Identified as having life science values related to protection, scientific study or education; and
- b) Further identified by the Ministry of Natural Resources and Forestry using evaluation procedures established by that Ministry, as amended from time to time (Greenbelt Plan, 2017).

Major development: means development consisting of,

- The creation of four or more lots,
- The construction of a building or buildings with a ground floor area of 500m² or more, or
- The establishment of a major recreational use as described in section 38 of the Oak Ridges Moraine Conservation Plan (ORMCP, 2017).

Major recreational uses: means a recreational use that requires large-scale modification of terrain, vegetation or both

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and usually also requires large-scale buildings or structures, including but not limited to golf courses; serviced playing fields; serviced campgrounds; and ski hills (Greenbelt Plan, 2017).

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 (PPS, 2014).

Natural self-sustaining vegetation: means vegetation dominated by native plant species that can grow and persist without direct human management, protection or tending (Greenbelt Plan, 2017).

Negative impact(s): means

- In regard to policy 1.6.6.4 and 1.6.6.5 (in the PPS), degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features, and their related hydrologic functions, due to single, multiple or

successive development. Negative impacts should be assessed through environmental studies including hydrogeological or water quality impact assessments, in accordance with provincial standards;

- In regard to policy 2.2 (in the PPS), degradation to the quality and quantity of water, sensitive, surface water features and sensitive ground water features, and their related hydrogeological functions, due to single, multiple or successive development or site alteration activities;
- In regard to fish habitat, any permanent alteration to, or destruction of fish habitat, except where, in conjunction with the appropriate authorities, it has been authorized under the Fisheries Act; and
- In regard to other natural heritage features and areas, degradation that threatens the health integrity of the natural features of ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities (A Place to Grow, 2019).

One hundred year flood: for river, stream and small inland lake systems, means that flood, based on an analysis of precipitation, snow melt, or a combination thereof, having a return period of 100 years on average, or having a 1% chance of occurring or being exceeded in any given year (PPS, 2014).

One hundred year flood level: means

- For the shorelines of the Great Lakes, the peak instantaneous Stillwater level, resulting from combinations of mean monthly lake levels and wind setups,

which has a 1% chance of being equalled or exceeded in any given year;

- In the connecting channels (St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers), the peak instantaneous Stillwater level which as a 1% chance of being equalled or exceeded in any given year; and
- For large inland lakes, lake levels and wind setups that have a 1% chance of being equalled or exceeded in any given year, except that, where sufficient water level records do not exist, the one hundred year flood level is based on the highest known water level and wind setups (PPS, 2014).

On-farm diversified uses: means uses that are secondary to the principal agricultural use of the property, and are limited in area. On-farm diversified uses include, but are limited to, home occupations, home industries, agri-tourism uses, and uses that produce value-added agricultural products (PPS, 2014).

Other water-related hazards: means water-associated phenomena other than flooding hazards and wave uprush which act on shorelines. This includes, but is not limited to ship-generated waves, ice piling and ice jamming (PPS, 2014).

Permanent stream: means a stream that continually flows in an average year (Greenbelt, 2017).

Quality and quantity of water: is measured by indicators associated with hydrologic function such as minimum base flow, depth to water table, aquifer pressure, oxygen levels, suspended solids, temperature,

bacteria, nutrients and hazardous contaminants, and hydrologic regime (PPS, 2014).

River, stream and small inland lake systems: means all watercourses, rivers, streams, and small inland lakes or waterbodies that have a measureable or predictable response to a single runoff event (PPS, 2014).

Sand barrens: means land, not including land that is being used for agricultural purposes or no longer exhibits sand barrens characteristics, that:

- a) Has sparse or patchy vegetation that is dominated by plants that are:
- b) Adapted to severe drought and low nutrient levels;
- c) Maintained by severe environmental limitations such as drought, low nutrient levels and periodic disturbances such as fire;
- d) Has less than 25% tree cover;
- e) Has sandy soils, other than shorelines, exposed by natural erosion or depositional process, or both; and
- f) Has been further identified, by the Ministry of Natural Resources and Forestry or by any other person, according to evaluation procedures established by the Ministry of Natural Resources and Forestry, as amended from time to time (Greenbelt Plan, 2017).

