PEEL REGION URBAN FOREST BEST PRACTICE GUIDE 1

Best Practices Guide for Urban Forest Planning in Peel

October 2021

Region of Peel
working with you

TOWN OF CALEDON

MISSISSAUGA

BRAMPTON
Flower City
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Credit Valley Conservation
inspired by nature

Toronto and Region Conservation Authority

Peel Region Urban Forest Best Practice Guide 1

Best Practices Guide for Urban Forest Planning in Peel

October 2021

Working together as part of the Peel Climate Change Partnership

Acknowledgments

This guidance document is the first in a series of five deliverables developed for Peel Region and its partners as part of the Peel Region Urban Forest Best Practices project. This guide, like all the deliverables for this project, has been developed collaboratively with input from members of the Project Team, Peel Urban Forest Working Group, Peel Climate Change Partnership and other urban forestry and arboriculture professionals. Specific thanks are extended to:

- REGION OF PEEL: Heather Hewitt, Mark Head, Derek Lau, Mark Pajot, Samantha Paquette, Liz Brock, Terry DiNatale (retired), Kiran Ghai
- CITY OF MISSISSAUGA: Katherine Culbert, Sarah Piett, Sharleen Bayovo
- CITY OF BRAMPTON: Michael Hoy, William Volpe, Zoe Milligan
- TOWN OF CALEDON: Nick Pirzas, Policy and Sustainability Department
- CREDIT VALLEY CONSERVATION (CVC): Yvette Roy, Kata Bavrlic, Dorothy DiBerto, Liam Marray (retired), Christine Wilson
- TORONTO AND REGION CONSERVATION AUTHORITY (TRCA): Noah Gaetz, Michelle Sawka, Mary-Ann Burns, Meaghan Eastwood, Jackie Hamilton

The consulting team for this project was led by Margot Ursic of Beacon Environmental Limited with support from Steve Colombo of Ecoview Consulting Limited and Jana Joyce of the MBTW Group. This guide would not have been possible without the research, writing and review support provided by Brian Henshaw, Ash Baron, Anna Cunningham and Sarah Zicca of Beacon. Sincere thanks are also extended to Ruth Victor MCIP, RPP, MRTPI for her input to Section 4. While every attempt has been made to provide current information in an accurate manner, the authors take responsibility for any errors or omissions.

Disclaimer

The best practices identified in this guide are primarily intended for the Region of Peel and its local municipalities but may also be considered by other municipalities. These best practices represent a synthesis of the findings from the research, reviews and interviews undertaken and of the opinions of the consulting team and the Project Team members. The guidance in this document is intended to serve as a resource for application at the user's discretion; it does not reflect the position or direction of any of the partner agencies listed above.

Cover image credit: Region of Peel

Executive Summary

As regions across the planet become increasingly urbanized and climate change becomes an ever more urgent issue, including trees and wooded natural areas in urban areas is becoming recognized as a cornerstone of sustainable community planning. Forests and green spaces in urban areas make substantial contributions to a community's health and economy (e.g., by reducing stormwater runoff, moderating temperature extremes, fostering physical and psychological well-being, etc.). As such, trees and wooded areas in urban centres are increasingly recognized as green infrastructure and natural assets considered "essential" to keeping communities healthy and helping municipalities deal with climate change in a cost-effective way.

The Region of Peel and its climate change partners (i.e., the Town of Caledon, City of Brampton, City of Mississauga, Toronto and Region Conservation Authority [TRCA] and Credit Valley Conservation [CVC]) have recognized and embraced protecting and enhancing tree cover in Peel as one of the simplest and most cost-effective tools for helping to both mitigate and adapt to climate change at the local level. To support this direction, these partners have collaborated to develop a series of best practice guides intended to support improved planning for, and management of, Peel's urban forest in a context of climate change.

This the first in a series of five guidance documents developed as part of the *Peel Region Urban Forest Best Practices* project. The purpose of this project was to provide guidance that will help sustain and expand tree cover in Peel's urban areas where it can provide benefits to the greatest number of people while also contributing to climate change mitigation and adaptation. The guides in this series are:

- **Guide 1: Best Practices Guide for Urban Forest Planning in Peel**
- Guide 2: Urban Forest Management Best Practices Guide for Peel
- Guide 3: Guide for Tree and Shrub Standards and Specifications for Regional Roads in Peel
- Guide 4: Potential Tree Species for Peel in a Climate Change Context, and
- Guide 5: Working with Trees: Best Practices for a Resilient Future.

The research and best practices/opportunities identified in this guide are primarily intended for Peel's urban areas where climate change stressors tend to be most intense and not for trees in natural which require some different considerations. However, some of the guidance is also applicable for the broader urban forest. This guide has identified best practices for urban forest planning in Peel based on:

- A targeted review of relevant policies and regulations at the federal, provincial, and municipal levels
- A targeted review of relevant on-line planning resources including scoped research on current and emerging planning-based initiatives and resources (in areas such as asset management planning and "green" development standards)
- Consideration for Peel's biophysical, land use and community context

- Input from the Project Team and other municipal forestry and planning professionals in Peel and elsewhere in southern Ontario, and
- Knowledge gathered from the consulting team's experience in Peel and in other municipalities.

This guide includes an overview of the range of planning policies and related tools available at the federal, provincial, regional (including conservation authority) and local municipal levels that can be leveraged to support urban forest planning in Peel, and potentially elsewhere in Ontario. The bulk of the research and outreach undertaken for this guide focussed on municipal planning tools, as this is where the greatest authority and opportunities to effect change related to urban forest planning currently exist.

The following tables summarize the various best practices and opportunities identified in this guide at the federal (**Table ES-1**), provincial (**Table ES-2**) and municipal levels. The municipal urban forest planning review specifically identified best practices and opportunities related to Official Plan policy direction (**Table ES-3**), site plan control (**Table ES-4**) and tree bylaws (**Table ES-5**).

As a Peel-based project, the opportunities, best practices, and recommendations identified in this guide have been tailored to help sustain and increase urban forest resilience to existing and anticipated urban and climate conditions in Peel, although they may have broader applications. Discussion of each of these best practices and opportunities and examples of where they have been implemented, where appropriate, are included in this guide.

FEDERAL LEVEL

Table ES-1. Summary of Urban Forest Planning Best Practices and Opportunities in Peel Related to Available Federal Tools

Name of Tool (Guide Section)	**Best Practices and Opportunities in Peel Related to Available Federal Tools**
***Species at Risk Act*, 2002 (SARA)** (Section 2.1.1)	**BEST PRACTICE: Target Net Gains for the Urban Forest Through the Federal *Species at Risk Act* Process** Ensure that as part of the planning process in Peel: (a) federally Endangered and Threatened species (including trees) are screened for as part of planning processes on federal lands, (b) aquatic federally Endangered and Threatened species are screened for as part of planning processes on all lands, and (c) requirements and opportunities for protection and enhancement of tree cover adopt a net gain approach.
***Migratory Birds Convention Act*, 1994 (MBCA)** (Section 2.1.2)	**BEST PRACTICE: Apply the MBCA to Better Manage Tree Removals** As part of the planning process in Peel, recommend compliance with the MBCA to avoid disturbance to nesting birds as part of the planning process for both public and private lands. In part this means specifying that either no tree removals take place between April 1 and August 31 or when nesting birds are present, or that removals can only take place if a qualified inspector confirms the trees have no active nests.

Name of Tool (Guide Section)	**Best Practices and Opportunities in Peel Related to Available Federal Tools**
***Fisheries Act*, 1985** (Section 2.1.3)	**OPPORTUNITY: Urban Forest Enhancement Through the *Fisheries Act*** As part of the planning process in Peel the Fisheries Act (and potentially the Species at Risk Act as it applies to aquatic species) should be implemented so that opportunities for: (a) urban forest enhancement where approved impacts to fish habitat require mitigation and offsetting are identified and pursued, and (b) introduction or replacement of trees in lands adjacent to fish habitat affected by the proposed works are identified and pursued.
***Plant Protection Act*, 1990** (Section 2.1.4)	**OPPORTUNITY: Build on Federal Forest Pest Knowledge and Regulatory Controls** Municipalities in Peel should leverage: • The technical and educational resources provided by the Canadian Food Inspection Agency (CFIA) as they relate to urban forest pests to assist with local urban forest planning and management • The role of CFIA to help regulate activities in formally identified management zones (where applicable) and undertake follow-up monitoring on pest presence/absence; and • Information provided by CFIA to help inform municipal urban forest planning and management (e.g., pest-related species selection guidelines).
Tree Canada (Section 2.2.1)	**OPPORTUNITY: Leverage Urban Forest Grants and Resources at the Federal Level** Municipal staff in Peel, Caledon, Brampton and/or Mississauga can leverage the on-line resources, networking opportunities and support for tree planting and management in Canada's urban areas offered by Tree Canada.
Canadian Urban Forest Network (CUFN) (Section 2.2.2)	**OPPORTUNITY: Network at the Federal Level** Municipal forestry staff in Peel, Caledon, Brampton and/or Mississauga could join the CUFN to: (a) network with forestry professionals about best practices, (b) obtain and share research results on areas of interest (e.g., pilot projects on assisted migration, success of new techniques and technologies), and (c) help advocate for stronger and more long-term federal support for urban forestry in a context of climate change.
Canadian Federation of Municipalities (Section 2.2.3)	**OPPORTUNITY: Provide and Seek Support for Bringing the Urban Forest into Asset Management Planning** Municipal forestry staff in Peel, Caledon, Brampton and/or Mississauga could: (a) explore urban forestry funding opportunities through the Federation of Canadian Municipalities' (FCM) Green Municipal Fund, (b) explore FCM funding to support asset management plan development – including integration of the urban forest in such planning, and (c) engage in training opportunities being offered by FCM related to asset management planning.
50 Million Trees Program (Forests Ontario) (Section 2.2.4)	**OPPORTUNITY: Explore Partnership Opportunities with Forest Ontario** Peel Region and/or the local municipalities in Peel could apply to be partners of the 50 Million Trees Program (through Forests Ontario) and, if successful, could work with various landowners in the community to plant seedlings provided through the partnership on their properties.

PROVINCIAL LEVEL

Table ES-2. Summary of Urban Forest Planning Best Practices and Opportunities for Peel Related to Available Provincial Tools

Name of Tool (Guide Section)	**Best Practices and Opportunities for Peel Related to Available Provincial Tools**
Endangered Species Act (Section 3.1.1)	**BEST PRACTICE: Targeting Net Gains for the Urban Forest Through the Provincial Endangered Species Act Process** Ensure that as part of the planning process in Peel: (a) provincially Endangered and Threatened species (including trees) are screened for, and (b) requirements and opportunities for protection and enhancement of the urban forest take a net gain approach.
***Planning Act* and Provincial Policy Statement (PPS)** (Section 3.1.3)	**BEST PRACTICE: Continue to use Natural Heritage Policies to Support Protection of the Urban Forest** The Provincial Policy Statement (PPS) is the most important and effective planning tool at the provincial level for ensuring the long-term protection of treed natural areas in Ontario. Municipalities in Peel, and elsewhere, should continue to use PPS policies related to natural, water and natural hazards to help protect trees associated with natural heritage features and areas identified as significant at the provincial and municipal levels, and within identified natural heritage systems. **BEST PRACTICE: Incorporate Provincial Policies Related to Green Infrastructure and Climate Change** The most recent iterations of the PPS recognize: the value of green infrastructure (including the urban forest), and the need for communities to mitigate and adapt to climate change. To reflect this shift at the municipal level, planning documents should (a) recognize urban forests as a component of green infrastructure, (b) adopt the Provincial Policy Statement definition of green infrastructure, and (c) implement policies and strategies that support and require the use of natural assets such as the urban forest to help address climate change impacts.
Invasive Species Act (Section 3.1.4)	**OPPORTUNITY: Leverage the Invasive Species Act for Forest Pest Education** The Region and its partners could explore options for leveraging the *Invasive Species Act* as an educational tool and potentially even a regulatory tool for helping to sustain urban forest native biodiversity and resilience if selected "high priority" invasive plants and/or pests were listed. Listed species may also be more likely to get resource support from the Canadian Food Inspection Agency and/or Canadian Wildlife Service (see **Section 2.1.4**) for the implementation of approved invasive species management plans.
Infrastructure for Jobs and Prosperity Act (Section 3.1.5)	**BEST PRACTICE: Value the Urban Forest as a Municipal Asset** The policy framework in Ontario has been evolving over the past five years to (a) recognize the value of green infrastructure (including urban forests) and (b) require municipalities to value and integrate green infrastructure into overall asset management planning. To reflect this shift at the municipal level, planning documents should work to incorporate urban forests (and other natural assets) into municipal asset management planning.
Growth Plan, Greenbelt	**OPPORTUNITY: Build on Provincial Plan Policies That Link Use of Green Infrastructure and Natural Assets to Climate Change Mitigation**

Name of Tool (Guide Section)	**Best Practices and Opportunities for Peel Related to Available Provincial Tools**
Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plan (Section 3.1.6)	Based on the direction from 2017 Growth Plan, the 2017 Greenbelt, Oak Ridges Moraine and Niagara Escarpment provincial plans each include some policies that support the use of green infrastructure and/or natural systems in community planning to help build resilience to climate change. These policies could be referenced or adopted for use in municipal official plans and other planning documents.
Health Protection and Promotion Act (Section 3.1.10)	**BEST PRACTICE: Include Policies for the Urban Forest That Mitigate Human Health Risks Related to Climate Change Impacts** Requirements under the Ministry of Health's Healthy Environments and Climate Change Guideline (2018) reinforce the need for the Region and local municipalities to work with Peel Health Services to ensure natural environment (including urban forest) planning supports: (a) data collection that assists with identification of human health risk factors in the environment related to climate change, (b) approaches that enable mitigation of these risk factors, (c) strategies that advance a healthy built and natural environment, and (d) alignment of natural environment and public health initiatives.
Environmental Assessment Act (Section 3.1.11)	**BEST PRACTICES: More Comprehensive Consideration for Urban Forest Opportunities Through the EA Process** Treed resources both within and outside of significant natural features and areas are, and should continue to be, considered through the EA process. Opportunities for enhancing protection and/or enhancement of wooded natural areas and treed areas through the EA process include considering the following as part of the process: • The value of existing trees including the social and economic services they provide • Local municipal urban forest policies, guidelines and standards, and • Opportunities to compensate for trees or wooded areas approved for removal, and opportunities to introduce new or additional trees and/or wooded areas to address climate change considerations.
Ontario Urban Forest Council (OUFC) (Section 3.2.1)	**OPPORTUNITY: Network and Advocate Through the OUFC** Regional and local municipal staff could leverage the on-line resources and networking opportunities available through the OUFC and encourage this group to advocate for sustained provincial support for urban forest planning and management.
Species at Risk Stewardship Program (Section 3.2.3)	**OPPORTUNITY: Seek Funding for Urban Forest Stewardship Projects That Target SAR** The Region and/or its partners could apply for provincial funding for urban forest stewardship projects that target habitat creation or enhancement for a provincial SAR.

MUNICIPAL LEVEL: OFFICIAL PLANS

Table ES-3. Summary of Best Practices and Opportunities for Urban Forest Policies in Official Plans

Best Practice (Guide Section*)	**Implementation Guidance for Official Plans**	**Regional or Local Level****
Policy Structure - Highlight and Integrate Urban Forest Policies (Section 4.1.1)	• Include goals related to the urban forest in the overall plan direction. • Clarify the relationship between natural heritage and urban forest policies. • Include urban forest policies as a stand-alone section and integrate urban forest policies in other sections.	• Both • Both • Both
Include an Urban Forest Vision and Goals That Recognize Co-benefits (Section 4.1.2)	• Include direction that recognizes urban forest co-benefits. • Build on direction from existing urban forest strategies and plans at the respective jurisdictional level. Local official plans may build on the regional vision and goals if they do not have their own strategy or plan.	• Both • Both
Include Urban Forest Targets – Carefully (Section 4.1.3)	• Develop jurisdiction-specific targets based on local municipal data and context. • Develop regional canopy cover targets in consultation with local municipalities. • Commit to working towards equitably dispersed canopy cover.	• Both • Region • Both
Align Policies with Human Health Risk and Climate Change Risk Mitigation (Section 4.1.4)	• Include policies in Official Plans that are specifically intended to help communities maximize the co-benefits of urban forest and human/community health in the face of climate change.	• Both
Support Ongoing Inventory, Management and Monitoring (Section 4.1.5)	• Support ongoing inventory, maintenance, and monitoring of the urban forest. • Support for an adaptive management approach to urban forest planning.	• Both • Both
Require Comprehensive Assessment of Trees and Woodlands (Section 4.1.6)	• Require comprehensive guidelines for wooded feature assessment (often as part of an Environmental Impact Study). • Require comprehensive guidelines for tree inventory (as well as associated tree preservation and removal plans).	• Local • Local
Strong Protection for Existing Mature Trees (Section 4.1.7)	• Provide strong and/or creative approaches for supporting protection of established trees, particularly mature and healthy trees.	• Local • Local

Best Practice (Guide Section*)	**Implementation Guidance for Official Plans**	**Regional or Local Level****
Take a No Net Loss or Net Gain Approach to What Cannot Be Protected (Section 4.1.8)	• Require replacement of trees approved for removal on private lands. • Require replacement of trees approved for removal on municipal lands. • Establish a net gain principle for tree replacements. • Require replacement for trees approved for removal as part of the planning process in accordance with compensation requirements set out through private tree bylaws. • Require that even on sites where no trees occur under existing conditions that opportunities for tree establishment are pursued.	• Local • Both • Both • Local • Both
Plant the Right Tree in the Right Place (Section 4.1.9)	Policies related to improving urban forest resilience such as support for or direction of: • Diversification of species selection (potentially including pilot studies of assisted migration) • Provision of adequate soil volumes and quality • Species selection tailored to the land use context, and • Use of a wide diversity of native tree and shrub species while allowing the use of non-native non-invasive species when appropriate but not invasive species.	• Both • Both • Both • Both
Support for Sustained Outreach and Stewardship (Section 4.1.10)	• Support for sustained outreach and stewardship initiatives targeting public and private lands. • Seek and pursue opportunities for wooded natural areas securement where feasible.	• Both • Region
Build on Available Resources, Partnerships and Funding (Section 4.1.11)	• Require local municipalities to have Urban Forest Management Plans and to support them as they develop, review, and update their Urban Forest Management Plans. Commit to: • Building on existing Indigenous engagement and partnership opportunities • Building on existing agency and community partnerships and funding • Pursuing targeted research opportunities, and • Developing incentives for urban forest stewardship on private lands.	• Region • Both • Both • Both • Both • Both
Lead by Example (Section 4.1.12)	• Direct comparable urban forest policies and practices to be applied on municipal lands and municipal/capital projects as on private lands.	• Both
Recognize the Urban Forest as Green	• Recognize the urban forest as a valued green infrastructure component. • Provide direction to incorporate it into municipal asset management planning.	• Both • Both

Best Practice (Guide Section*)	**Implementation Guidance for Official Plans**	**Regional or Local Level****
Infrastructure and a Natural Asset (Section 4.1.13)		
Include Key Definitions (Section 4.1.14)	Definitions in addition to "woodland" and "significant woodland" to support the clear interpretation and facilitate the application of urban forest policies, as follows: • A definition of the "urban forest" • A definition of "tree" (see discussion in **Section 4.3.3**) • Definitions of "green infrastructure" and "impacts of a changing climate" from the PPS, and • Potentially other definitions depending on the policies adopted (e.g., no net loss or net gain, adaptation, vulnerability).	• Both • Both • Both • Both

* Discussion and example policies are provided in the respective guide sections.
** Although many of the official plan directions identified can be tailored for both regional and local official plans, a few may be more appropriate for one or the other depending on jurisdictional differences, as noted. In Peel, as the local municipalities tend to be "on the front lines" with respect to the bulk of the urban forest planning, maintenance, establishment and removals, regional urban forest policies – particularly those that have implications at the local level - should be developed in consultation with the local municipalities.

MUNICIPAL LEVEL: ZONING AND SITE PLAN CONTROLS

Table ES-4. Summary of Best Practices and Opportunities Related to Zoning, Subdivision and Site Plan Controls

Planning Tool (Guide Section)	**Opportunity or Best Practice Related to Zoning, Subdivision and Site Plan Controls**
Zoning (Section 4.2.1)	Well-crafted zoning bylaws can be used to effectively implement official plan policies at the local level, including natural heritage system policies, through the establishment of zones, permitted uses and general and specific provisions to regulate and control land uses and how development occurs on a site. Consolidating requirements related to existing municipal tree bylaws with other zoning clearance requirements, effectively making the tree bylaw(s) part of the applicable law, has also been used effectively in at least one municipality.
Subdivision and Site Plan Control (Sections 4.2.2 and 4.2.4)	• Carrying official plan policies related to trees and wooded areas beyond the zoning bylaw and into site plan control and conditions of approval (e.g., Region of Halton). • Developing and implementing shade guidelines on a site-specific basis as part of park planning or redevelopment of public open spaces to maximize shade benefits (e.g., City of Toronto). • Requiring a canopy cover plan as part of all Plans of Subdivision and Site Plans to demonstrate the development's contribution to the urban forest (e.g., Town of Oakville).