Savannah: means land (not including land that is being used for agricultural purposes and no longer exhibits savannah characteristics) that,

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- a) Has vegetation with a significant component of non-woody plants, including tallgrass prairie species that are maintained by seasonal drought, periodic disturbances such as fire, or both,
- b) Has from 25 percent to 60 percent tree cover,
- c) Has mineral soils, and

has been further identified by the Ministry of Natural Resources and Forestry or by any other person, according to evaluation procedures established by the Ministry of Natural Resources and Forestry, as amended from time to time (ORMCP, 2017).

Sensitive: in regard to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events including, but not limited to, water withdrawals, and additions of pollutants (PPS, 2014).

Sensitive land uses: means buildings, amenity areas, or outdoor spaces where routine or normal activities occurring at reasonably expected times would experience one or more adverse effects from contaminant discharges generated by nearby major facilities. Sensitive land uses may be a part of the natural or built environment. Examples may include, but are not limited to: residences, day care centres, and educational and health facilities (A Place to Grow, 2019).

Significant: means

In regard to groundwater recharge area, an area that has been identified:

- a) As a significant groundwater recharge area by any public body for the purposes of implementing the PPS, 2014;
 - b) As a significant groundwater recharge area in the assessment report required under the Clean Water Act, 2006; or
 - c) As an ecologically significant groundwater recharge area delineated in a subwatershed plan or equivalent in accordance with provincial guidelines. For the purposes of this definition, ecologically significant groundwater recharge areas are areas of land that are responsible for replenishing groundwater systems that directly support sensitive areas like cold water streams and wetlands;
- In regard to surface water contribution, areas, generally associated with headwater catchments, that contribute to baseflow volumes which are significant to the overall surface water flow volumes within a watershed;
 - In regard to valleyland, an area which is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. These are to be identified using criteria established by the Province;
 - 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;

- In regard to wildlife habitat, an area that is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. These are to be identified using criteria established by the Province;
- 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. These are to be identified using criteria established by the Ontario Ministry of Natural Resources;
- In regard to other features and areas in policy 2.1, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area of natural heritage system;
- In regard to mineral potential, an area identified as provincially significant through evaluation procedures by the Province, as amended from time to time, such as the Provincially Significant Mineral Potential Index; and
- In regard to cultural heritage and archaeology resources that have been determined to have cultural heritage value or interest for the important contribution they made to our understanding of the history of a place, an event, or a people

Criteria for determining significance for the resources identified in sections (c)-(e) are

recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used

While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation. (A Place to Grow, 2019).

Significant groundwater recharge area:

means a significant groundwater recharge area identified:

- a) As a significant groundwater recharge area by any public body for the purposes of implementing the PPS;
- b) As a significant groundwater recharge area in the assessment report required under the Clean Water Act, 2006; or
- c) As an ecologically significant groundwater recharge area delineated in a subwatershed plan or equivalent in accordance with provincial guidelines (Greenbelt Plan, 2017).

Significant surface water contribution areas:

means areas, generally associated with headwater catchments, that contribute to baseflow volumes which are significant to the overall surface water flow volumes within a watershed (Greenbelt Plan, 2017).

Special policy area: means an area within a community that has historically existed in the flood plain and where site-specific policies, approved by both the Ministers of Natural Resources and Municipal Affairs and Housing, are intended to provide for the continued viability of existing uses (which are generally on a small scale) and address the significant social and economic hardships to the

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community that would result from strict adherence to provincial policies concerning development. The criteria and procedures for approval are established by the Province.

A Special Policy Area is not intended to allow for new or intensified development and site alteration, if a community has feasible opportunities for development outside the flood plain (PPS, 2014).