Planning Tool (Guide Section)	Opportunity or Best Practice Related to Zoning, Subdivision and Site Plan Controls
	• Having Site Plan guidelines that include requirement for: tree related plans, tree protection and establishment of street trees and landscaping requirements on private property (e.g., City of Mississauga). • Applying Green Standards or Sustainability Standards through Site Plan to encourage and recognize enhanced tree protection and/or establishment (e.g., City of Brampton, City of Toronto). • Use of Conditions of Subdivision to enforce tree related requirements (e.g., City of Guelph, Town of Oakville). • Having qualified staff to: review Site Plans and tree-related reports/plans submitted, work with the Committee of Adjustment, and oversee or undertake site inspections to ensure compliance with approved plans and conditions (e.g., Town of Richmond Hill, City of Ottawa). • Developing guidelines for tree compensation on regional lands and as part of regional projects. Approaches should build on guidance already in place in local municipalities and consider precedents included in this guide.

MUNICIPAL LEVEL: TREE AND WOODLAND BYLAWS

Table ES-5. Summary of Best Practices and Opportunities Related to Tree and Woodland Bylaws

Big Picture Direction (Guide Section)	Opportunity, Best Practice or Recommendation Related to Tree and Woodland Bylaws
Opportunities to Fill Tree Bylaw Gaps in Peel (Section 4.3.2)	• The Region of Peel should develop a municipal tree bylaw that regulates the injury and destruction of vegetation on municipal ROWs and municipal properties. • The Town of Caledon could develop a private tree bylaw focussed on preventing pre-emptive clearing on larger properties to be developed. • The City of Mississauga could consider revising its private tree bylaw to remove the exemption for removal of up to two trees per year without a permit.
Tree and Woodland Bylaw Development (Section 4.3.3)	1. Have separate bylaws for trees on public versus private lands. 2. Communicate a clear purpose for the bylaw. 3. Define key terms in accordance with applicable legislation (e.g., "woodland", "good forestry practice" and "boundary tree"). 4. Tailor the bylaw to the municipal context. 5. Select exemptions that limit bureaucracy. 6. Consider other applicable legislation in prohibitions.

Big Picture Direction (Guide Section)	Opportunity, Best Practice or Recommendation Related to Tree and Woodland Bylaws
	7. Balance cost recovery with incentives for compliance. 8. Include permit conditions that support bylaw objectives. 9. Include an appeals process. 10. Create a bylaw that can be enforced. 11. Avoid schedules to the bylaw. 12. Ensure there is adequate political support. 13. Ensure there are resources to support implementation. 14. Implement ongoing outreach and education.
Pursue Support for Tree Bylaw Development and Implementation (Section 4.3.4)	The Region and local municipalities should encourage the appropriate staff to engage with the Forest Conservation By-law Committee and/or Lower Tier Tree Bylaw Advisory Group and consider the available tree bylaw resources developed by these groups when developing or updating their local private tree bylaws.

In considering the best practices and opportunities for improving urban forest planning covered in this guide, the overarching key to success appears to lie in having complementary urban forest planning tools implemented at all stages and scales of planning, from the jurisdiction-wide to the site-specific level.

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1. Introduction

As regions across the planet become increasingly urbanized and climate change becomes a more urgent issue, including trees and wooded natural areas in urban centres is becoming more widely recognized as a cornerstone of sustainable community planning.

As documented in the scientific and technical literature, well-planned and well-managed forests and green spaces in urban areas make substantial contributions to a community's health and economy by:

- Reducing stormwater runoff
- Mitigating urban heat island effects and ameliorating weather extremes
- Improving air quality
- Sequestering carbon
- Improving the functionality of outdoor spaces for recreational and social events
- Fostering physical and psychological well-being
- Providing wood and non-wood forest products, and
- Contributing to community-building and place-making, among other valuable services.

With this wide range of benefits and services being well-established, trees and wooded areas in urban centres are increasingly recognized as green infrastructure and natural assets considered "essential" to keeping communities healthy and helping municipalities deal with climate change in a cost-effective way.

Peel Region and its climate change partners (i.e., the City of Mississauga, City of Brampton and Town of Caledon, Toronto and Region Conservation Authority [TRCA] and Credit Valley Conservation [CVC]) recognize the importance of planning for and sustaining local natural heritage and urban forest resources, particularly in a context of climate change.

Credit: The MBTW Group 2018

Figure 1-1. Example of trees and greenspace integrated in downtown Hamilton, Ontario

The Peel Climate Partnership has identified "increasing green infrastructure" (including the urban forest) as one of its three key priorities and has developed a *Green and Natural Infrastructure Strategy* to guide these efforts. In addition, Peel's Climate Change Master Plan 2020-2030 specifically includes "*implement tree planting and management program[s] for new and existing trees*" (Task 14.3) as one action to help protect and increase green infrastructure throughout Peel.

The Region and its partners have a long track record of supporting both urban forestry and climate change initiatives, and of recognizing the synergies between these two topics. Peel was one of the first regions to develop a *Climate Change Strategy* in 2011, and the first municipality in Canada to develop a tool for prioritizing areas for tree planting based on environmental, economic and social measures (Beacon *et al.,* 2015). Additional relevant outcomes of this collaborative approach over the past decade include:

- Urban Forest Study Technical Reports for Caledon, Brampton and Mississauga that characterize the urban forest in each jurisdiction and provide recommendations for sustaining it
- An Urban Forest Strategy for Peel (2011)
- The creation of the Peel Urban Forest Working Group (UFWG)
- Tree canopy cover assessments of Peel's urban areas in 2009 and 2017, and
- The *Green Natural Infrastructure Strategy* (2018 – 2022) developed by the Peel Climate Change Partnership which, among other things, has identified the need to develop policies, guidelines and standards best practice manuals for urban trees.

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The research and best practices/opportunities identified in this guide are primarily intended for Peel's urban areas where climate change stressors tend to be most intense and not for trees in natural which require some different considerations. However, some of the guidance is also applicable for the broader urban forest.

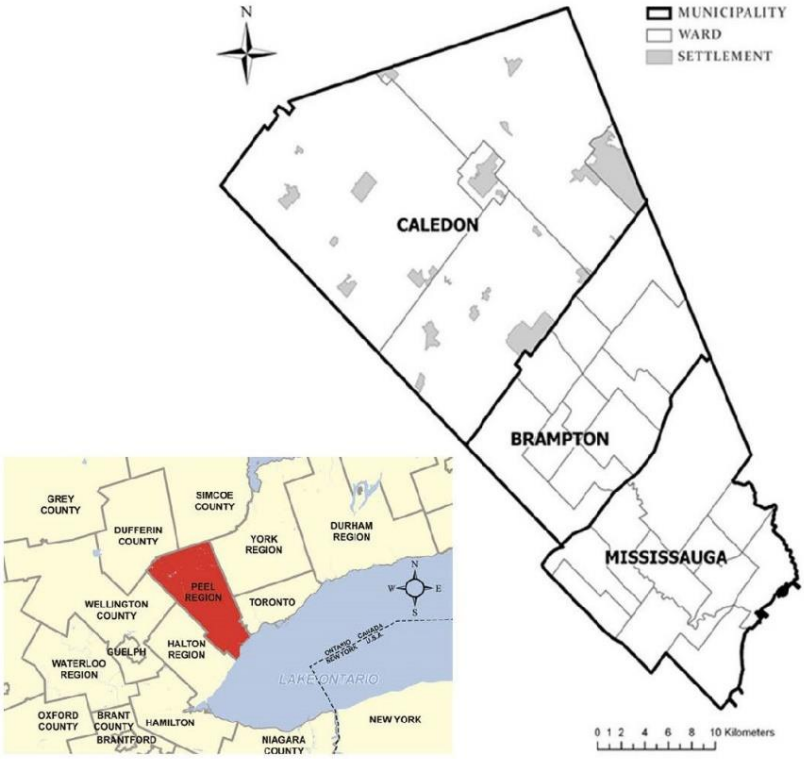
This guide has identified urban forest planning best practices and opportunities considered appropriate for Peel based on:

- A targeted review of relevant policies and regulations at the federal, provincial and municipal levels

- A targeted review of relevant on-line planning resources including scoped research on current and emerging planning-based initiatives and resources (in areas such as asset management planning and "green" development standards) (see **Appendix A**)
- Consideration for Peel's biophysical, land use and community context
- Input from the Project Team and other municipal forestry and planning professionals in Peel and elsewhere in southern Ontario (see **Appendix B**), and
- Knowledge gathered from the consulting team's experience in Peel and in other municipalities.

The bulk of the research and outreach undertaken for this guide focussed on municipal planning tools, as this is where the greatest authority and opportunities to effect change related to urban forest planning currently exist. However, this guide includes suggested best practices and opportunities for improving urban forest planning at the (1) federal (**Section 2**), (2) provincial (**Section 3**) and (3) municipal (**Section 4**) levels. The municipal urban forest planning assessment specifically identifies best practices and opportunities related to Official Plan policy direction (**Section 4.1**), zoning and site plan controls (**Section 4.2**) and tree bylaws (**Section 4.3**).

As a Peel-based project, the opportunities, best practices and recommendations identified in this guide have been selected and tailored to help sustain and increase urban forest resilience under existing and anticipated urban and climate conditions in Peel but may be applicable to urban areas elsewhere.



Credit: *Assessment of Urban Tree Canopy Cover in Peel Region 2015* (B.A. Blackwell & Associates Ltd. 2017)

Figure 1-2. Location of Peel Region in southern Ontario and its three local municipalities

2. Federal Planning Tools

Most urban forest planning direction is developed and implemented at the regional and local municipal levels[1]. However, a component of this guide examines available federal planning tools through an urban forestry lens. This section of the guide provides an overview of existing federal legislation and other federally sponsored resources relevant to the protection, management and/or enhancement of the urban forest, and an assessment of how these tools could be leveraged to support urban forest sustainability in Peel.

This section has drawn on information from:

- Tree Canada's on-line *Compendium of best urban forest management practices* (Bardekjian 2018)
- The consulting team's experience with the review and implementation of federal regulations as part of the planning process in various jurisdictions in Ontario, and
- A review of relevant federal resources (including legislation, organizations and funding) and reviews identified through the research undertaken for this project or suggested by the Project Team.

Each sub-section includes a brief summary of the identified tool, its relevance to urban forestry and its current or potential application to urban forestry in Peel. Relevant opportunities related to urban forestry are highlighted in text boxes within each sub-section.

2.1 Federal Legislation Able To Support Urban Forest Planning

Four pieces of federal legislation have been identified that can be leveraged to support urban forest planning the: *Species at Risk Act* (SARA), *Migratory Birds Convention Act* (MBCA), *Fisheries Act* and *Plant Protection Act*. Although none of these acts focus on forests or trees, they have been included because they (a) have specific elements that relate to or can be applied to tree protection and/or compensation, and (b) are also acts that are regularly applied and enforced as part of the planning process in southern Ontario.

The *Canadian Environmental Assessment Act* (CEAA) (1992) is also recognized as an Act whose implementation could be applied to support urban forest planning. However, in Peel the CEAA would rarely be applied and if applied it would typically be harmonized with requirements under Ontario's *Environmental Assessment Act* (1990), which is much more regularly applied as part of planning in Ontario municipalities. Therefore, discussions related to Environmental Assessment (EA) are provided under provincial tools in **Section 3.1.11** below.

[1] Current practice is to use the terms "regional" and "local" rather than "upper tier" and "lower tier" for municipalities in Ontario and therefore these have been adopted for this guide. In some cases, where appropriate, "single-tier" has been used to refer to jurisdictions where the regional and local municipalities are one and the same.

2.1.1 Species at Risk Act (SARA)

The federal SARA (2002) is intended to: (a) prevent federally Endangered or Threatened wildlife (including plants) from becoming extinct in the wild, (b) help in the recovery of these species, and (c) help prevent species listed as Special Concern from becoming Endangered or Threatened. SARA contains prohibitions that make it an offence to kill, harm, harass, capture, take, possess, collect, buy, sell or trade a species listed in Schedule 1 of SARA as Endangered, Threatened or Extirpated.

However, SARA applies primarily to lands under federal jurisdiction and relies on provincial laws to protect the habitats of these species on other lands. SARA's focus is on supporting voluntary stewardship measures through targeted funding. The current federal Species at Risk funding programs target Aboriginal communities/organizations, citizens and federal agencies and crown corporations[2].

Outside of federal lands, SARA prohibitions apply only to aquatic species and migratory birds that are also listed in the MBCA (discussed in **Section 2.1.2**) and in the case of birds, only to the extent that the MBCA applies.

Relevance to Peel: Although on the surface this act appears to have relevance to urban forestry, on closer examination it has little bearing in Peel. In Peel there are confirmed records for more than 20 federally Endangered or Threatened species, including four trees (i.e., American Chestnut, Eastern Flowering Dogwood, Kentucky Coffee-tree and Butternut). However, these trees and their habitats are only regulated under the SARA on federal lands in Peel. Nonetheless, these tree species and their habitats are also regulated under the provincial *Endangered Species Act*. Protection of federally and provincially Endangered or Threatened trees and their habitats, except when they occur on federally owned lands, is regulated and enforced by the Ministry of Environment, Conservation and Parks (MECP). Relevant opportunities related to the urban forest in Peel are discussed in **Section 3.1.1**.

SARA does however apply to federally Endangered or Threatened aquatic species on all lands and is typically applied in conjunction with the *Fisheries Act* as discussed in **Section 2.1.3** below.

BEST PRACTICE: Target Net Gains for the Urban Forest Through the Federal *Species at Risk Act* Process

Ensure that as part of the planning process in Peel: (a) federally Endangered and Threatened species (including trees) are screened for as part of planning processes on federal lands, (b) aquatic federally Endangered or Threatened species are screened for as part of planning processes on all lands, and (c) requirements and opportunities for protection and enhancement of tree cover adopt a net gain approach.

[2] Government of Canada Species at Risk funding programs - accessed Aug. 19, 2019: https://www.canada.ca/en/environment-climate-change/services/species-risk-act-accord-funding/funding-programs.html

2.1.2 Migratory Birds Convention Act (MBCA)

The MBCA (1994) protects the nests, eggs and young of most bird species from harassment, harm or destruction. Although this legislation was originally established in 1917 to regulate the hunting and trafficking of migratory game birds, in 1994 it was amended and has since become recognized as a tool to help ensure trees approved for removal are not removed while any of the 450 species of listed native "migratory" birds are nesting in them[3].

Currently any nest (used or old) and the immediate habitat to support nesting birds is protected under the MBCA, although the federal government recently tabled legislation to remove the application of the MBCA to most (but not all) old nests.

To comply with this legislation, approved vegetation removal during the active nesting season should either be avoided so as not to disturb nesting birds, or requires a qualified inspector (e.g., an avian biologist) to screen the area and confirm that no active nests are present immediately prior to works being undertaken.

In response to the increased use of this legislation, Environment Canada has identified periods[4] when migratory birds are expected to be nesting in different parts of the country so that activities can be planned to reduce the risk of harming migratory birds.

Relevance to Peel: This legislation applies to urban forestry in Peel in so far as any proposed vegetation clearing (including the cutting of single trees or trees forests) must not take place while any of the listed "migratory birds" are nesting in the tree(s). In Peel, the broader regional nesting period is defined by Environment Canada as early April to late August (conservatively defined as April 1 to August 31) with the "peak" nesting period being between early to mid-May extending through mid-July.

A number of municipalities in southern Ontario (e.g., City of Mississauga, Town of Oakville, City of Guelph) are as a matter of practice requiring that approved tree removals on public or private lands comply with the requirements of the MBCA. In current practice, TRCA plan review staff as public commenting bodies to municipalities and other approval authorities also recommend compliance with the MBCA timing windows to avoid the disturbance of nesting birds.

While municipal compliance with this legislation does not prevent tree removals that are otherwise approved, it does raise awareness about the habitat functions provided by trees, demonstrates municipal awareness of and support for habitat protection, reduces development activity in treed areas during spring and summer when they may be more susceptible to disturbances (e.g., when the soils are thawed and wet), and may provide time to consider additional tree preservation opportunities.

[3] *Migratory Birds Convention Act* (MBCA) and Regulations - accessed Aug. 19, 2019: https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act-regulations.html

[4] Nesting periods - accessed Aug. 19, 2019: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html

BEST PRACTICE: Apply the *Migratory Birds Convention Act* (MBCA) To Better Manage Tree Removals

As part of the planning process in Peel, recommend compliance with the MBCA to avoid disturbance to nesting birds as part of the planning process for both public and private lands. In part this means specifying that either no tree removals take place between April 1 and August 31 or when nesting birds are present, or that such removals can only take place if a qualified inspector confirms the trees have no active nests.

2.1.3 Fisheries Act

In Ontario, the federal Department of Fisheries and Oceans Canada (DFO) manages fish habitat and the Ontario Ministry of Natural Resources and Forestry (MNRF) manages fisheries. Section 35 (1) of the federal *Fisheries Act* precludes "*any work, undertaking or activity that results in serious harm to fish*" that are part of a commercial, recreational or aboriginal fishery, or to fish that support such a fishery.

In Ontario, the federal Department of Fisheries and Oceans Canada (DFO) manages fish habitat and the Ontario Ministry of Natural Resources and Forestry (MNRF) manages fisheries. Fish and fish habitat are protected under the federal *Fisheries Act* which was last amended on August 28, 2019 (DFO 2019). The guidelines recognize various threats to fish and fish habitat in Canada, including "*climate change, which is causing water temperatures to increase and is bringing changes to the geographical distribution of some species, rainfall patterns, water levels, flows, water chemistry, and temperature, that are important to support the characteristics and proper ecological function of fish habitat*".

DFO conserves and protects fish and fish habitat by applying protection provisions of the *Fisheries Act* in combination with the relevant provisions of the *Species at Risk Act* and the *Aquatic Invasive Species Regulations* to regulate works, undertakings or activities that could result in harmful impacts to fish and fish habitat. Although the stated preference is to avoid harmful impacts, where impacts cannot be avoided and are authorized habitat mitigation and offsetting are typically required.

Relevance to Peel: The federal *Fisheries Act* applies to urban forestry in Peel in cases where serious harm to fish or fish habitat has been approved by the agencies and involves the removal of individual trees and/or treed natural areas and needs for habitat mitigation and offsetting or compensation are identified. Mitigation can include effective protection of trees outside the construction/development area while offsetting can include the introduction or replacement of trees and shrubs to riparian areas to provide thermal mitigation and allochthonous material contributions.

Typically, such activities will also be within areas regulated by local conservation authorities and may also involve tree compensation on municipal lands (e.g., trees in a ROW being removed as part of a bridge replacement).

Where tree and/or shrub removals are permitted, the agencies will typically request or require compensation for and/or restoration of disturbed areas. In order to sustain and enhance the urban forest as part of this work, compensation should strive to replace the function of the trees

or shrubs removed (see tree compensation discussion in **Section 4.6.6**), and species selection and establishment techniques should consider the local biophysical and land use context as well as current and anticipated climate change stressors.

OPPORTUNITY: Urban Forest Enhancement Through the *Fisheries Act*

As part of the planning process in Peel the *Fisheries Act* (and potentially the *Species at Risk Act* as it applies to aquatic species) should be implemented so that opportunities for: (a) urban forest enhancement where approved impacts to fish habitat require mitigation and offsetting are identified and pursued, and (b) introduction or replacement of trees in lands adjacent to fish habitat affected by the proposed works are identified and pursued.

2.1.4 Plant Protection Act

The *Plant Protection Act* (1990) includes regulations to prevent "*the importation, exportation and spreading of pests injurious to plants and provision for their control and eradication*"[5]. The Canadian Food Inspection Agency (CFIA) is responsible for enforcing this act and specifically for the management of regulated invasive non-native species wherever they occur in Canada, defining the pests of regulation concern, implementing plant pest surveillance programs and communicating broad issues of concern that apply to pest management objectives (e.g., the movement of firewood). Currently regulated pests relevant to the urban forest include: Asian Gypsy Moth, Asian Long-horned Beetle (ALB) (which kills maples and other hardwood trees including poplar, birch and willow) and Emerald Ash Borer (EAB) (which kills ash trees).

Federal responsibilities are limited. As stated on the Natural Resources Canada website page for forest pest management: "*The responsibility for forest pest management in Canada depends on the nature of the pest and the location of outbreaks. In general, forest ownership determines this responsibility: so, federal, provincial, territorial and municipal governments are responsible for pest management within their specific jurisdictions. Private forest owners are responsible for their own forest pest management*"[6]. Nonetheless, CFIA does sometimes formally identify pest management zones and undertake or oversee follow-up monitoring. They also provide information and educational resources on-line[7], track reported infestations and, when outbreaks occur, may work with local municipalities to reduce the impacts associated with infestations.

The Canadian Forest Service (CFS) provides scientific and technological support for all forest pest matters of national jurisdiction and works with other federal agencies such as CFIA to provide expertise and tools on topics such as insect and disease identification, forest monitoring and climate change research.

Relevance to Peel: Although municipalities (and all landowners) are generally responsible for their own pest management, in some cases (e.g., for infestations that are localized and where local eradication is feasible), the CFIA may choose to formally identify a pest management zone

[5] Government of Canada – Plant Protection Regulations - accessed Oct. 22, 2019: https://laws-lois.justice.gc.ca/eng/regulations/SOR-95-212/page-1.html

[6] Natural Resources Canada – forest pest management – accessed Aug. 29, 2019: https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/wildland-fires-insects-disturban/forest-pest-management/13361

[7] CFIA Plant Pests and Invasive Species – accessed Aug. 29, 2019: https://www.inspection.gc.ca/plants/plant-pests-invasive-species/eng/1299168913252/1299168989280

and can be a helpful partner, particularly in terms of helping to educate the community about the rationale for the required management activities. For example, in response to an outbreak of ALB in northeast Mississauga and Toronto the CFIA established a regulated area for movement of tree material and continues to monitor this area for ALB[8].

Information provided by CFIA and Canadian Wildlife Service can also help inform municipal urban forest planning and management. For example, knowing that ALB has the potential to kill maple, birch, poplars and willows can help inform species selection guides for both natural and built-up areas, and may result in plans to avoid planting these species in known infestation zones until the pest is considered eradicated from that zone (e.g., such a recommendation was included in the Natural Area Plan for Paul Coffey Park which falls within the identified ALB control zone in Mississauga).

OPPORTUNITY: Build on Federal Forest Pest Knowledge and Regulatory Controls

Municipalities in Peel should leverage:

- **The technical and educational resources provided by the Canadian Food Inspection Agency (CFIA) as they relate to urban forest pests to assist with local urban forest planning and management;**
- **The role of CFIA to help regulate activities in formally identified management zones (where applicable) and undertake follow-up monitoring on pest presence/absence; and**
- **Information provided by CFIA to help inform municipal urban forest planning and management (e.g., area-specific and jurisdiction-wide species selection guidelines).**

2.2 Federal Level Resources That Support Urban Forest Planning

The federal government does not play a large role in municipal urban forestry, but it does sponsor a few organizations that either provide support for urban forest initiatives or offer funding that could be applied to urban forest initiatives, as described in this section. Links to these resources are provided in **Appendix A**.

2.2.1 Tree Canada

Tree Canada is a non-profit non-governmental organization based in Ottawa that is dedicated to supporting and providing resources for tree planting in urban areas across Canada. Tree Canada is funded by a range of sponsors (including the Government of Canada) and is the only Canadian organization with urban forestry as its core mandate. As part of this mandate it provides:

- Grants for community greening projects in urban areas
- Support for corporate tree planting events

[8]City of Mississauga Forestry – Asian Long-horned Beetle - accessed Aug. 29, 2019: http://www.mississauga.ca/portal/residents/parks-asian-long-horned-beetle

- Support for urban canopy reclamation in communities recovering from natural disasters such as tornadoes, fires and Emerald Ash Borer
- Programs to allow Canadian businesses to offset their carbon pollution with tree planting
- Hosting for Canadian Urban Forest Conferences
- Coordination of the Canadian Urban Forest Strategy, and
- A range of on-line resources related to urban forestry.

Grants available through Tree Canada change from year to year but often include funding for which municipalities are eligible as well as support for initiatives that benefit communities[9]. For example, potential support currently available to municipalities include the Community Tree grants (supporting green infrastructure) and Edible Trees grant (for establishment of trees and shrubs).

Credit: Tree Canada website 2019

Figure 2-1. Photo from a Tree Canada sponsored community greening event

[9] https://treecanada.ca/greening-communities/community-tree-grants/

Relevance to Peel: Tree Canada provides on-line resources, networking opportunities and several grants that could be of value to the Region and its partners. Resources of specific interest and relevance include: information provided in their online compendium of urban forest best practices (see **Appendix A**), networking opportunities through the Canadian Urban Forest Network (CUFN) and Canadian Urban Forest Conferences, and for a range of urban forest community stewardship activities led by municipalities and/or other stakeholders (e.g., schools, community groups, health care institutions) (see **Appendix A**).

OPPORTUNITY: Leverage Urban Forest Grants and Resources at the Federal Level

Municipal staff in Peel, Caledon, Brampton and/or Mississauga can leverage the on-line resources, networking opportunities and support for tree planting and management in Canada's urban areas offered by Tree Canada.

2.2.2 Canadian Urban Forest Network (CUFN) and Canadian Urban Forest Strategy

The Canadian Urban Forest Network (CUFN) is a pan-Canadian action group guided by a National Steering Committee with the secretariat based in the Tree Canada headquarters in Ottawa. The CUFN membership is composed of more than 900 municipal foresters, provincial and federal health, economy, environmental and natural resource agencies, professional organizations, business associations, educational institutions, non-governmental organizations and community groups.

The CUFN aims to:

- Facilitate the exchange of information about urban forestry in Canada (through conferences, workshops and the CUFN list serve)
- Provide input to the Canadian Urban Forest Strategy (through the National Steering Committee)
- Actively communicate with all interested parties at the local, provincial and national levels, and
- Facilitate the development of regional urban forestry action plans.

The *Canadian Urban Forest Strategy* (most recently updated for 2019-2024) was coordinated by Tree Canada[10] with the input of urban forest practitioners from across the country provided through the CUFN Steering Committee. The Strategy identifies five strategic goals related to: (1) national urban forestry capacity building; (2) communications and public education; (3) research; (4) techniques and technologies for urban forest planning and management; and (5) professional development. Although this document is not endorsed by the Canadian government, it identifies priorities for urban forestry at the federal level including the need for the CUFN Steering Committee to advocate for more sustained federal funding and engagement in urban forestry, and to promote urban forest research and information sharing.

Relevance to Peel: The CUFN provides a unique opportunity for municipal forestry in Peel to hear from and share information with other municipal foresters across Canada, and to join with

[10] Tree Canada (https://treecanda.ca) is a non-profit non-governmental organization based in Ottawa dedicated to supporting and providing resources for tree planting in urban areas across Canada (accessed Sept. 3, 2019).

other municipal foresters from across the country to ask for better and more sustained federal support for municipal urban forestry initiatives.

Given the current context of climate change and the renewed local and global interest in and support for tree establishment as a tool for helping to (a) mitigate and adapt to climate change in urban areas and (b) build community sustainability (e.g., FAO 2016; Bastin *et al.,* 2019), the need and timing for this type of advocacy has never been greater. This direction also builds on Action 5b of Peel's Urban Forest Strategy (2011) – "*Engage the Provincial and Federal Governments to provide funding for urban forest research and development*".

OPPORTUNITY: Networking at the Federal Level

Municipal forestry staff in Peel, Caledon, Brampton and/or Mississauga could join the CUFN to: (a) network with forestry professionals about best practices, (b) obtain and share research results on areas of interest (e.g., pilot projects on assisted migration, success of new techniques and technologies), and (c) help advocate for stronger and more long-term federal support for urban forestry in a context of climate change.

2.2.3 Federation of Canadian Municipalities (FCM)

The Federation of Canadian Municipalities is a non-governmental organization that represents and advocates for more than 2,000 municipalities across Canada. The FCM offers two resources (see **Appendix A**) that could be leveraged to support urban forest planning:

- The Green Municipal Fund which "*supports municipalities across Canada in their sustainable community development goals, improving the quality of air, water and land, as well as reducing greenhouse gas (GHG) emissions*". Since 2000, the GMF has funded over 1,250 municipal sustainability initiatives valued at $862 million. Examples of approved initiatives include: Looking for communal, low-impact ways to manage stormwater in Mississauga's Southdown District ($175,000, CVC and the Region of Peel, Ontario) and optimizing the environmental performance of the municipal eco-centre in Oka ($43,300, Municipality of Oka, Quebec).
- The Municipal Asset Management Program (see **Figure 2-2**) which focusses on: encouraging municipalities to use good asset management practices; supporting training and workshops; helping plan for and conduct data collection and analysis; and gathering and sharing knowledge and lessons learned. To-date, 506 projects worth $20 million have been funded with 27 partners.

In 2019 the federal government committed $1 billion to the Green Municipal Fund and renewed its commitment to the Asset Management Program, which are both intended to help Canadian cities and communities undertake innovative environmental projects that reduce GHG emissions and protect the air, water or land.

Relevance to Peel: The Green Municipal Fund is specifically intended for municipalities, targets brownfields, stormwater and transportation-based initiatives, and could be leveraged to support innovative urban forestry initiatives.

The Municipal Asset Management Program provides funding and training to assist Canadian municipalities in the development and implementation of asset management plans. For example, a series of workshops on climate change and asset management are being offered over 2020[11]and funding between $35,000 and $50,000 has been provided to numerous municipalities to develop frameworks for and/or modernize existing asset management plans.

The Municipal Asset Management Program could, in part, be leveraged to help integrate urban forest assets into local municipal asset management and to help educate municipal staff about approaches for this. Other related resources and best practices are provided in **Section 4.6.2**.

OPPORTUNITY: Provide and Seek Support for Bringing the Urban Forest into Asset Management Planning

Municipal forestry staff in Peel, Caledon, Brampton and/or Mississauga could: (a) explore urban forestry funding opportunities through the Federation of Canadian Municipalities' (FCM) Green Municipal Fund, (b) explore FCM funding to support asset management plan development – including integration of the urban forest in such planning, and (c) engage in training opportunities being offered by FCM related to asset management planning.

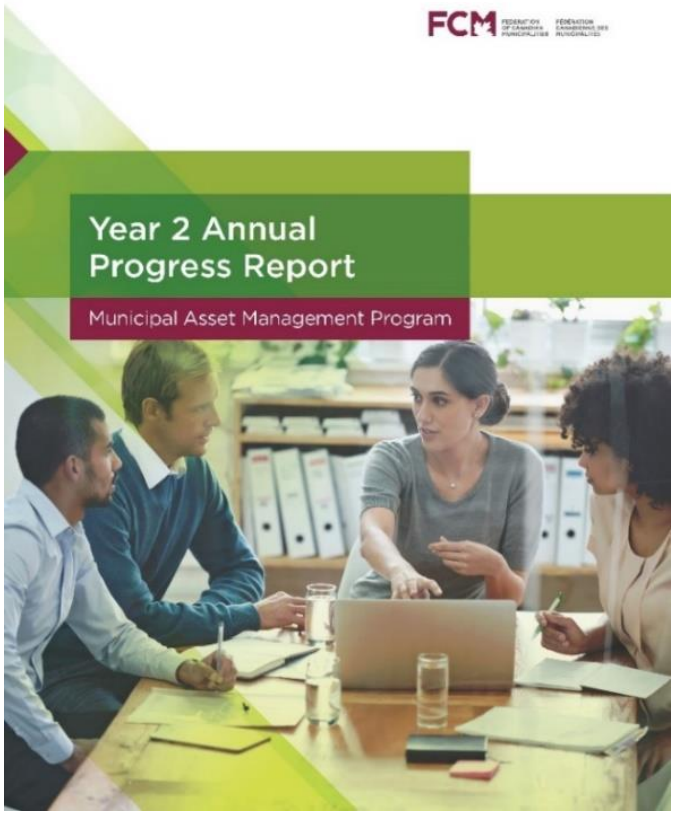


Figure 2-2. Report on its Municipal Asset Management Program in Canada

Source: Federation of Canadian Municipalities https://fcm.ca/en/resources/mamp/annual-report-municipal-asset-management-program-2017-2018

[11] https://fcm.ca/en/events-training/workshops-webinars/mcip/free-workshops-climate-change-and-asset-management

2.2.4 50 Million Trees Program

The 50 Million Trees Program was originally developed and funded by the Ontario government in response to the commitment that was made in Ontario's Climate Change Action Plan (2007) to plant 50 million trees in southern Ontario by 2020. This initiative focussed on the coordination and implementation of tree plantings on relatively large private properties in primarily rural parts of Ontario (i.e., properties that could accommodate at least 500 trees) between 2007 and 2019.

When the provincial funding for this program was cancelled in spring 2019, the federal government stepped in to fill this gap. The new 50 Million Trees Program[12] is run by the not-for-profit charity Forests Ontario who works with more than 80 partners including private tree nurseries, conservation authorities, stewardship groups, Indigenous groups, forestry consultants and municipalities to deliver the program. The program continues to target relatively large private properties for plantings (i.e., properties that can accommodate at least 500 trees), but has expanded its focus to include properties in urban as well as rural areas.

Relevance to Peel: Trees have already been planted on private lands in Peel's rural areas through partnerships with TRCA. Going forward, additional opportunities to support tree plantings in Peel's urban areas could be pursued both in partnership with the local conservation authorities and directly by the Region and/or local municipalities applying to be program partners through Forests Ontario. Approved partners are assigned 10,000 to 20,000 seedlings in their first year (S. Chamberlin, pers. comm. 2019 – see **Appendix B**).

OPPORTUNITY: Explore Partnership Opportunities with Forest Ontario

Peel Region and/or the local municipalities in Peel could apply to be partners of the 50 Million Trees Program (through Forests Ontario) and, if successful, could work with various landowners in the community to plant seedlings provided through the partnership on their properties.

2.3 Summary of Federal Tools Able To Support Urban Forest Planning

In Canada, urban forests tend to come under the responsibility of local municipalities. The federal and provincial governments occasionally make contributions related to individual emergencies (ice storms, fires, insect infestations etc.) and perform some research, but lack a sustained, long-term commitment for the support of urban forest stewardship.

Canadian Urban Forest Strategy 2019-2024

The Canadian government plays a limited role in supporting municipal urban forest planning initiatives. Four long-standing acts were identified (i.e., *Species at Risk Act*, *Migratory Birds Convention Act, Fisheries Act* and *Plant Protection Act*) that have some elements of them that

[12] https://www.forestsontario.ca/en/program/50-million-tree-program

may be leveraged to support some aspects of urban forestry in Peel, but their application is limited. There are also a few federally sponsored resources for municipal planners and foresters available through Tree Canada, the Canadian Urban Forest Network and the Federation of Canadian Municipalities. These are similarly limited in scope. A summary of best practices related to each of the identified tools is summarized in **Table 2-1**.

Table 2-1. Summary of Urban Forest Planning Best Practices and Opportunities for Peel Related to Available Federal Tools

Name of Tool (Guide Section)	**Best Practices and Opportunities for Peel Related to Available Federal Tools**
***Species at Risk Act*, 2002 (SARA)** (Section 2.1.1)	**BEST PRACTICE: Target Net Gains for the Urban Forest Through the Federal *Species at Risk Act* Process** Ensure that as part of the planning process in Peel: (a) federally Endangered and Threatened species (including trees) are screened for as part of planning processes on federal lands, (b) aquatic federally Endangered and Threatened species are screened for as part of planning processes on all lands, and (c) requirements and opportunities for protection and enhancement of tree cover adopt a net gain approach.
***Migratory Birds Convention Act*, 1994 (MBCA)** (Section 2.1.2)	**BEST PRACTICE: Apply the MBCA to Better Manage Tree Removals** As part of the planning process in Peel, recommend compliance with the MBCA to avoid disturbance to nesting birds as part of the planning process for both public and private lands. In part this means specifying that either no tree removals take place between April 1 and August 31 or when nesting birds are present, or that such removals can only take place if a qualified inspector confirms the trees have no active nests.
***Fisheries Act*, 1985** (Section 2.1.3)	**OPPORTUNITY: Urban Forest Enhancement Through the *Fisheries Act*** As part of the planning process in Peel the Fisheries Act (and potentially the Species at Risk Act as it applies to aquatic species) should be implemented so that opportunities for: (a) urban forest enhancement where approved impacts to fish habitat require mitigation and offsetting are identified and pursued, and (b) introduction or replacement of trees in lands adjacent to fish habitat affected by the proposed works are identified and pursued.
***Plant Protection Act*, 1990** (Section 2.1.4)	**OPPORTUNITY: Build on Federal Forest Pest Knowledge and Regulatory Controls** Municipalities in Peel should leverage: • The technical and educational resources provided by the Canadian Food Inspection Agency (CFIA) as they relate to urban forest pests to assist with local urban forest planning and management • The role of CFIA to help regulate activities in formally identified management zones (where applicable) and undertake follow-up monitoring on pest presence/absence, and • Information provided by CFIA to help inform municipal urban forest planning and management (e.g., pest-related species selection guidelines).
Tree Canada (Section 2.2.1)	**OPPORTUNITY: Leverage Urban Forest Grants and Resources at the Federal Level** Municipal staff in Peel, Caledon, Brampton and/or Mississauga can leverage the on-line resources, networking opportunities and support for tree planting and management in Canada's urban areas offered by Tree Canada.

Name of Tool (Guide Section)	Best Practices and Opportunities for Peel Related to Available Federal Tools
Canadian Urban Forest Network (CUFN) (Section 2.2.2)	**OPPORTUNITY: Network at the Federal Level** Municipal forestry staff in Peel, Caledon, Brampton and/or Mississauga could join the CUFN to: (a) network with forestry professionals about best practices, (b) obtain and share research results on areas of interest (e.g., pilot projects on assisted migration, success of new techniques and technologies), and (c) help advocate for stronger and more long-term federal support for urban forestry in a context of climate change.
Canadian Federation of Municipalities (Section 2.2.3)	**OPPORTUNITY: Provide and Seek Support for Bringing the Urban Forest into Asset Management Planning** Municipal forestry staff in Peel, Caledon, Brampton and/or Mississauga could: (a) explore urban forestry funding opportunities through the Federation of Canadian Municipalities' (FCM) Green Municipal Fund, (b) explore FCM funding to support asset management plan development – including integration of the urban forest in such planning, and (c) engage in training opportunities being offered by FCM related to asset management planning.
50 Million Trees Program (Forests Ontario) (Section 2.2.4)	**OPPORTUNITY: Explore Partnership Opportunities with Forest Ontario** Peel Region and/or the local municipalities in Peel could apply to be partners of the 50 Million Trees Program (through Forests Ontario) and, if successful, could work with various landowners in the community to plant seedlings provided through the partnership on their properties.

Credit: Canadian Urban Forest Strategy 2019-2024

Figure 2-3. Photo from a Canadian Urban Forest and Tree Canada sponsored event

3. Provincial Planning Tools

This section of the guide provides an overview of existing provincial legislation, policies, and other provincially sponsored resources relevant to the protection, management and/or enhancement of the urban forest. The summaries and assessments in this section have drawn on information from:

- A review of:
  - The Green Infrastructure Policy Update 2018 (GIO 2018)[13] and
  - *The Compendium of best urban forest management practices* (Bardekjian 2018)
- The consulting team's experience with the review and implementation of these regulations and policies as part of the planning process in various jurisdictions in Ontario, and
- A review of other resources (including documents, organizations and funding) identified through the research undertaken for this project or suggested by reviewers.

Each sub-section includes a brief summary of the identified tool, its relevance to urban forestry and its current or potential application to urban forestry in Peel. Relevant best practices and opportunities related to urban forestry are also highlighted in text boxes within each sub-section.

3.1 Provincial Policies and Legislation Able to Support Urban Forest Planning

Like the federal government, the Government of Ontario currently plays a limited role in urban forest planning and management. However, a wide range of provincial legislation does and can apply to urban forest assets on both public and privately-owned lands. These tools are described below.

3.1.1 Endangered Species Act

Species at Risk (SAR) in Ontario are species that are listed as Endangered, Threatened or Special Concern at the provincial level. The Ontario *Endangered Species Act* (2007) regulates the habitat of Endangered or Threatened species, while Special Concern species are protected under the category of significant wildlife habitat (SWH), which is included as a natural heritage feature in the Provincial Policy Statement (see **Section 3.1.3**). Prior to April 1, 2019 the Ministry of Natural Resources and Forestry (MNRF) regulated and enforced this Act. It is now regulated and enforced by the Ministry of Environment, Conservation and Parks (MECP).

The *Endangered Species Act* provides legal protection to Endangered or Threatened species confirmed on a site. Subsection 9(1) of the Endangered Species Act states that "*no person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk*

[13] Accessed August 2019 at: https://greeninfrastructureontario.org/2018-green-infrastructure-policy-update/

in Ontario List as an extirpated, endangered or threatened species" and Subsection 10(1) (a) states that "*no person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario list as an endangered or threatened species*".