Stormwater master plan: means a long-range plan that assesses existing and planned stormwater facilities and systems and outlines stormwater infrastructure requirements for new and existing development within a settlement area. Stormwater master plans are informed by watershed planning and are completed in accordance with the Municipal Class Environmental Assessment (A Place to Grow, 2017).

Subwatershed: means an area that is drained by a tributary or some defined portion of a stream (ORMCP, 2017).

Subwatershed plan: means a plan that reflects and refines the goals, objectives, targets and assessments of watershed planning for smaller drainage areas, is tailored to subwatershed needs and addresses local issues (Greenbelt Plan, 2017).

Surface water feature: means water-related features on the earth's surface, including headwaters, rivers, stream channels, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or

topographic characteristics (A Place to Grow, 2017).

Sustainable: when used with respect to a natural resource, means that the natural resource is able to support a particular use or activity without being adversely affected (ORMCP, 2017).

Tallgrass prairies: means land, not including land that is being used for agricultural purposes or no longer exhibits tallgrass prairie characteristics, that:

- a) Has vegetation dominated by non-woody plants, including tall grass prairie species that are maintained by seasonal drought or periodic disturbances such as fire, or both;
- b) Has less than 25% tree cover;
- c) Has mineral soils; and
- d) Has been further identified, by the Ministry of Natural Resources and Forestry or by any other person, according to evaluation procedures established by the Ministry of Natural Resources and Forestry, as amended from time to time (Greenbelt Plan, 2017).

Threatened species: means a species that is listed or categorized as a "Threatened Species" on the Ontario Ministry of Natural Resources' official Species at Risk list, as updated and amended from time to time (PPS, 2014).

Valleylands: means a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year (PPS, 2014).

Vegetation Protection Zone: means a vegetated buffer area surrounding a key natural heritage feature or key hydrologic feature (Greenbelt Plan, 2017).

Vulnerable: means surface and/or ground water that can be easily changed or impacted (PPS, 2014).

Water resource system: means a system consisting of ground water features and areas and surface water features (including shoreline areas), and hydrologic functions, which provide the water resources necessary to sustain healthy aquatic and terrestrial ecosystems and human water consumption. The water resource system will comprise key hydrologic features and key hydrologic areas (A Place to Grow, 2019).

Watershed: means an area that is drained by a river and its tributaries (PPS, 2014).

Watershed planning: means planning that provides a framework for establishing goals, objectives and direction for the protection of water resources, the management of human activities, land, water, aquatic life and resources within a watershed and for the assessment of cumulative, cross-jurisdictional and cross-watershed impacts (Greenbelt Plan, 2017).

Wayside pits and quarries: means a temporary pit or quarry opened and used by or for a public authority solely for the purpose of a particular project or contract or road construction and not located on the road right-of-way (PPS, 2014).

Wellhead protection area: means the surface and subsurface area surrounding a

water well or well field that supplies a public water system and through which contaminants are reasonably likely to move so as eventually to reach the water well or well field (ORMCP, 2017).

Wetland: means land such as a swamp, marsh, bog or fen, not including land that is being used for agricultural purposes and no longer exhibits wetland characteristics, that:

- a) Is seasonally or permanently covered by shallow water or has the water table close to or at the surface; and
- b) Has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants (A Place to Grow, 2019).

Wetlands: means 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 swamps, marshes, bogs and fens (Greenbelt Plan, 2017).

Wildlife habitat: means areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species (PPS, 2014).

Woodlands: means treed areas that provide environmental and economic benefits to

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both the private landowner and the general public, such as erosion prevention, hydrogeological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas, and vary in their level of significance at the local, regional, and provincial levels. other than a cultivated fruit or nut orchard or a plantation established for the purpose of Christmas trees. Woodlands may be delineated according to the Forestry Act definition of the Province's Ecological Land Classification system definition for "forest" (A Place to Grow, 2019).



The Regional Municipality of Durham
605 Rossland Road East, Whitby, Ontario L1N 6A3
905-668-7711 or 1-800-372-1102
www.durham.ca