Under subsection 17(1) of the Act, the Minster may issue a permit that authorizes a person to engage in an activity that would otherwise be prohibited under subsection 9(1) or 10(1) of the Act provided the applicable legislative requirements of subsection 17(2) are satisfied. Such permits may be issued where, in the MECP's opinion, the proposed activity "*will result in an overall benefit to the species within a reasonable time*" and "*reasonable alternatives have been considered, including alternatives that would not adversely affect the species, and the best alternative has been adopted*" (MNRF 2012). Permitting processes and requirements can differ depending on both the species and the land use context. In addition, Ontario Regulation 176/13 (2013) introduced exceptions for a few species (such as Butternut) whereby an Overall Benefit Permit is not required if the Registry process (as described in the regulation) is followed and appropriate compensation and monitoring are implemented and documented.

Credits: Government of Ontario website

Figure 3-1. Provincially endangered species occurring in Peel (clockwise): butternut, eastern flowering dogwood, northern long-eared bat and eastern small-footed bat

Relevance to Peel: The Region's website[14] currently lists 22 species of Provincially Endangered or Threatened species known to occur in Peel (i.e., one amphibian, one reptile, ten birds, three fish, one insect and six plants. The plants include four trees - American Chestnut (Endangered), Eastern Flowering Dogwood (Endangered), Kentucky Coffee Tree (Threatened) and Butternut (Endangered). There are also four species of bats listed as Endangered in the Province (Little Brown Bat, Northern Myotis, Eastern Small-footed Bat and Tri-colored Bat) (referred to collectively as SAR bats).

The two groups of Provincially Endangered or Threatened species most relevant to urban forest planning in Peel are the listed trees and bats. The Province, through its guidance (MNRF 2014b; MNRF 2017), has focussed its habitat protection efforts on forested habitats, treed areas and buildings in which SAR bats may be roosting. However, other listed SAR also rely on forested habitats for critical parts of their life cycles and any proposed activities on municipal or private lands that may harm a listed species or its habitat, including areas that qualify as SAR bat habitat, requires conformity with the ESA.

Different assessment processes and regulatory requirements apply for some of the listed species. For example, under Ontario Regulation 176/13 an Overall Benefit Permit is not needed for removal of up to ten retainable Butternut if the Registry process is followed. However, in general, if the habitat of Provincially Endangered or Threatened species can be removed, some type of compensation that shows an overall benefit to the species must be demonstrated. For example, compensation for Butternut trees that are negatively affected or approved for removal is typically at a ratio of between 5:1 and 10:1 and must be provided as part of a broader restoration of naturalized woodland habitat. See further discussion on urban forest compensation in **Section 4.6.6**.

BEST PRACTICE: Target Net Gains for the Urban Forest Through the Provincial *Endangered Species Act* Process

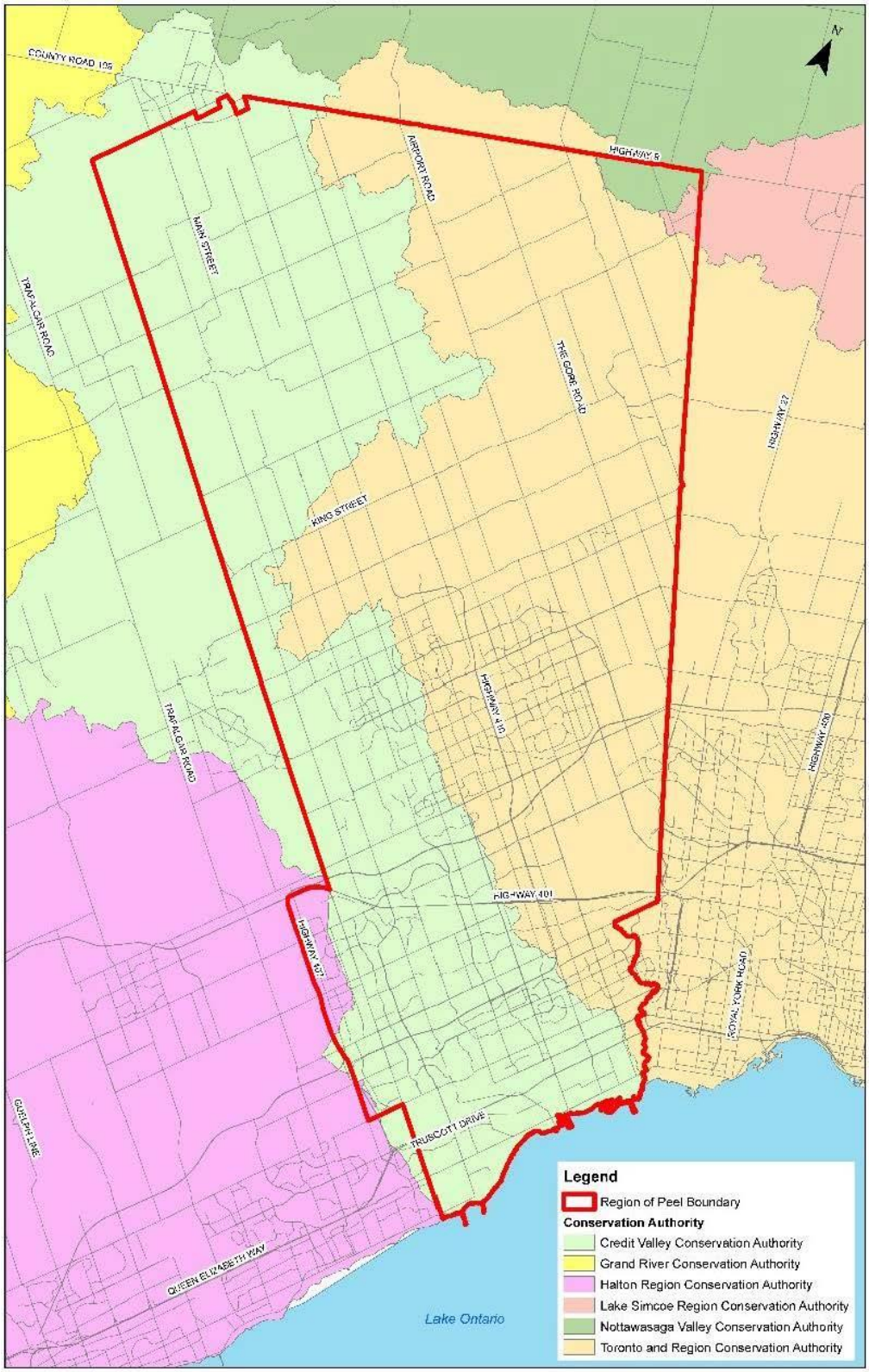
Ensure that as part of the planning process in Peel: (a) provincially Endangered and Threatened species (including trees) are screened for, and (b) requirements and opportunities for protection and enhancement of the urban forest take a net gain approach.

3.1.2 Conservation Authorities Act

The conservation authorities whose jurisdictions cover most of Peel Region are CVC and TRCA. Halton Conservation Authority also has a small part of its jurisdiction in the Region's southwestern corner and the jurisdictions of Nottawasaga Valley Conservation Authority and Lake Simcoe Region Conservation occupy two small areas in Peel's rural northeastern corner (see **Figure 3-2**).

Although the nature and scope of the role conservation authorities play in municipalities in Ontario varies somewhat depending on the conservation authority and the municipality, they typically are as follows.

[14] Region of Peel Data - Threatened Species and Endangered Species – accessed Aug. 26, 2019: https://www.peelregion.ca/planning/pdc/data/monitoring/greenlands/endangered.htm#plants. Note Species at Risk listings are updated periodically and such changes may not be reflected in this list.



Credit: Region of Peel

Figure 3-2. Map showing the conservation authorities within Peel Region

1) REGULATORY: as it relates to implementation and enforcement of Section 28 of the *Conservation Authorities Act* (1990) (which was recently updated through Schedule 2 of the *More Homes, More Choice Act* 2019) in lands regulated under this Act.
2) ADVISORY: in terms of providing comments and advice to municipalities on both planning and technical matters related to management of groundwater, surface water and natural heritage.
3) LANDOWNER: as it relates to the management of conservation areas owned by the authority as well as lands for which they may have management agreements (e.g., with the local municipality).
4) STEWARDSHIP: as it relates to undertaking a range of natural area management activities on lands under their ownership and/or management, as well as supporting activities such as reforestation, naturalization and invasive species management on lands owned by others.
5) RESEARCH AND MONITORING: as it relates to tracking the health of the watershed with respect to water and natural heritage resources.

In their regulatory role, conservation authorities regulate development within and adjacent to wetlands, watercourses, shorelines and hazard lands in accordance with the various conservation authority-specific regulations (e.g., Government of Ontario 2006a,b). Although conservation authorities do not regulate tree cutting *per se*, the removal of trees and other woody vegetation is often associated with other activities that are regulated (e.g., grading and construction) and where permits under the *Conservation Authorities Act* may be required. Therefore, conservation authorities and municipalities must work together to enforce protections under the *Planning Act*, *Environmental Assessment Act*, provincial plans, official plans, municipal bylaws and the *Conservation Authorities Act* as it relates to – among other things – the protection, removal and replacement of treed areas.

The specifics of the nature and scope of the advisory role of a conservation authority in a given municipality are typically outlined in a formal Memorandum of Understanding (MOU) between the authority and the municipality. This role can and often does include provision of advice on appropriate avoidance and mitigation measures related to treed natural areas.

Relevance to Peel: In addition to their regulatory role, the conservation authorities in Peel all have MOUs with the Region and local municipalities to review and provide advice on applications under the *Planning Act* where natural features and areas may be affected. The conservation authorities also have an advisory role to municipal infrastructure providers under the municipal Class Environmental Assessment (EA) process and a regulatory role for any municipal infrastructure works requiring a conservation authority permit. Furthermore, conservation authorities in Peel have programs to: manage the forests on their lands, assist eligible landowners with reforestation and other naturalization efforts on their lands, and undertake research and monitoring of watercourses and natural areas in their respective watersheds. Together, these roles provide a range of opportunities for supporting the protection and enhancement of the urban forest in Peel on both public and private property.

Currently, the Region and local municipalities regularly work with the conservation authorities in both their regulatory and advisory capacities to minimize disturbance to trees and other natural areas (including woodlands and forests) and pursue mitigation (including wooded habitat replacement and enhancement) where required. TRCA and CVC have also recently

begun to identify and pursue opportunities for treed area compensation in accordance with their recently published guidelines (e.g., TRCA 2018) but only in cases where, despite the presence of strong policies, impacts to wooded areas are approved and cannot be avoided or mitigated. Woodland and tree compensation are not required under the *Conservation Authority Act* but may be required by local official plans and/or tree bylaws.

Municipal best practices are discussed in **Section 4.1** and **Section 4.6.6** below.

3.1.3 Planning Act and Provincial Policy Statement

The provincial *Planning Act* (1990) establishes the framework for municipal planning and empowers Ontario municipalities to develop official plans and regulate development, including requiring landscaping with trees and shrubs. One of the purposes of the Act is "*to promote sustainable economic development in a healthy natural environment within the policy and by the means provided under this Act…*" This Act also defines "area of settlement" and "Provincial Plan", which includes the Greenbelt Plan, Niagara Escarpment Plan and Oak Ridges Moraine Conservation Plan as discussed in **Section 3.1.6**.

Under this Act, wooded natural areas within significant natural areas (including woodlands, wetlands and valleylands) are generally protected as the local planning authority must have regard for "*the protection of ecological systems, including natural areas, features and functions…"* (Part 1 (2) a) and local municipalities may pass zoning bylaws for "*prohibiting any use of land and the erecting, locating or using of any class or classes of buildings or structures within any defined area or areas, (i) that is a significant wildlife habitat, wetland, woodland, ravine, valley or area of natural and scientific interest, (ii) that is a significant corridor or shoreline of a lake, river or stream, or (iii) that is a significant natural corridor, feature or area"* (Part 5 (34)(3.2)).

Outside of protected natural features and areas, Part 5 of the Act also allows a municipality "*As a condition to the approval of the plans and drawings … a municipality may require the owner of the land to, (a) provide to the satisfaction of and at no expense to the municipality any or all of the following: … 6. Walls, fences, hedges, trees, shrubs or other groundcover or facilities for the landscaping of the lands or the protection of adjoining lands"* (Part 5 (41)(7)).

The *More Homes, More Choice Act* (2019)[15] to amend portions of the *Planning Act* came into force on September 3, 2019. These changes do not appear to have implications for the urban forest as municipal natural heritage and urban forest policies, and other applicable regulations including tree bylaws under the *Municipal Act* (see **Section 3.1.7**) still apply.

PROVINCIAL POLICY STATEMENT

The Provincial Policy Statement (PPS) was first issued in 1996 and most recently updated in 2020. The PPS is a key document released under the authority of the *Planning Act* that provides policy direction to municipalities and other planning authorities on matters of provincial interest as they relate to land use planning and development in Ontario. Development governed by the *Planning Act* must be consistent with the PPS.

[15] Amendments to the Planning Act – accessed Aug. 26, 2019: https://ero.ontario.ca/notice/019-0181

In terms of natural heritage and hazards, the PPS provides for appropriate land use planning and development while also:

- Protecting Ontario's natural heritage features and areas (including significant wetlands, significant woodlands, significant valleylands and significant wildlife habitat in southern Ontario) as well as linkages between these features and associated surface and groundwater features (Section 2.1); and
- Directing development outside of natural hazard lands (including flooding hazards, erosion hazards and/or dynamic beach hazards) and requiring planning authorities to "*consider the potential impacts of climate change that may increase the risk associated with natural hazards*" (Section 3.1).

The PPS is the most important and effective planning tool at the provincial level for ensuring the long-term protection of treed natural areas in Ontario. Section 2.1 provides policies for the protection of a range of significant natural features and areas, many of which are treed (i.e., significant wetlands, significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest (ANSIs), fish habitat (discussed in **Section 2.1.3**), and Endangered and Threatened species (discussed in **Section 3.1.1**). The PPS also includes policies that support the protection of wooded natural cover associated with watersheds (s.2.2), natural hazard lands (s.3.1) and natural heritage systems in southern Ontario (s.2.1.3). Together these protected features and areas support the bulk of the urban forest cover in southern Ontario municipalities[16].

According to the definitions in the PPS significant woodlands "*are to be identified using criteria established by the Ontario Ministry of Natural Resources"* but provincial criteria have yet to be developed. The guidance provided in the Natural Heritage Reference Manual (MNR 2010) provides criteria categories and choices regarding thresholds for significance, but ultimately the determination of significance must be made at the municipal level.

The natural heritage policies in the PPS do not allow development or site alteration in significant woodlands, significant valleylands, significant wildlife habitat or significant ANSIs "*unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions*" and simply do not allow development or site alteration in significant wetlands in Ecoregions 5E, 6E or 7E for any applications under the *Planning Act*. In practice this means that most jurisdictions in southern Ontario do not allow development within or adjacent to natural heritage features without a study (typically an Environmental Impact Study (EIS)) that: evaluates their significance in accordance with established policies; assesses the potential impacts of proposed development; and where impacts are anticipated recommends measures to avoid, minimize or compensate for those impacts, as appropriate depending on the applicable policies.

The PPS (p. 3) also states that: "*Within the framework of the provincial policy-led planning system, planning authorities and decision-makers may go beyond these minimum standards to address matters of importance to a specific community, unless doing so would conflict with any policy of*

[16] Additional guidance documents developed to support implementation of the natural heritage policies of the PPS include the Significant Wildlife Habitat Technical Guide (MNR 2000), the Significant Wildlife Habitat Mitigation Support Tool (MNRF 2015c) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E and 7E (MNRF 2015a,b).

the Provincial Policy Statement". This provides a framework for municipalities, at their discretion, to take a more stringent approach to protection of some natural heritage features in their official plans. For example, the City of Guelph does not allow development in features confirmed as significant woodlands or significant wildlife habitat[17].

In addition to these long-standing policies, the current PPS includes newer policies related to green infrastructure and climate change that are relevant to the urban forest. Policies 1.6.2 and 1.6.6.7 support the use of green infrastructure[18] (including urban forests) to contribute to the provision of public services such as stormwater management. The 2020 PPS strengthens the 2014 PPS policies and language related to climate change by directing municipalities to "*prepare for the impacts of a changing climate*" in multiple sections of the plan. This shift includes supporting economic prosperity by "*minimizing negative impacts from a changing climate and considering the ecological benefits provided by nature*" (s. 1.7.1.k), including those provided by forests and individual trees.

The 2020 PPS also includes policy (s.3.1.8) which generally directs development outside of lands containing "*hazardous forest types for wildlife fire*" except in accordance with established mitigation standards. However, the Ministry of Natural Resources and Forestry (MNRF) and municipalities in Ontario are still working through how this provincial direction is to be addressed and few (if any) have incorporated this direction into their official plans as of yet. This is nonetheless an emerging policy area in Ontario that is expected to have some relevance to urban forests and risk management in a climate change context.

Relevance to Peel: The Region's current Official Plan includes criteria for the identification of significant woodlands and significant wildlife habitat (based on the *Peel-Caledon Significant Woodlands and Significant Wildlife Habitat Study* NSEI *et al.,* 2009) and policies providing strong protection for of the natural features and areas identified in the PPS. These policies (which apply outside areas regulated by the Greenbelt - see **Section 3.1.6**) ensure that provincially and regionally significant natural heritage features and areas are captured in the Region's Greenlands System policies and mapping.

Local municipal official plans in Peel recognize and incorporate the Region's Greenlands policies through the identification of, among other features, significant woodlands, significant wetlands, significant valleylands and significant wildlife habitat. Together these policies provide strong protection for trees within significant natural areas throughout Peel. Opportunities for enhancing official plan policies related to the urban forest are discussed further in **Section 4.1**, although the emphasis of the discussion is on policies and opportunities that apply to trees outside of natural heritage features and areas protected in accordance with the PPS, as compliance with the PPS is considered a well-established current practice rather than a best practice in the context of Peel and southern Ontario.

Beyond natural heritage, the latest versions of the PPS (i.e., 2014 and 2020) have begun to include language and provide policy direction around climate change, green infrastructure and

[17] City of Guelph Official Plan: https://guelph.ca/plans-and-strategies/official-plan/

[18] "Green infrastructure" is defined in the 2020 PPS as "*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*".

the urban forest. Updates to the Region's and local municipal official plans (as well as other related planning documents and strategies) have started to address a growing recognition of the importance of planning for climate change, and the critical role natural assets like the urban forest play in helping to both adapt to and mitigate some of the impacts associated with climate change.

BEST PRACTICE: Continue to use Natural Heritage Policies to Support Protection of the Urban Forest

The Provincial Policy Statement (PPS) is the most important and effective planning tool at the provincial level for ensuring the long-term protection of treed natural areas in Ontario. Municipalities in Peel, and elsewhere, should continue to use PPS policies related to natural, water and natural hazards to help protect trees associated with natural heritage features and areas identified as significant at the provincial and municipal levels, and within identified natural heritage systems.

BEST PRACTICE: Incorporate Provincial Policies Related to Green Infrastructure and Climate Change

The most recent iterations of the PPS recognize: the value of green infrastructure (including the urban forest), and the need for communities to be prepared for climate change. To reflect this shift at the municipal level, planning documents should (a) recognize urban forests as a component of green infrastructure, (b) adopt the Provincial Policy Statement definition of green infrastructure, and (c) implement policies and strategies that support and require the use of natural assets such as the urban forest to help address climate change impacts.

3.1.4 Invasive Species Act

Ontario's *Invasive Species Act* (2015) provides the Province with the authority to: (a) make regulations prescribing invasive species, (b) classify invasive species as either prohibited or restricted, (c) designate an invasive species control area, and (d) prescribe and enforce actions to control or eradicate the classified species, including development of a prevention or response plan. A key objective of the Act and the Ontario Invasive Species Strategic Plan (2012) is to prevent new invasive species from arriving and establishing in Ontario, as the most efficient and cost-effective way to manage invasive species is to prevent their introduction in the first place.

Under the Act an "invasive species" is defined under Section 1 as "*a species that is not native to Ontario, or to a part of Ontario, and, (a) is harming the natural environment of Ontario or of the part of Ontario in which it is present, or (b) is likely to harm the natural environment of Ontario or of a part of Ontario, regardless of whether it is present in Ontario or in a part of Ontario*". Such species may be regulated based on several considerations, including the species' biological characteristics, risk of harm to the natural environment, dispersal ability and social or economic impacts.

Currently, no tree pests are prescribed under this Act and the plants prescribed are limited to aquatic species found in the Great Lakes, *Phragmites* (a wetland species), Dog-strangling Vine/Black Dog-strangling Vine and Japanese Knotweed. Dog-strangling Vine (see **Figure 3-3**) impacts deciduous forests, alvars, meadows and bluffs as well as agricultural fields. Japanese Knotweed can infest woodlands, grasslands and riparian habitats. It is an offence to bring or release these species into Ontario, or to propagate or sell them.

Credit: Canadian Food Inspection Agency website

Figure 3-3. Dog-strangling vine (left) is classified as restricted under the Invasive Species Act; emerald ash borer which kills ash trees is not (right)

Enforcement efforts are largely focussed on crown lands and in provincial parks under the authority given to MNRF Conservation Officers and Park Wardens, although the Minister may appoint other persons. The most intrusive powers (e.g., destruction of private property) must be authorized by the Minister and are intended for use only in high ecological risk situations. Compensation may be paid in specified circumstances.

Relevance to Peel: Invasive plants are one of the most significant threats to the native biodiversity in Peel and elsewhere (Government of Ontario 2012) and are also a significant threat to the health and resilience of the urban forest. Invasive plants known to cause extensive damage in Peel's forests and wooded natural areas include Common Buckthorn and Garlic Mustard, while invasive pests currently impacting the Region's trees and forests include Emerald Ash Borer (EAB) and Gypsy Moth, with Asian Long-horned Beetle (ALB) currently considered under control but still a serious threat. In addition, climate change has already and is expected to further exacerbate this threat by making conditions in Peel (and elsewhere in Ontario) more hospitable to a greater range of pests for longer durations.

Although prevention of invasive pest establishment is ideal, it is often not feasible given the ranges of some pests as well as the tremendous mobility of people and goods. Once established, the costs associated with managing invasive tree pests and plants can be

substantial[19]. While regulation can provide a partial management solution, it must be coupled with outreach, targeted active management directed towards the pest where possible and deemed appropriate, and ongoing management measures that reinforce urban forest sustainability (e.g., species diversity, maintenance of healthy trees) and resilience in the face of multiple stressors.

With respect to invasive plants, they are already well-established in Peel (and throughout southern Ontario), particularly in urban and urbanizing areas, and eradication is simply not feasible. However, some level of control and mitigation is still desirable in targeted areas to help sustain native biodiversity (e.g., City of Mississauga 2014a, b). Therefore, as with invasive pests, while regulation can provide a partial management solution, particularly for species that are hazardous to humans, to be even partially effective it should be combined with outreach, targeted active management directed towards priority species and/or areas, and ongoing management measures that reinforce urban forest sustainability and resilience in the face of multiple stressors.

OPPORTUNITY: Leverage the Invasive Species Act for Forest Pest Education

The Region and its partners could explore options for leveraging the Invasive Species Act as an educational tool and potentially even a regulatory tool for helping to sustain urban forest native biodiversity and resilience if selected "high priority" invasive plants and/or pests were listed. Listed species may also be more likely to get resource support from the Canadian Food Inspection Agency and/or Canadian Wildlife Service (see Section 2.1.4) for the implementation of approved invasive species management plans.

3.1.5 Infrastructure for Jobs and Prosperity Act

Under the *Infrastructure for Jobs and Prosperity Act* (2015), the Asset Management Planning for Municipal Infrastructure Regulation (O. Reg. 588/17) introduced by the Province included some direction to support inclusion of green infrastructure – including urban forests – in the asset management process. This regulation was first approved in 2017 to ensure that all municipalities in the Province had a strategic asset management policy by July 1, 2019 and a comprehensive asset management plan in place by July 1, 2024 to inform investment decisions regarding their infrastructure. The Province also released a guideline document called *Building Together*[20] that includes the use of green infrastructure to leverage natural processes and reduce the need for costly engineered solutions.

In part, due to the Green Infrastructure Ontario (GIO) Coalition advocacy, O. Reg. 588/17 includes (a) green infrastructure in the definition of an infrastructure asset and as a consideration in municipal lifecycle management strategies, and (b) a definition for green infrastructure asset that includes "natural *heritage features and systems, parklands, stormwater management*

[19] For example, the City of Toronto spent $37 million to cut and replace trees infected with EAB over five years on municipal lands alone, the City of Mississauga has allocated $51 million to manage the impacts of this pest between 2013 and 2022, and management of invasive shrubs and flora in natural areas can cost over $1,000 per hectare per year (NSEI 2017).

[20] Government of Ontario, Archived – Building Together – Guide for municipal asset management plans, last accessed Nov. 27, 2019: https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans#section-2

systems, street trees, urban forests, natural channels, permeable surfaces and green roofs". This regulation also requires that municipalities consider options to reduce full lifecycle costs of assets, including the potential use of green infrastructure solutions.

Relevance to Peel: The Province and the GIO Coalition have recognized both the opportunity and the need for green infrastructure, including urban forests, to be included in the asset management process. Further discussion of the integration of urban forests in asset management in Peel is discussed in **Section 4.1** and **Section 4.6.2** along with several examples of best practices in Ontario.

BEST PRACTICE: Value the Urban Forest as a Municipal Assets

The policy framework in Ontario has been evolving over the past five years to (a) recognize the value of green infrastructure (including urban forests) and (b) require municipalities to consider value and integrate green infrastructure into overall asset management planning. To reflect this shift at the municipal level, planning documents should work to incorporate urban forests (and other natural assets) into municipal asset management planning.

3.1.6 Growth Plan, Greenbelt Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plan

Under the *Planning Act* (1990), Ontario's Growth Plan (2017) (including the draft amendments in 2019) the related greenbelt plans (i.e., Greenbelt Plan (2017), Oak Ridges Moraine Conservation Plan (2017) and Niagara Escarpment Plan (2017)) are the growth management tools provided by the Government of Ontario to place controls on the expansion of existing settlement areas at a macro level (Muldoon *et al*. 2009). These plans (and their related Acts) extend various levels of protection to natural areas as defined in the plans and identified with guidance from the various supporting technical papers (e.g., MNRF 2012).

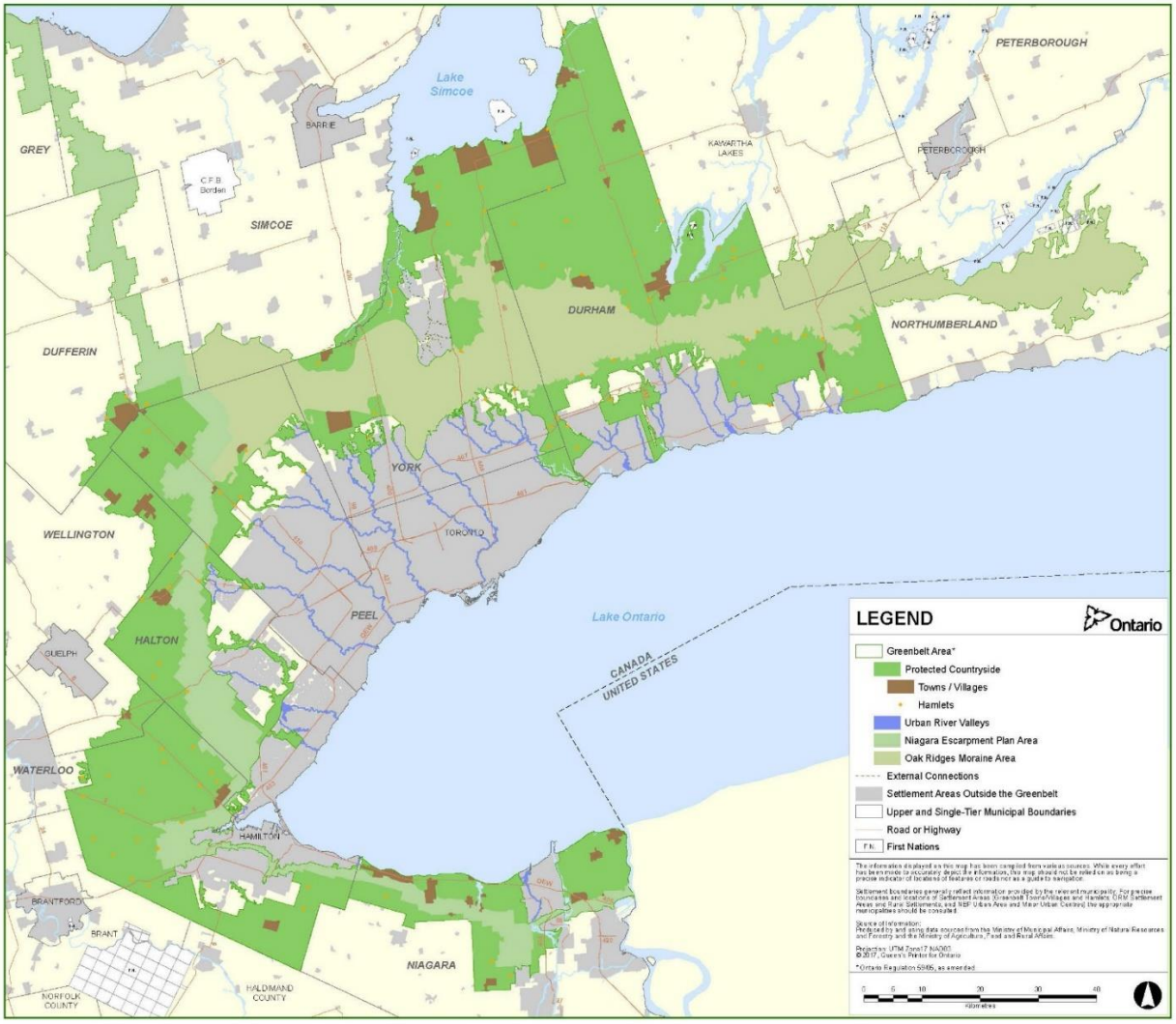
The Greenbelt Plan is an umbrella plan that provides protection to the agricultural land base and the ecological features and functions outside of identified settlement areas. Within the settlement areas outside the Greenbelt, the Greenbelt Plan provides policies (3.2.1.3) and mapping (see **Figure 3-4**) for "Urban River Valleys" that connect the Greenbelt to Lake Ontario. These policies encourage the conservation and management of the valleys but only apply where these lands are in public ownership.

These plans also include some policy language around climate change and green infrastructure. These policies (cited below) include natural heritage systems as part of municipal green infrastructure, recognize green infrastructure can help communities mitigate the impacts of and adapt to climate change, and in the case of the Niagara Escarpment Plan, include green infrastructure in the definition of infrastructure.

Relevance to Peel: Although the Greenbelt Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plan areas all fall within the Region of Peel, their boundaries for these plan areas are outside of Peel's settlement areas (except for a very small portion of the Greenbelt Natural Heritage System extending into western Brampton) and therefore have limited relevance for this guide. However, the Greenbelt Plan does provide policy direction for

municipalities encouraging protection of the Urban River Valleys running through Caledon, Brampton and Mississauga to Lake Ontario.

In addition, the Greenbelt, Oak Ridges Moraine and Niagara Escarpment plans each include some policies related to climate change and green infrastructure that could be referenced or even considered as models as part of future municipal plan reviews and updates.



Credit: Government of Ontario Greenbelt Plan (2017)

Figure 3-4. Schedule 1 from the Greenbelt Plan showing Urban River Valley connections in Peel and elsewhere (in blue)

Specific examples of such policies include:

- Greenbelt Plan (2017), Section 4.2: *"Climate change also poses a challenge for maintaining existing infrastructure and planning for new infrastructure. 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".*

- Oak Ridges Moraine Conservation Plan (2017), Policy 11: *"The purpose of Natural Core Areas is to maintain and where possible improve or restore the ecological integrity of the Plan Area, by … (g) protecting and restoring natural areas and features that sequester carbon and provide ecological functions, including water storage, to help reduce the impacts of climate change".*

- Oak Ridges Moraine Conservation Plan (2017), Policy 45 (3):*"In considering an application for development or site alteration, the municipality shall seek to reduce areas with impervious surfaces and increase areas retained in a natural undisturbed state, in order to minimize stormwater volumes and contaminant loads and increase capacity to adapt to climate change".*

- Niagara Escarpment Plan (2017) Policies 1.6.8. 5, 1.7.5.2 and 1.8.5.2*:* Development within Minor Urban Centres, Urban Areas and Recreation Areas *"should encourage reduced energy consumption, improved air quality, reduced greenhouse gas emissions (consistent with provincial reduction targets to 2030 and 2050) and work towards the long-term goals of low carbon communities, net-zero communities and increased resilience to climate change, through maximizing opportunities for the use of green infrastructure and appropriate low impact development".*

OPPORTUNITY: Build on Provincial Plan Policies That Link Use of Green Infrastructure and Natural Assets to Climate Change Mitigation

The 2017 Greenbelt, Oak Ridges Moraine and Niagara Escarpment provincial plans each include policies that support the use of green infrastructure and/or natural systems in community planning to help build resilience to climate change. These policies could be referenced or adopted for use in municipal official plans and other planning documents.

3.1.7 Municipal Act

The *Municipal Act* (2001) sets out rules for all municipalities in Ontario, except for the City of Toronto which has its own Act. This Act recognizes municipalities as a responsible and accountable level of government and gives them broad powers to pass bylaws and govern within their jurisdiction.

With respect to urban forest planning, this Act is relevant because it gives municipalities the authority to regulate the injury or destruction of individual trees or woodlands on public and private lands. Key elements of this legislation are found in the Natural Environment sections of the Act (Ch. 25)[21]. These sections of the Act also provide powers for municipalities to enact site alteration bylaws, which are sometimes applied in conjunction with tree bylaws.

Key definitions and clauses are as follows.

[21] Government of Ontario, Municipal Act, 2001 – accessed Aug. 26, 2019 - https://www.ontario.ca/laws/statute/01m25#BK156

- "Woodlands" means areas of 1 ha or more defined in accordance with the *Forestry Act* (s. 135.3) (discussed in **Section 3.1.8**).
- Local municipalities are given the authority to develop tree bylaws and regional municipalities are given the authority to develop woodland bylaws, but regional and local municipalities can delegate these powers to each other as long as the bylaws are harmonized (s. 135.1, 135.2, 135.4, 135.8, 135.10).
- Woodland bylaws must have regard for good forestry practices as defined in the *Forestry Act* (s. 135.5).
- There are eight exemptions (s. 135.12) where tree bylaws do not apply including:
    - Activities undertaken by a municipality
    - Activities undertaken by a licensed surveyor
    - The injury or destruction of trees approved "*as a condition to the approval of a site plan, a plan of subdivision or a consent under section 41, 51 or 53, respectively, of the Planning Act or as a requirement of a site plan agreement or subdivision agreement entered into under those sections*" or as a condition to a development permit authorized under s. 70.2 of the *Planning Act*", and
    - The injury or destruction of trees for an electrical transmission or distributions system or to create or expand an approved pit or quarry development.
- "[A] *municipality may provide trees to the owners of land adjacent to any highway and may plant the trees on the owners' land with their consent*" (s. 141).

The *Municipal Act* also provides municipalities with powers to: require permits and impose conditions to a permit, order discontinuation of activity in cases of infractions, set fines (within established limits) and order an offender to replant trees. It also provides the property owner with the right to appeal if their permit application is rejected by the municipality and they do not accept the terms of that rejection.

In 2017 the Ministry of Municipal Affairs and Housing updated the *Municipal Act* requiring municipalities to adopt and maintain a policy that speaks to "*the manner in which the municipality will protect and enhance the tree canopy and natural vegetation in the municipality*" (s. 270.1.7). Several municipalities in Ontario have developed short policy documents in response to this new requirement. However, these are largely smaller towns and townships outside the Greater Toronto Area that did not already have any policies explicitly addressing to the urban forest (e.g., Town of Blue Mountains[22], Township of Parry Sound[23]) or jurisdictions that decided to address the requirement by developing a memorandum summarizing how their existing policies and by-laws already address the requirement (e.g., County of Middlesex[24], Grey County).

The *Municipal Act* (2001) was also recently amended with Bill 68 – the *Modernising Ontario's Municipal Legislation Act* (2017) – which (among other changes) requires municipalities to demonstrate: "*The manner in which the municipality will protect and enhance the tree canopy and natural vegetation in the municipality*" (Section 270.1). Several area and local municipalities (e.g., Haldimand County, Middlesex County, Town of Blue Mountains, Town of New Tecumseth,

[22] Accessed Sept. 3, 2019: https://www.thebluemountains.ca/document_viewer.cfm?event_doc=964

[23] Accessed Sept. 3, 2019: https://www.parrysound.ca/en/do-business/urban-tree-canopy-native-vegetation-policy.asp

[24] Accessed Sept. 3, 2019: https://egenda.middlesex.ca/files/agendas/194/3197_B_3_CW_Action_Feb_12_Tree_Canopy_Policy.pdf

Town of Whitby) have developed specific policy directives to address this requirement, while others have already addressed it through their existing planning and policy framework.

Relevance to Peel: Tree and woodland bylaws are a well-established and well-used planning tool. More than 50 regional and local municipalities in southern Ontario have enacted tree and/or woodland bylaws under the *Municipal Act*, with some of the earliest bylaws dating back to the 1990's. In Peel, the Region has delegated its authority to the local municipalities which have each enacted a combination of tree and/or woodland bylaws. Tree and woodland bylaws and best practices related to these tools are discussed in detail in **Section 4.3.**

With respect to the relatively new requirement from the *Modernising Ontario's Municipal Legislation Act* (2017) for a policy that specifically speaks to tree canopy and natural vegetation protection, the Region and its local municipalities already have policies, bylaws and strategies in place that explicitly and implicitly address its requirements. Therefore, an additional policy to address this regulatory requirement is not deemed necessary in Peel at the regional or local level.

3.1.8 Forestry Act

The provincial *Forestry Act* (1990)[25] is intended to regulate agreements for the sale, lease and/or management of forest tracts between the Province and other owners, including a conservation authority or a municipality. Although the overall scope of the Act is not of particular significance to urban forest planning in Peel, the Act includes definitions for "good forestry practices", "woodlands" and "boundary trees" which are the standard definitions used in tree and woodland bylaws. These definitions have also been adopted for use in some provincial and municipal plans.

Older Forest Conservation Bylaws currently in force under the *Forestry Act* also remain in effect until they are repealed (Forest Conservation Bylaw Committee and Lower Tier Advisory Group 2013).

Relevance to Peel: In Peel, Caledon's and Brampton's woodland bylaws reference the "good forestry practices" definition from the *Forestry Act*. In addition, the Region and the City of Mississauga adopted the *Forestry Act* definition of "woodland" in their official plans with some modifications. However, none of the tree or woodland bylaws in Peel provide a definition or process relating to "boundary trees" (see **Figure 3-5**). Tree and woodland bylaws and best practices related to these tools are discussed in detail in **Section 4.3**.

3.1.9 Heritage Act

The Ontario *Heritage Act* (1990) is primarily intended to be used for the designation of heritage buildings and landscapes but can capture wooded areas and can also be used to designate specific trees of historical and/or cultural value. Under Part IV s. 29 and 37, specific heritage trees can be protected by municipal bylaw but must be associated with a cultural heritage

[25] Note that there is also a federal Forestry Act (1985), but it only relates to the government's ability to regulate the protection and management of Forest Experiment Areas on federal lands and does not have any relevance in Peel. Ontario also has a Professional Forester's Act (2000) which defines and regulates the practice of professional forestry, which is also not relevant to this guide.

landscape having provincial significance. Under the *Heritage Act* the process allows for protection through a voluntary conservation easement agreement or by designation.

Most municipalities in Ontario do not use the *Heritage Act* as a legislative tool to regulate tree protection because it is a lengthy process that provides protection for only a small subset of trees (e.g., only applies to trees of historical or cultural value or associated with designated heritage landscapes). There are however a few municipalities that regulate the removal of heritage trees (as defined by those municipalities) through tree bylaws developed under the authority of the *Municipal Act* (e.g., Town of Fort Erie, Town of Gananoque) and others that regulate trees/treed areas that have been formally designated under the *Heritage Act* through their tree bylaws (e.g., City of Guelph, City of Toronto, City of Mississauga). Furthermore, arguably any municipality that regulates the injury or destruction of large, mature trees is capturing what could be considered "heritage trees" in their bylaw.

Despite its narrow legal applicability to regulating the removal of trees, the *Heritage Act* has been successfully leveraged as an outreach tool[26] by several municipalities that have developed and maintain heritage tree lists. Part IV s. 27 (1.2, 1.3) of the Act allows municipalities to maintain a list of properties considered to have cultural value or interest, which can include trees. These properties are not designated under the *Ontario Heritage Act* but may be described and can be placed on a municipal registry without the property owner's consent. The Ontario Urban Forest Council (OUFC) maintains a database of such trees[27].

Although having a municipally registered heritage tree does not confer any power on the municipality to prevent damage to or removal of the tree(s) on the property, the local Municipal Heritage Committee (if one exists) must be consulted and the property owner must give 60 days notice to the municipality regarding their intention to damage or destroy the tree. This process can provide an opportunity for outreach to the landowner prior to removal and may also identify good local tree seed sources.

Relevance to Peel: In Peel, none of the extant tree or woodland bylaws include references to the *Heritage Act* or heritage trees except for Mississauga's private tree by-law (254-12) which stipulates that heritage trees cannot be injured or destroyed unless approved under the requirements of the Ontario *Heritage Act*. There are also currently no known heritage tree registries in Peel. Therefore, there is an opportunity to (a) capture any trees designated through the *Heritage Act* in existing tree bylaws and (b) develop municipal heritage tree registries as an outreach tool. However, in the current climate change context, urban forestry resources might arguably be better spent on outreach that promotes the contributions made by all trees to improved air quality, carbon sequestration, energy savings and moderation of urban heat island effects.

Tree bylaws as a planning tool to support urban forest goals (including consideration of trees designated under the *Heritage Act*) are discussed further in **Section 4.3**.

[26] For example, the City of Guelph hosts an annual guided Tree Tour where selected heritage trees are viewed.
[27] https://www.oufc.org/heritage-trees/identifying-heritage-trees/

3.1.10 Health Protection and Promotion Act

Ontario public health standards are published by the Minister of Health and Long-Term Care under the authority of Section 7 of the *Health Protection and Promotion Act*. The standards identify the minimum expectations for public health programs and services which are implemented by regional boards of health. Program and topic-specific guidelines are also developed to provide direction on how boards of health are to approach specific requirements within the standards. Of particular relevance to this guide is the *Healthy Environments and Climate Change Guideline*[28] (Ministry of Health and Long-Term Care 2018).

This guideline is intended to assist boards of health in developing approaches for promoting healthy built and natural environments to enhance population health and mitigate environmental health risks, including risks related to climate change. The objective of this guideline is to identify approaches for boards of health that must be used or considered to:

- Enhance public health capacity to address risk factors in the environment, including the impacts of climate change, using population-based activities (e.g., Vulnerability Assessments)
- Identify and enable mitigation of risk factors related to environmental exposures that can contribute to the burden of illness
- Facilitate preventative strategies for advancing healthy built and natural environment initiatives using standard provincial approaches, and
- Align existing public health initiatives across boards of health to ensure optimum delivery from both Healthy Environments and Chronic Disease Prevention Standards.

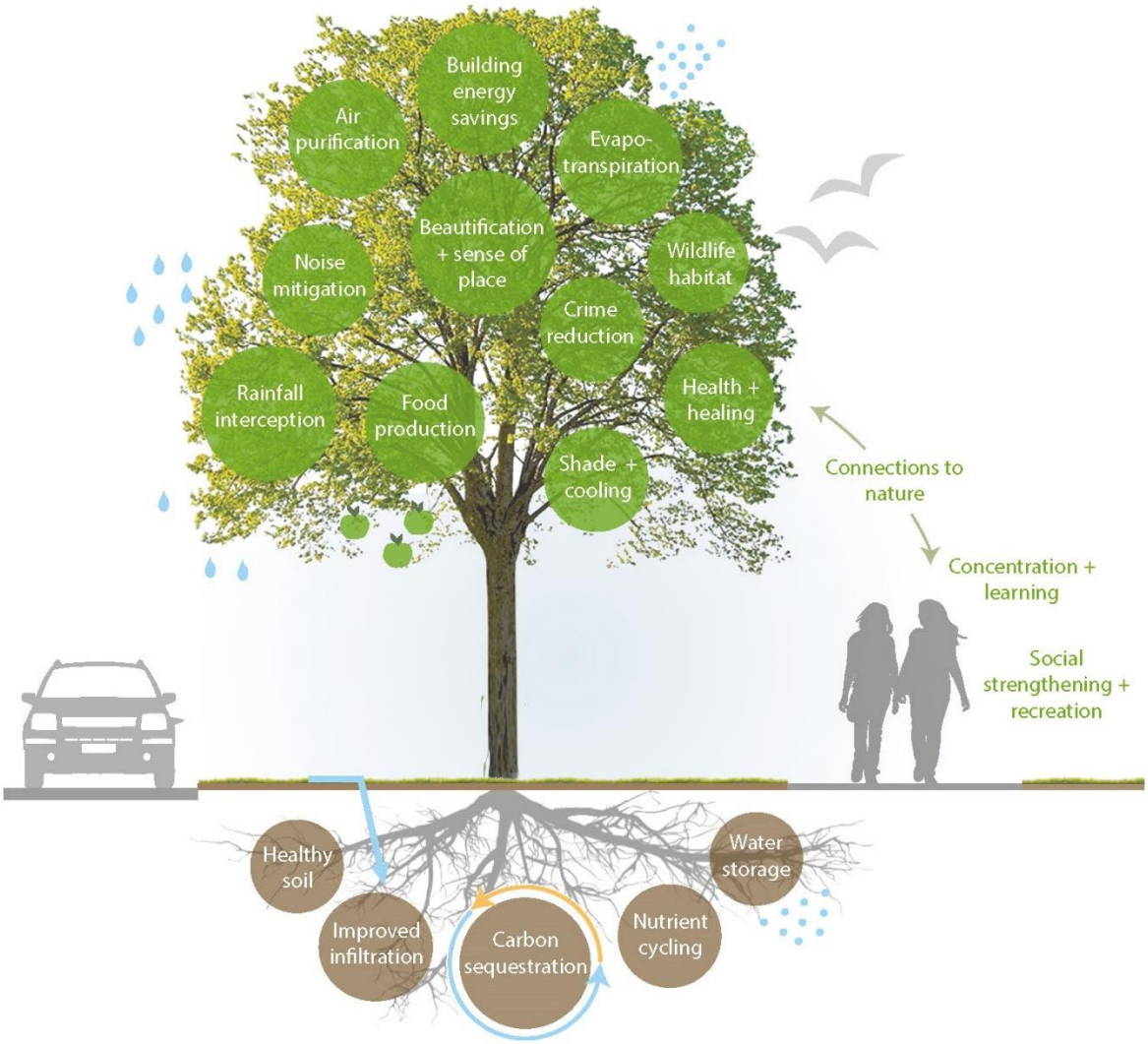
Specific approaches include requirements for boards of health to: (a) participate in local processes for developing, updating or reviewing municipal bylaws and standards to improve health outcome, and (b) collaborate with municipalities under the Ontario *Planning Act* to address local impacts of climate change and reduce exposure to environmental health hazards in the community. Collaborative activities may include reviewing and providing comments to local planning authorities on regional and local official plans (e.g., air quality impacts, protection of ground water, integrating green space and shade policy options to adapt to rising extreme heat events, and flood protection).

Relevance to Peel: The Region has included representatives from Peel Health Services in the development of this guide as well as for the development of Peel's Tree Planting Prioritization Tool. Going forward there is a need to engage representatives from Peel Health Services in the development of the Region's new official plan, and a need to work with Peel Health Services to clearly align natural environment (including urban forest) planning initiatives with human health hazard reduction as it relates to the local impacts of climate change.

[28] Ministry of Health and Long-Term Care – accessed Oct. 23, 2019: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Healthy_Environments_and_Climate_Change_Guideline_2018_en.pdf

BEST PRACTICE: Include Planning Approaches Designed to Mitigate Human Health Risks Related to Climate Change Impacts

Requirements under the Ministry of Health's Healthy Environments and Climate Change Guideline (2018) reinforce the need for the Region and local municipalities to work with Peel Health Services to ensure natural environment (including urban forest) planning supports: (a) data collection that assists with identification of human health risk factors in the environment related to climate change, (b) approaches that enable mitigation of these risk factors, (c) strategies that advance a healthy built and natural environment, and (d) alignment of natural environment and public health initiatives where possible.



Credit: City of Vancouver Urban Forest Management Plan (2018)

Figure 3-5. Illustration environmental and human health benefits provided by trees

3.1.11 Environmental Assessment Act

Ontario's *Environmental Assessment Act* (1990) provides a process to ensure that governments and public bodies consider potential environmental effects before an infrastructure project begins. In municipalities like Peel in southern Ontario, the act is typically triggered as part of proposals to build or improve electricity facilities and lines, transportation facilities and routes, waste facilities, water and wastewater facilities, and other infrastructure under provincial or municipal jurisdiction. This process requires engagement with Indigenous groups and consultation with government experts, stakeholders and the public. Notices and documentation must be sent to the MECP for review[29].

Under the environmental assessment (EA) process the term "environment" includes the natural, social, cultural, built and economic environments. Depending on the complexity and the anticipated environmental effects of the project it may fall into a Schedule A, B or C EA. All aspects of the "environment" need to be considered as part of the process which basically consists of:

- Phase 1 (all schedules) - Identify the problem or opportunity
- Phase 2 (schedule B and C) - Identify alternative solutions taking into consideration the existing environment
- Phase 3 (schedule C) - Examine alternative design concepts for the preferred solution
- Phase 4 – Develop and submit an Environmental Study Report (ESR), and
- Phase 5 – Once the ESR is approved, execute the project including any required monitoring.

There are many opportunities to advance urban forest planning through the EA process but because the EA process requires that natural environment issues be considered with other (i.e., social, cultural, built environment and economic) elements as part of the decision-making process, natural environment considerations can be outweighed. However, the EA process, particularly when it is being led by a municipality as part of a Municipal Class EA (MCEA), provides flexibility for a municipality to require consistency with its own policies and standards. Where these include strong policies and practices related to the urban forest, then these can be implemented through the EA process.

For example, some municipalities (like Mississauga) have begun to require an environmental impact assessment as part of the EA process. This allows for the full range of anticipated environmental impacts to be considered and where these impacts cannot be avoided or mitigated, appropriate compensation may be considered. York Region is one of the only municipalities to have an explicit policy that allows for woodland compensation (see **Appendix C**, policy 2.2.49) where the woodland is not deemed significant, has been approved for removal and where a net gain in woodland area can be achieved. Woodland compensation is discussed further in **Section 4.2**.

Relevance to Peel: The Region/local municipalities and the conservation authorities[30] typically work together and with the other agencies involved as part of infrastructure projects under the

[29] Government of Ontario, Environmental assessments – accessed Oct. 26, 2019 https://www.ontario.ca/page/preparing-environmental-assessments

[30] For example, TRCA has a service delivery agreement with Peel Region for these purposes.

EA process to, among other things, minimize disturbance to trees and other natural areas, and pursue restoration and compensation where impacts are unavoidable.

Opportunities for enhancing protection and/or enhancement of wooded natural areas and treed areas through the EA process include including consideration of the following as part of the process:

- The value of existing treed assets including the social and economic services they provide
- Local municipal urban forest policies, guidelines and standards, and
- Opportunities to compensate for trees or wooded areas approved for removal, and opportunities to introduce new or additional trees and/or wooded areas to address climate change considerations[31].

BEST PRACTICES: More Comprehensive Consideration for Urban Forest Opportunities Through the EA Process

Treed resources both within and outside of significant natural features and areas are and should continue to be considered through the EA process. Opportunities for enhancing protection and/or enhancement of wooded natural areas and treed areas through the EA process include including consideration of the following as part of the process:

- **The value of existing treed assets including the social and economic services they provide;**
- **Local municipal urban forest policies, guidelines and standards; and**
- **Opportunities to compensate for trees or wooded areas approved for removal, and opportunities to introduce new or additional trees and/or wooded areas to address climate change considerations.**

3.2 Provincial Level Resources Able to Support Urban Forest Planning

This section highlights provincial planning documents (that are not approved policies or legislation) and funding/resources that could be leveraged by the Region and its partners to support urban forest planning and management. Links to the resources below are provided in **Appendix A**.

3.2.1 Ontario Urban Forest Council (OUFC)

The Ontario Urban Forest Council (OUFC)[32] is a not-for-profit volunteer organization based in southern Ontario dedicated to the health of the urban forests in the Province. OUFC's membership includes arborists, foresters, landscape architects, planners, municipalities, restoration specialists, conservation authorities, and many others.

[31] Government of Ontario - Considering climate change in the environmental assessment process: https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process

[32] https://www.oufc.org/about-us/

The organization is not provincially funded or sponsored but acts as a networking, resource, advocacy and outreach group for students and professionals involved in urban forestry in the Province. The organization provides:

- Information on its website including several publications
- Educational workshops and an Annual Conference and Annual General Meeting (see **Figure 3-6**)
- Advocacy for urban forest conservation at the provincial and municipal levels, and
- Cross-sectoral partnerships to advance urban forest planning, stewardship and conservation.

Relevance to Peel: Some of the urban forestry staff in Peel are already familiar with and members of the OUFC. Membership by urban forestry staff in Peel, Caledon, Brampton and Mississauga could be broadened and the OUFC could be leveraged as a vehicle to advocate for sustained provincial support.

OPPORTUNITY: Networking and Advocating Through the Ontario Urban Forest Council (OUFC)

Regional and local municipal staff could leverage the on-line resources and networking opportunities available through the OUFC and encourage this group to advocate for sustained provincial support for urban forest planning and management.

3.2.2 Provincial Strategies Related to Urban Forest Planning

In addition to the provincial Acts identified in **Section 3.1**, two provincial strategies were identified that include strategies directly related to urban forest planning and management that could be cited in municipal planning documents in Peel and elsewhere, as follows.

- The *Ontario Invasive Species Strategic Plan* (2012) identifies some strategies Peel and its partners can use to help fight invasive species, including those that impact trees and forests, as well as useful resources. This document may also assist in deciding if and how best to leverage Ontario's *Invasive Species Act*, as discussed in **Section 3.1.4**.
- *Ontario's Biodiversity Strategy* (2011) sets out a framework for engaging people, reducing threats, enhancing resilience and improving knowledge in relation to native biodiversity and ecosystems, including forests, in the Province. This strategy also recognizes the importance of "city trees" as the part of the Province's biodiversity. The *State of Ontario's Biodiversity* (2015b) reports that the amount of protected areas and conservation lands has increased since 2010 but at 11.2% it is still well below the 17% target.

3.2.3 Provincial Funding Related to Municipal Urban Forestry

The direct provincial funding currently available for tree or forestry-related initiatives that could be applied in Peel is very limited. Only two potential sources that are peripherally relevant were identified, as follows.

- The Species at Risk Stewardship Program and the Species at Risk Research Fund for Ontario are both currently available to municipalities (and others) for projects that can support stewardship and recovery actions, encourage multi-partner approaches, enable people to become involved through outreach and youth employment opportunities, and support scientific research that addresses important needs and knowledge gaps. Proposals must target species listed as Provincially Extirpated, Endangered, Threatened, or of Special Concern and make links to Recovery Strategies.
- The Managed Forest Tax Incentive Program (MFTIP) is available to landowners who have lands classified as "Managed Forest". This program is only available to private landowners with at least four hectares of forested lands to manage on their property. Therefore, its application is likely limited to the rural parts of Caledon and outside the scope of this guide.

Other provincial programs that may provide indirect funding for urban forest planning have not been identified except for the Ontario Community Infrastructure Fund.

OPPORTUNITY: Seek Funding for Urban Forest Stewardship Projects That Target Species at Risk

The Region and/or its partners could apply for provincial funding for urban forest stewardship projects that target habitat creation or enhancement for a provincial Species at Risk.

Credit: OUFC website 2020

Figure 3-6. Graphic for the 2020 Ontario Urban Forest Council summit and annual general meeting

3.3 Summary of Provincial Tools Able To Support Urban Forest Planning

The Province's interests related to forestry have, to-date, been largely focussed on the sustainable management and use of crown forests in northern and central Ontario[33] and on the protection of privately-owned woodlands in southern Ontario through policy. However, over the past decade there has been a growing recognition of the urgent need to address climate change, and of the value of both woodlands and other treed areas in helping to address climate change challenges in both urban and rural Ontario. This shift is becoming apparent in recent policy shifts but not in terms of resource allocation to urban forestry.

Table 3-1 summarizes best practices and opportunities for supporting and enhancing urban forest planning at the municipal level in Peel through provincial legislation, policies and other tools. Most of the tools are legislative or policy based. Best practices related to the provincial *Municipal Act* and *Forestry Act* are discussed in **Section 4.3** which focusses on tree and woodland bylaws.

Table 3-1. Summary of Urban Forest Planning Best Practices and Opportunities for Peel Related to Available Provincial Tools

Name of Tool (Guide Section)	**Best Practices and Opportunities for Peel Related to Available Provincial Tools**
Endangered Species Act (Section 3.1.1)	**BEST PRACTICE: Targeting Net Gains for the Urban Forest Through the Provincial Endangered Species Act Process** Ensure that as part of the planning process in Peel: (a) provincially Endangered and Threatened species (including trees) are screened for, and (b) requirements and opportunities for protection and enhancement of the urban forest take a net gain approach.
***Planning Act* and Provincial Policy Statement (PPS)** (Section 3.1.3)	**BEST PRACTICE: Continue to use Natural Heritage Policies to Support Protection of the Urban Forest** The Provincial Policy Statement (PPS) is the most important and effective planning tool at the provincial level for ensuring the long-term protection of treed natural areas in Ontario. Municipalities in Peel, and elsewhere, should continue to use PPS policies related to natural, water and natural hazards to help protect trees associated with natural heritage features and areas identified as significant at the provincial and municipal levels, and within identified natural heritage systems. **BEST PRACTICE: Incorporate Provincial Policies Related to Green Infrastructure and Climate Change** The most recent iterations of the PPS recognize: the value of green infrastructure (including the urban forest), and the need for communities to mitigate and adapt to climate change. To reflect this shift at the municipal level, planning documents should (a) recognize urban forests as a component of green infrastructure, (b) adopt the Provincial Policy Statement definition of green infrastructure, and (c) implement policies and strategies that support and require the use of natural assets such as the urban forest to help address climate change impacts.

[33] Government of Ontario, forest management policies - accessed Sept. 3, 2019: https://www.ontario.ca/page/forest-management-policies

Name of Tool (Guide Section)	Best Practices and Opportunities for Peel Related to Available Provincial Tools
Invasive Species Act (Section 3.1.4)	**OPPORTUNITY: Leverage the Invasive Species Act for Forest Pest Education** The Region and its partners could explore options for leveraging the *Invasive Species Act* as an educational tool and potentially even a regulatory tool for helping to sustain urban forest native biodiversity and resilience if selected "high priority" invasive plants and/or pests were listed. Listed species may also be more likely to get resource support from the Canadian Food Inspection Agency and/or Canadian Wildlife Service (see **Section 2.1.4**) for the implementation of approved invasive species management plans.
Infrastructure for Jobs and Prosperity Act (Section 3.1.5)	**BEST PRACTICE: Value the Urban Forest as a Municipal Asset** The policy framework in Ontario has been evolving over the past five years to (a) recognize the value of green infrastructure (including urban forests) and (b) require municipalities to value and integrate green infrastructure into overall asset management planning. To reflect this shift at the municipal level, planning documents should work to incorporate urban forests (and other natural assets) into municipal asset management planning.
Growth Plan, Greenbelt Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plan (Section 3.1.6)	**OPPORTUNITY: Build on Provincial Plan Policies That Link Use of Green Infrastructure and Natural Assets to Climate Change Mitigation** Based on the direction from 2017 Growth Plan, the 2017 Greenbelt, Oak Ridges Moraine and Niagara Escarpment provincial plans each include some policies that support the use of green infrastructure and/or natural systems in community planning to help build resilience to climate change. These policies could be referenced or adopted for use in municipal official plans and other planning documents.
Health Protection and Promotion Act (Section 3.1.10)	**BEST PRACTICE: Include Policies for the Urban Forest That Mitigate Human Health Risks Related to Climate Change Impacts** Requirements under the Ministry of Health's Healthy Environments and Climate Change Guideline (2018) reinforce the need for the Region and local municipalities to work with Peel Health Services to ensure natural environment (including urban forest) planning supports: (a) data collection that assists with identification of human health risk factors in the environment related to climate change, (b) approaches that enable mitigation of these risk factors, (c) strategies that advance a healthy built and natural environment, and (d) alignment of natural environment and public health initiatives where possible.
Environmental Assessment Act (Section 3.1.11)	**BEST PRACTICES: More Comprehensive Consideration for Urban Forest Opportunities Through the EA Process** Treed resources both within and outside of significant natural features and areas are, and should continue to be, considered through the EA process. Opportunities for enhancing protection and/or enhancement of wooded natural areas and treed areas through the EA process include considering the following as part of the process: • The value of existing trees including the social and economic services they provide; • Local municipal urban forest policies, guidelines and standards; and

Name of Tool (Guide Section)	Best Practices and Opportunities for Peel Related to Available Provincial Tools
	• Opportunities to compensate for trees or wooded areas approved for removal, and opportunities to introduce new or additional trees and/or wooded areas to address climate change considerations.
Ontario Urban Forest Council (OUFC) (Section 3.2.1)	**OPPORTUNITY: Network and Advocate Through the OUFC** Regional and local municipal staff could leverage the on-line resources and networking opportunities available through the OUFC and encourage this group to advocate for sustained provincial support for urban forest planning and management.
Species at Risk (SAR) Stewardship Program (Section 3.2.3)	**OPPORTUNITY: Seek Funding for Urban Forest Stewardship Projects That Target SAR** The Region and/or its partners could apply for provincial funding for urban forest stewardship projects that target habitat creation or enhancement for a provincial SAR.

Credit: *Assessment of Urban Tree Canopy Cover in Peel Region 2015* (B.A. Blackwell & Associates Ltd. 2017)

Figure 3-7. Oblique aerial photo of a neighbourhood in Peel Region

4. Municipal Planning Tools

Currently in Ontario, and throughout Canada, regional and local municipalities have the most power and carry most of the responsibility for urban forest planning, management (mainly on municipal lands), monitoring and communications. As the planning authorities on most urban forest matters, municipalities have the authority to develop and implement planning tools that are tailored to their community's biophysical, economic and socio-cultural context. The range of potential tools is quite broad, although they must be within the bounds of the applicable legislative framework (as discussed in **Section 2** and **Section 3**) and available resources.

This section of the guide provides an overview of different types of municipal planning tools available to advance urban forest goals with examples of how these tools are being implemented in innovative and/or effective ways from selected municipalities.

The municipal examples cited are intended to be applicable to Peel and therefore have primarily been drawn from regional, local and single-tier jurisdictions in southern Ontario that are largely urban. These are municipalities that generally have: well-established urban forestry departments and programs, individuals in those departments committed to progressive urban forest management, and strong support for urban forestry among key decision-makers (e.g., Council, senior management).

This section has been developed based on:

- A review of:
    - More than 12 municipal urban forest management plans or strategies (see examples in **Appendix A**)
    - More than 10 official plans (see **Appendix C**)[34]
    - Nearly 40 tree and woodland bylaws from southern Ontario municipalities outside Peel (OUFC 2012, **Appendix D**)
    - All bylaws pertaining to trees and woodlands within Peel (**Appendix E**), and
    - *The Compendium of Best Urban Forest Management Practices* (Bardekjian 2018).
- Input from the Project Team and other municipal forestry and planning staff who provided input on draft versions of this guide (see **Appendix B**)
- A review of selected tools (e.g., green standards, asset management plans) identified through the research undertaken for this project or suggested by the Project Team, and
- The consulting team's experience with the development of urban forest management plans and strategies as well as experience leading the natural heritage and urban forest/arboricultural components of studies for plans of subdivision and site plans in various jurisdictions in southern Ontario.

[34] As Municipal Official Plans are sometimes replaced and continuously being updated it is challenging to assign dates to these plans in a consistent manner. For the purposes of this guide, all Official Plans cited are included in the References (**Section 7**) with the information available (e.g., date of adoption, consolidation version used) with website links. However, dates are not noted each time the plans are referenced in the text. In all cases an attempt has been made to refer to the most current in effect Official Plans and policies.

Municipal planning tools explored in detail in this section include: official plans (**Section 4.1**), zoning and site plan controls (**Section 4.2**) and tree and woodland bylaws (**Section 4.3**).

4.1 Official Plans

Official plans[35] are the primary source of planning guidance in a municipality as they provide the overarching direction for how land should be used and how communities should be developed and improved. Official plans also integrate the policy directions set out by the Province at the Regional or local levels. Consequently, official plans (and related area-specific plans such as Secondary Plans and Block Plans) are one of the most important planning tools available to a municipality to set the direction for and guide urban forest planning and management in its jurisdiction.

> *Official plans provide the framework for other planning instruments, such as zoning bylaws, site plan control and land division processes. All municipal decisions must comply with the direction and guidance that official plans provide, and they in turn must be consistent with the PPS and other provincial land use plans, if applicable.*
>
> *Ontario Nature's Best Practices Guide to Natural Heritage Systems Planning (2014)*

Although urban forests include trees within wooded natural areas protected as part of natural heritage systems, in southern Ontario these features are generally well-protected through PPS policies for natural heritage, water and natural hazards (see **Section 3.1.3**). Therefore, the emphasis of the research and analysis undertaken for this guide was on policies for trees outside of protected natural heritage features and areas.

A number of urban and urbanizing municipalities in southern Ontario (including Mississauga and Brampton in Peel) have explicitly recognized the importance of the urban forest in their official plans and developed policies beyond the natural heritage policies required by the Province. For this guide, official plans from ten such regional, local and single-tier jurisdictions (i.e., Ottawa, York Region, Richmond Hill, Ajax, Toronto, Oakville, Guelph, London, Mississauga and Brampton) have been examined in detail with excerpts of the relevant urban forest policies from each provided in **Appendix C**. Planning and forestry staff from many of these municipalities were also consulted regarding these policies and other planning tools related to the urban forest (as summarized in **Appendix B** and noted in the guide acknowledgements). This research has been central to informing the best practices identified in this section.

Each official plan is unique and tailored to a given municipality's context, but there are some approaches to structuring urban forest policies as well as some common directions that emerge from the official plans reviewed. These have been considered in the context of the federal and provincial direction and opportunities related to urban forest planning (discussed in **Section 2** and **Section 3**) along with current directions in urban forest planning known to the team, to identify a suite of policy directions able to support urban forest sustainability.

Although most of the policy directions have been drawn from single-tier and local official plans, many of them could also be incorporated into regional official plans, although this should be done in consultation with local municipalities. These best practice directions and opportunities are discussed in the sub-sections below and summarized in **Table 4-1**.

Each sub-section below includes the rationale for the policy direction in brief, some explanatory text where deemed necessary, and specific policy examples drawn from the official plan review. The intent for these policy directions is to:

a) Inform the Region of Peel as it updates its official plan to, among other things, take a more active role in framing and supporting urban forest planning in Peel[36];
b) Serve as a guide for the local municipalities in Peel to assist them in the development (in the case of Caledon) or enhancement (in the case of Mississauga and Brampton) of their existing urban forest policies; and
c) Potentially provide guidance or ideas for other municipalities seeking to develop or enhance their urban policies at the official plan level.

The following is not intended to be a critique of any official plans or a gap analysis. Selected examples are provided for illustrative purposes only with potential application in Peel at the regional and/or local municipal levels where such policy direction is not already in place.

4.1.1 Policy Structure - Highlight and Integrate Urban Forest Policies

Each municipal official plan is different and tailored to the unique biophysical and socio-economic context as well as the overall strategic planning direction of the given jurisdiction. Therefore, there is no best practice *per se* as it relates to urban forest policy organization and hierarchy in official plans. However, there are several approaches that have been identified to: (a) help highlight urban forest policies within an official plan and (b) reinforce the importance of urban forest considerations in overall community planning.

INCLUDE GOALS OR OBJECTIVES RELATED TO THE URBAN FOREST IN THE OVERALL PLAN DIRECTION

Virtually all official plans have an introductory section where the overall principles behind and/or themes and goals for the plan are laid out. If goals related to the urban forest are integrated into the plan direction, then this clearly demonstrates that the urban forest is central to land use planning in that jurisdiction and is recognized as important at a strategic level. Selected examples are provided below.

- The City of London has "*become one of the greenest cities in Canada*" as the fourth of eight official plan directions. Supporting this direction are 17 actions including #9 "*Strengthen the urban forest by monitoring its condition, planting more, protecting more, and better maintaining trees and woodlands*".
- The City of Guelph's Official Plan includes eight "smart" principles. The sixth one "Pastoral and Protective" provides a vision that includes natural areas and trees: "*A horticulturally rich city where gardens abound; a city that preserves and enhances its*

[36] Although the Region's current Official Plan (2018) has well developed policies for its woodlands and other natural areas, it only has one policy that speaks specifically to the urban forest. Guidance included in this document was used to inform updates to the Region's Official Plan over 2020 and 2021.

significant natural features, rivers, parks and open spaces and makes the planting and preservation of trees a priority…".

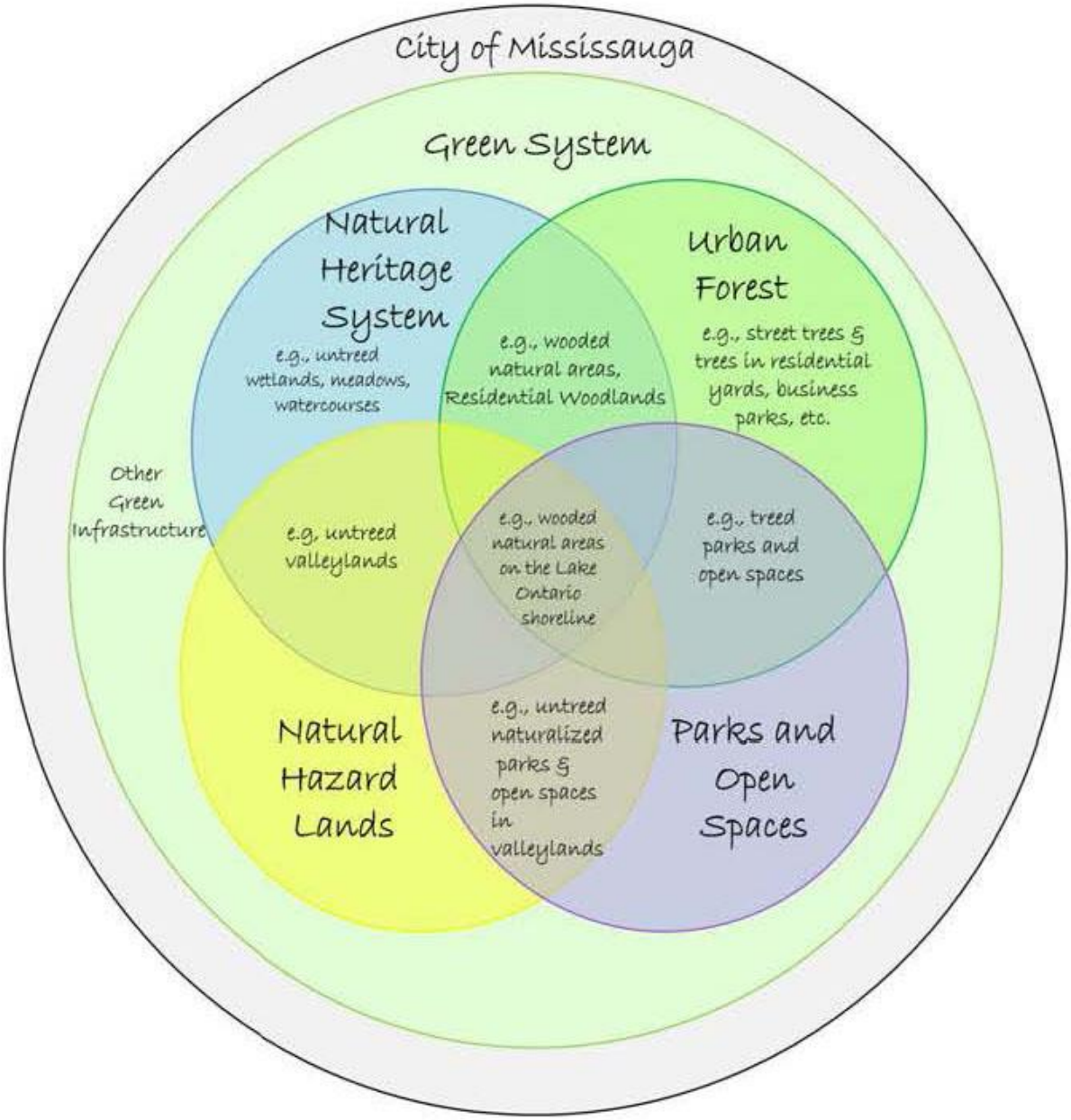
CLARIFY THE RELATIONSHIP BETWEEN NATURAL HERITAGE AND URBAN FOREST POLICIES
Although significant woodlands and other significant natural heritage features and areas form part of the urban forest, these features have distinct policies based on the direction provided by the Province (see **Section 3.1.3** and **Section 3.1.6**) whereas policies for trees outside of protected natural heritage features and areas, and outside natural hazard lands, are largely at a municipality's discretion. Therefore, it is important to clarify that although wooded natural heritage features and areas are part of the urban forest, that those features and areas are subject to the applicable natural heritage policies.

- At the beginning of the "Forest City" section of their Official Plan, the City of London states clearly that: "*389_For those areas of the Urban Forest that are components of the Natural Heritage System, the Natural Heritage policies of this Plan shall apply*."
- The City of Guelph's Official Plan makes a very clear distinction between the urban forest policies applying to trees outside of the natural heritage system in the preamble to its urban forest policy section (4.1.6): "*The City's Urban Forest, includes plantations and smaller wooded areas less than one 1 ha, hedgerows and individual trees that are not included in the City's Natural Heritage System*".

INCLUDE URBAN FOREST POLICIES AS A STAND-ALONE SECTION AND INTEGRATE IN OTHER SECTIONS
There is value in having both (a) a stand-alone section for urban forest policies and (b) having selected urban forest policies strategically integrated in other sections of an official plan. This approach has been taken in the Town of Richmond Hill, Town of Ajax, Town of Oakville, City of Guelph, City of London and City of Mississauga (see **Appendix C**).

Having a stand-alone urban forest policy section recognizes the urban forest as an entity, provides a place for jurisdiction-wide urban forest vision statements and goals (including targets) and allows for key urban forest policies to be viewed and considered together. Integrating selected urban forest policies in other sections, as appropriate, helps ensure that trees and the urban forest are considered in different aspects of land use planning (e.g., sections related to parks and open space, downtowns, infrastructure including stormwater management, transportation and cultural heritage).

The City of Mississauga's Official Plan includes a stand-alone section on the urban forest and also includes the urban forest in the City's broader Green System (described in Chapter 6). **Figure 4-1** is excerpted from Mississauga's Official Plan and illustrates how the urban forest is a component of the Green System that overlaps with the natural heritage system, natural hazards and parks and open spaces.



Credit: City of Mississauga Official Plan (2016), Chapter 6

Figure 4-1. Illustration of how the urban forest fits within Mississauga's Green System

The Town of Richmond Hill's Official Plan has a section on Managing the Urban Forest (Section 3.2.1.2) as well as urban forest policies in other sections related to environmental study requirements, air quality and urban heat island mitigation, streetscapes and the Town-wide Greenway System (see **Appendix C**).

BEST PRACTICES: Policy Structure - Highlight and Integrate Urban Forest Policies

- **Include goals related to the urban forest in the overall plan direction.**
- **Clarify the relationship between natural heritage and urban forest policies.**
- **Include urban forest policies as a stand-alone section and integrate urban forest policies in other sections.**

4.1.2 Include an Urban Forest Vision and Goals That Recognize Co-Benefits

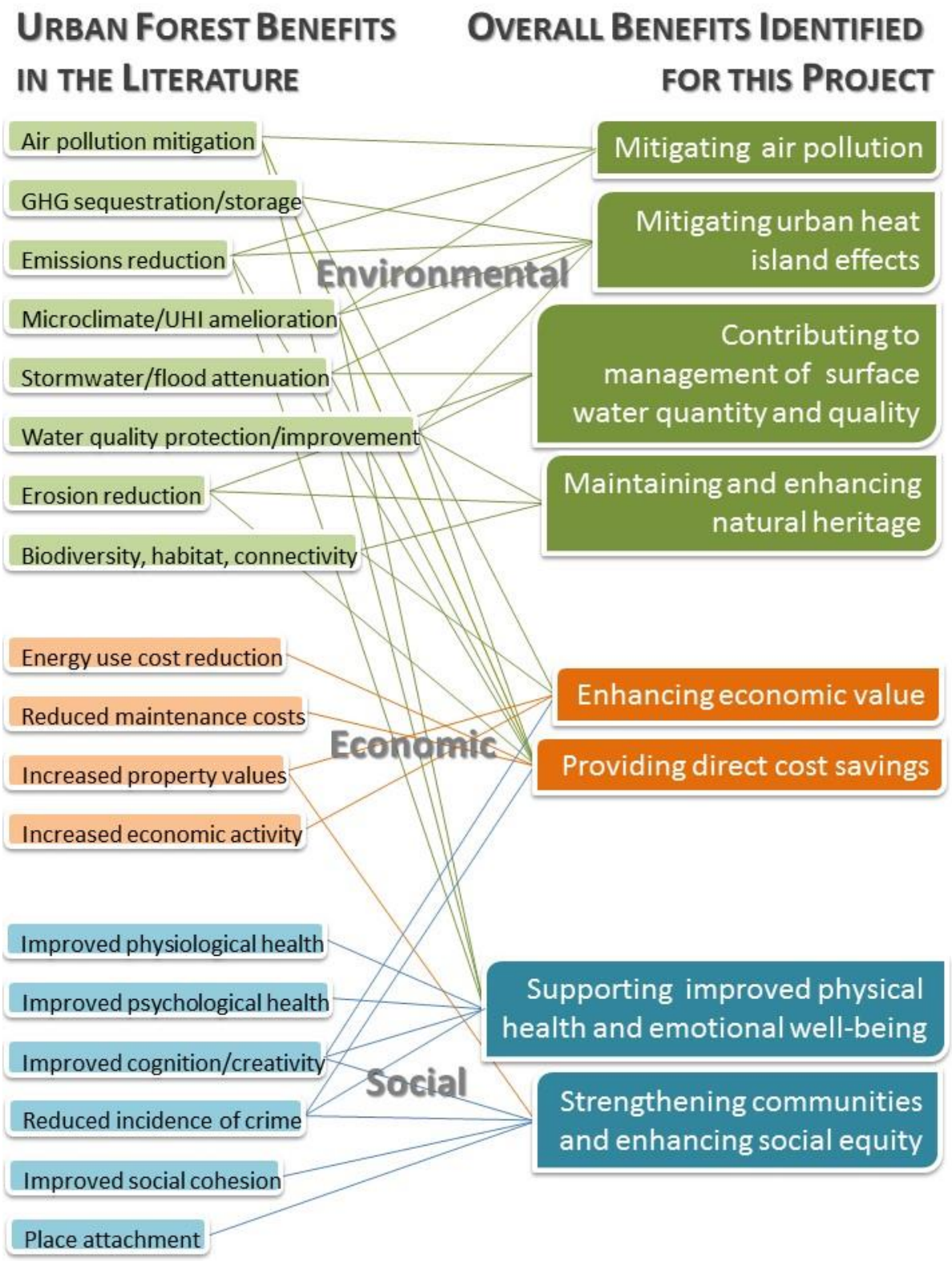
In addition to capturing elements of urban forest planning in overall official plan principles and direction, there should be a clear direction (i.e., vision and supporting principles and/or goals) for the municipality's urban forest. This strategic direction should be based on existing biophysical conditions, the local planning context, available resources and partnerships, and input from consultations and engagement (e.g., from an Urban Forest Strategy or Plan, see examples in **Appendix A**). Although not all the principles, goals, objectives and targets developed for the urban forest need to be included in an official plan, especially if there is an urban forest strategy or urban forest management plan that can be referenced, this direction should be clearly reflected in an official plan and should include recognition of the many benefits and services trees can provide (see **Figure 4-2**), including helping communities mitigate and adapt to climate change events and stressors.

INCLUDE DIRECTION THAT RECOGNIZES URBAN FOREST CO-BENEFITS

The United Nations *Guidelines on urban and peri-urban forestry* (FAO 2016) states that the vision for the urban forest should communicate that "[*h*]*ealthy and resilient green cities and urban forests provide benefits to all and are managed with a shared commitment by all members of a community*". Including the term "resilience" implies a link to climate change mitigation/adaptation, while including a reference to the community alludes to the importance of stewardship on both public and private lands.

Figure 4-2 provides an illustration of the multiple environmental, economic and social co-benefits that can be provided by a healthy urban forest documented in the scientific and technical literature. Having text and policies in an official plan that recognize these co-benefits is key to communicating the urban forest's full value as a municipal and a community asset (see Section **4.1.14**). Selected examples of official plan policies that recognize urban forest co-benefits from the official plans reviewed are noted below.

- Town of Ajax, pre-amble to Tree Canopy policies (Section 2.1.4): "*The Town recognizes the value of tree cover in improving air quality and lowering air temperature during summer months. Expanding and providing a more robust tree cover creates bird and wildlife habitat, reduces the urban heat island effect, improves air quality, and connects open spaces and other natural areas*".
- City of London, Action #17: "*Promote linkages between the environment and health, such as the role of active mobility in improving health, supporting healthy lifestyles and reducing greenhouse gases*".



Credit: Priority Tree Planting Areas to Grow Peel's Urban Forest (Beacon et al., 2015)

Figure 4-2. Urban forest co-benefits as identified though Peel's Tree Planting Prioritization Tool

- City of London, introduction to the Forest City section: "387_ *Trees mitigate the impacts of climate change by reducing greenhouse gas emissions and providing shade… Trees improve air quality by absorbing pollutants and by producing oxygen. They give us spiritual well-being and an over-all higher quality and longevity of life. Trees improve watershed health by controlling water movement above and below the ground… Trees increase property values and provide an economic stimulus in commercial areas. Trees benefit not just the owners of the property on which they are located, but all of society".*

BUILD ON DIRECTION FROM EXISTING URBAN FOREST STRATEGIES AND PLANS

The urban forest vision included in an official plan should mimic or build on the strategic vision and goals developed as part of a local or regional Urban Forest Strategy or Management Plan, particularly where these documents have been developed with a science-based approach and with input from consultations and engagement.

In Peel, Mississauga has already updated its Official Plan policies based on the work done through its Natural Heritage & Urban Forest Strategy (2014), while the Region and Brampton have approved strategic directions in other strategies that should inform their Official Plan updates related to urban forest, cited below.

- The vision in Peel's 2011 Urban Forest Strategy conforms to many of the suggested best practices above and should be considered in Peel's Official Plan updates: "*Our vision is for a healthy and resilient urban forest that provides diverse and sustained benefits to all and is grown from a shared commitment by all members of the community to the stewardship and care of this vital infrastructure."*

- Peel's 2011 Urban Forest Strategy also includes eight goals including: facilitating partnerships and actions across Peel, developing urban forest targets, supporting the development of urban forest management plans, advocating for provincial and federal support, implementing research and monitoring programs, and providing sustained outreach and education. Many of these remain relevant and applicable today and should also be considered as part of the development of regional urban forest policies.

- A prominent part of Brampton's strategic Vision 2040[37] includes a vision for the urban forest: "*The tree canopy is lush as a refreshed urban forest. Over a million trees have been planted in public places and citizens have doubled this by planting more trees on private property. Virtually all streets have street trees, sometimes a double row, grown within the latest technology of soils culture*". This vision was developed with a high-level of citizen support for greenspace expansion and investment in the urban forest. It sets a direction that can be built upon and implemented through the City's Official Plan as well as its urban forest management plan (currently underway).

[37] https://www.brampton.ca/EN/City-Hall/Documents/Brampton2040Vision/brampton2040Vision.pdf

BEST PRACTICES: Include an Urban Forest Vision and Goals That Recognize Co-benefits

- **Include direction that recognizes urban forest co-benefits.**
- **Build on direction from existing urban forest strategies and plans at the respective jurisdictional level. Local official plans may build on the regional vision and goals if they do not have their own strategy or plan.**

4.1.3 Include Urban Forest Targets - Carefully

Targets can be useful in that they provide specific metrics against which the progress of urban forest planning can be measured. Readily understood targets can be useful in helping to make the case for investments in management and monitoring activities. However, urban forests are comprised of trees which are natural assets subject to a wide range of environmental stressors outside of the municipality's control. Therefore, there can be events that significantly and unexpectedly impact progress, and a need to shift management direction and revise targets and/or target timelines in response to significant events (e.g., EAB infestation, ice storms). Therefore, while targets related to the urban forest included in an official plan should be both visionary and attainable, there should also be some caution exercised in terms of the specific commitments made as there is a much greater degree of accountability for targets embedded in an official plan than in other supporting strategic documents.

DEVELOP JURISDICTION-SPECIFIC TARGETS BASED ON LOCAL MUNICIPAL DATA AND CONTEXT

The type of urban forest target commonly in the official plans reviewed for this guide and commonly cited in high-level discussions of urban forests around the world is urban tree canopy cover (UTCC). UTCC can be described as a two-dimensional measurement of the areal extent of tree foliage, typically measured in percentage of total land area.

The opportunities and challenges associated with using UTCC as measure and a target are presented eloquently and at length by Dr. Cecil Konijnendijk[38]. In brief, use of UTCC as a measure and target for the urban forest provides: a clear goal to unify the community and rally political support, a useful indicator that can be readily understood by most stakeholders, and a simple metric that facilitates benchmarking within as well as between urban areas. However, UTCC as a metric is limited in that does not reflect quality of the urban forest or any inequities in distribution, and exclusive focus on this single metric can result in misguided efforts to simply "get trees in the ground" at the expense of proper establishment of fewer trees and/or other maintenance activities which may be just as or more effective in sustaining the urban forest. In addition, the tools for mapping UTCC have evolved considerably over the past decade and the methodology is not yet standardized, so it can be erroneous to compare work done in different years and different jurisdictions on an "apples to apples" basis. Finally, if UTCC targets are set for political reasons without science-based data and without consideration of local constraints and the resources required to meet those targets, they can be very unrealistic.

Despite these misgivings, current thinking is that UTCC targets remain a useful tool for both monitoring and for helping to communicate to a wider audience about urban forest objectives.

[38] Cecil Konijnendijk - A critical look at the use of canopy cover targets in urban forest governance. Accessed at: https://www.youtube.com/watch?v=UL5FiKr92ME&app=desktop

However, as Dr. Konijnendijk states in his presentation and as stated on the current American Forests website[39], jurisdiction-specific targets should be developed based on area-specific data, ideally with a standardized methodology and with due consideration for local biophysical and planning constraints and context.

Because UTCC only provides a two-dimensional view rather than a comprehensive assessment of the urban forest, UTCC targets should be considered as one of a suite of targets and/or objectives and/or indicators against which to measure urban forest sustainability (e.g., Kenney *et al.*, 2011; also see the Urban Forest Management Plans cited in **Appendix A** for examples of suites of criteria and indicators).

Examples of single-tier and local official plan policies related to urban forest targets are provided below.

- The City of Ottawa includes a specific forest cover (Section 2.4.5) along with high-level approaches for achieving it:
    - *7. …the City will maintain a target for forest cover for the entire city of 30 per cent. The City will increase forest cover in urban and rural areas through the planning and development review process by:*
      a. Identifying and protecting environmental areas designated in the Plan, including provisions for environmental assessments for adjacent lands;
      b. Emphasizing tree preservation and planting in the requirements for private development and public works, including road corridors, parks and municipal buildings;
      c. Developing guidelines for tree preservation and planting in the development review process, including a policy on compensation for loss of forest as a result of development. This policy, to be developed in consultation with the development industry and the community, will consider various forms of compensation, including planting on other sites owned by the applicant or the City.

- The City of London includes short- and long-term canopy cover targets, and points to its urban forest strategy for more specific targets:
    - *393_ It is a target of this Plan to achieve a tree canopy cover of 28% within the Urban Growth Boundary by 2035.*
    - *394_ The 20-year target identified above is intended help us to achieve a long-term tree canopy cover of 34% within the Urban Growth Boundary by 2065.*
    - *395_ Specific tree canopy cover and other targets for specific place types will be developed through the Urban Forest Strategy Implementation Plan and implemented through the Zoning Bylaw and other by-laws and guideline documents.*

[39] American Forests - Why We No Longer Recommend a 40 Percent Urban Tree Canopy Goal https://www.americanforests.org/blog/no-longer-recommend-40-percent-urban-tree-canopy-goal/

DEVELOP REGIONAL CANOPY COVER TARGETS IN CONSULTATION WITH LOCAL MUNICIPALITIES

In jurisdictions with both regional and local municipalities (as in Peel), local municipalities should have substantial input to and be on board with any targets set at the regional level. For example, York Region has a woodland cover target of 25% by 2031 in its current Official Plan and a canopy cover target of 35% in its Forest Management Plan (2016) with recommended canopy cover target ranges for each local municipality which, according to regional staff (**Appendix B**), most of the local municipalities in York are on board with.

COMMIT TO WORKING TOWARDS EQUITABLY DISPERSED CANOPY COVER

One further consideration related to UTCC is equity. It is sometimes assumed that whatever canopy cover ascribed to a municipality, that this cover is well-dispersed. However, in looking at UTCC mapping for most municipalities this is rarely, if ever, the case. In many southern Ontario municipalities, the greatest concentrations of canopy cover tend to be associated with ravines along watercourse corridors and older residential areas. Therefore, in addition to having a jurisdiction-wide canopy cover target, an emerging best practice is to also have policies that commit to working towards equitably dispersed canopy cover so that most people living and working in a community have access to the benefits provided by trees and greenspace.

The Peel Tree Planting Prioritization Tool (2015) included several criteria to target tree establishment efforts based on social equity considerations, and the Town of Oakville requires land-use type specific targets be met as part of development through the Site Plan process in North Oakville (see **Section 2.2**). However, to the best of the consulting team's knowledge, no official plans in Ontario have included area-specific targets in their Official Plans. Such an approach may not be advisable due to some of the limitations associated with the use of canopy cover metrics discussed above. However, it is an emerging best practice to recognize the need for equity in this regard at the Official Plan level. Examples from existing Official Plans include:

- City of Mississauga: "*6.3.41 The Urban Forest will be protected and managed with the goals of: a. maintaining and increasing the city's canopy cover; b. improving both species and structural diversity, as well as overall health; and c. being more evenly distributed across the city*".
- *City of London: "409_ To achieve our objectives, we will plan and provide for a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parkland, public spaces, open space areas, trails and linkages, and water-based resources…".*

BEST PRACTICES: Include Urban Forest Targets – Carefully

- **Develop jurisdiction-specific targets based on local municipal data and context.**
- **Develop regional canopy cover targets in consultation with local municipalities.**
- **Commit to working towards equitably dispersed canopy cover.**

4.1.4 Align Policies with Human Health Risk and Climate Change Risk Mitigation

Building on the discussion of co-benefits in **Section 4.1.2**, one of the emerging directions in urban forestry is to include policies in official plans that are specifically intended to help communities maximize the co-benefits of urban forest and human/community health in the face of climate change.

The recently updated Greenbelt, Niagara Escarpment and Oak Ridges Moraine Plans (2017) have each incorporated some policies supporting the use of green infrastructure and/or nature-based solutions to help address the impacts of climate change (see **Section 3.1.6**). Furthermore, the current Provincial Policy Statement directs municipalities to "*prepare for the impacts of a changing climate*" with respect to all types of land use planning (see **Section 3.1.3**), while new guidelines developed under the *Health Protection and Promotion Act* require regional boards of health to work with municipalities to develop and implement approaches for, among other things, promoting the use of natural environments and green spaces to mitigate environmental health risks, including risks related to climate change (see **Section 3.1.10**).

Examples of specific official plan text and policies that align urban forest objectives with mitigation of environmental human health risks, including risks that can be exacerbated by climate change, are cited below.

- City of Toronto Official Plan, Section 3.4 The Natural Environment, Preamble: "*Strong communities and a competitive economy need a healthy natural environment. Clean air, soil and water and abundant trees, parks and open spaces, underlie our health and well-being and attract people to work and invest in the City*".
- City Mississauga Official Plan, Section 6.5 – Air Quality: "*Clean air is critical to human and environmental health. The most effective strategies to ensure air quality are to encourage and achieve complete communities with a compact urban form, including alternative modes of transportation such as walking, cycling and transit and ensuring the compatibility of land uses. It is equally important to protect, enhance and restore the Natural Heritage System and Urban Forest, which all assist in capturing carbon emissions, reducing the heat island effect and providing overall air quality benefits*".
- York Region Official Plan: "*It is the policy of Council: 5.2.34 To encourage local heat island effects mitigation in all development including: a. green and/or white roofs; b. locating trees or other plantings to provide shading for at least 50 per cent of sidewalks, patios, and driveways, and within 15 metres of buildings; and, c. installing light-coloured paving materials including white concrete, grey concrete, open pavers and any material with a solar reflectance index of at least 29*".
- Town of Oakville: "*6.10.3 Landscaping should be incorporated to provide shade and wind protection.*"

The Simcoe Muskoka Health District published a guide of policy statements for official plans (2014)[40] that, among other things, recognizes that having trees/green spaces can contribute to the reduction of environmental stressors that contribute negatively to human health. The recommended official plan policy in this document to reflect this understanding is as follows:

[40] http://www.simcoemuskokahealth.org/docs/default-source/jfy-communities/Healthy_Community_Design.pdf?sfvrsn=0

- *EN 1.6. A community-wide Urban Forestry Management Plan shall be developed to maximize the environmental and community health benefits of having healthy trees, with particular attention to protecting the community's stock of existing trees, supporting the growth of new trees and expanding the tree canopy in the community.*

BEST PRACTICES: Align Policies with Human Health Risk and Climate Change Risk Mitigation

Include policies in Official Plans that are specifically intended to help communities maximize the co-benefits of urban forest and human/community health in the face of climate change.

4.1.5 Support Ongoing Inventory, Management and Monitoring

Three well-established principles in progressive urban forest management are that: (a) planning should be rooted in a full understanding of the extent, condition and location of the asset; (b) targeted and sustained maintenance and management is required to sustain a healthy and resilient urban forest; and (c) monitoring of selected measures is needed to maintain an understanding of the asset's condition, to track progress in achieving established goals and to inform adaptive management. Therefore, official plan policies should recognize the importance of and include strong support for ongoing inventory, maintenance and monitoring of the urban forest. Where there is more than one layer of municipal government to consider (e.g., regional and local), such policies should be tailored to reflect areas of respective jurisdiction.

INCLUDE STRONG SUPPORT FOR ONGOING INVENTORY, MAINTENANCE AND MONITORING

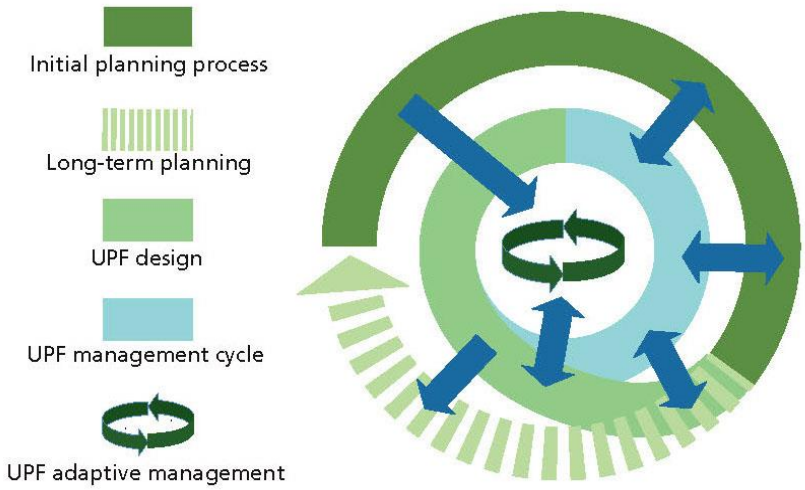
Although an official plan is not the right place to provide specifics, it should include some high-level support for urban forest inventory, management and monitoring. Examples from existing official plans include:

- City of Ottawa Official Plan, Section 1.4: "*Key factors for successful sustainability initiatives [include] … Monitoring and reporting on their progress*".
- One of the City of London's overall goals is to "*9. Strengthen our urban forest by monitoring its condition, planting more, protecting more, and better maintaining trees and woodlands*" and its policies specifically state: "*396_ Progress toward meeting these targets will be monitored as follows: 1. A tree canopy cover analysis will be prepared every five years to determine if tree canopy targets are being achieved. 2. An analysis of the structure, function, and value of the Urban Forest will be prepared at least once every ten years. 3. An inventory update and analysis of trees in boulevards, rural streets, manicured portions of parks and municipal properties will be completed at least once every ten years*".
- City of London, Policy 389: "*7. Insects, disease, and environmental factors affecting the health and sustainability of our Urban Forest are proactively managed*".
- Town of Oakville: "*6.10.2 Development should preserve and enhance the urban forest by: a) maintaining existing healthy trees, where possible; b) providing suitable growing environments; c) increasing tree canopy coverage; d) incorporating trees with historic or cultural significance; and, e) integrating a diverse mix of native plant species*".

- City of Guelph, Section 4.1.7.5 Ecological Monitoring: "*1. A City-wide environmental monitoring program will be developed and implemented to assess the effectiveness of the policies, decisions and programs in meeting the objectives of the Natural Heritage System and the Urban Forest*.
  … 3. Short-term, site-specific monitoring may be required as a condition of the planning approval process and the results will be integrated into the city-wide monitoring program, where applicable".

INCLUDE SUPPORT FOR AN ADAPTIVE MANAGEMENT APPROACH

Trees are biological assets with potentially long lifespans, and urban areas can change dramatically in relatively short periods of time. Therefore, it makes sense that planning for trees in urban areas follows a dynamic model like the planning-design-management continuum for long-term success (see **Figure 4-3**).



Credit: Guidelines on urban and per-urban forestry (UPF) (FAO 2016)

Figure 4-3. Illustration of the planning-design-management continuum

As stated in the United Nations *Guidelines on urban and per-urban forestry* (UPF) (FAO 2016): "*Planning… needs to interact with design and management to maintain the adaptability of the city system. The enabling environment for UPF, therefore, should encourage integration and reciprocal learning in the planning, design and management continuum*".

Although the principle of adaptive management is embedded in many Urban Forest Management Plans (see examples in **Appendix A**), no official plan policies were identified as part of the research for this guide that explicitly support adaptive management and/or the planning-design-management continuum as a framework for urban forest planning. However, including some language supporting an adaptive management approach to urban forest planning would be appropriate and reflect some of the challenges in planning for this asset.

BEST PRACTICES: Support Ongoing Inventory, Management and Monitoring

Include strong support for ongoing inventory, maintenance and monitoring of the urban forest. Include support for an adaptive management approach to urban forest planning.

4.1.6 Require Comprehensive Assessment of Trees and Woodlands

This section focusses on official plan support for comprehensive site-specific inventory and assessment of trees and woodlands on private lands (unlike **Section 4.1.5** which addresses support for jurisdiction-wide inventory and site-specific inventory of trees on municipal lands), and therefore is more appropriate at the local official plan level in Peel.

Most municipalities in Ontario require some type of inventory and assessment of treed and wooded areas as part of the planning process, but there is substantial variability in terms of what information is required. In addition, many jurisdictions lack comprehensive guidelines or fail to reference such guidance in their official plans.

REQUIRE COMPREHENSIVE GUIDELINES FOR WOODED FEATURE ASSESSMENT AND TREE INVENTORIES

Plans and proposals for community development are reviewed and approved based on a review of studies submitted, sometimes without the benefit of a site visit, and therefore the information included in these studies is critical in informing the planning process. Therefore, having guidelines to ensure assessments of trees and wooded areas are accurate and in compliance with all applicable requirements is a basic urban forest planning best practice.

Examples of policies from the official plans reviewed are provided below.

- City of Guelph, Section 4.1.6.3: "*2. Tree Inventory and Vegetation Compensation Plans shall be required for all new development and site alterations*".
- City of Mississauga: "*6.3.44 Development and site alteration will demonstrate that there will be no negative impacts to the Urban Forest. An arborist report and tree inventory that demonstrates tree preservation and protection both pre and post construction, and where preservation of some trees is not feasible, identifies opportunities for replacement, will be prepared to the satisfaction of the City in compliance with the City's tree permit by-law*".
- City of London, Policy 399: "*2. Tree inventories will be prepared to identify the trees on a site that may be impacted by the proposed development. Tree inventories may not be required for those treed areas that are to be retained. Tree preservation plans will be prepared to identify trees to be retained, removed, mitigated, and replaced by new tree planting*".
- City of Brampton, Section 4.5.8: "*All aspects of the woodlands and the urban forest will be evaluated through the development review process*".

This aspect of urban forest planning is important because it provides an accurate basis for (a) considering the applicable policies, and (b) when trees or wooded areas cannot be protected, for requesting or requiring compensation, as discussed in **Section 4.1.8** below.

BEST PRACTICES: Require Comprehensive Assessment of Trees and Woodlands

- **Support for comprehensive guidelines for wooded feature assessment.**
- **Support for comprehensive guidelines for tree inventory, as well as associated tree preservation and removal plans.**

4.1.7 Strong Protection for Existing Mature Trees

Municipalities that are already investing in the management of their urban forest and have goals such as increasing local canopy cover often focus on achieving these goals through increased tree planting. However, protecting existing trees and managing existing trees to maximize their life spans and the benefits they provide is just as critical to sustaining the urban forest.

Credit: City of Vancouver Urban Forest Management Plan (2018)

Figure 4-4. Example of protection for existing mature trees in practice

Most official plans in Ontario both provide protection for significant woodlands and other significant wooded natural areas. This is true for the regional and local official plans in Peel, and therefore is considered an established practice for the purposes of this guide and will not be discussed further in this guide.

Most official plans in Ontario also support the protection of trees outside of protected natural areas. However, there are some examples of official plan policies that provide strong and/or creative approaches for supporting protection of established trees, particularly mature and healthy trees. These include policies that allow for increased densities/height in exchange for the preservation of valued trees as well as requirements for water balances and grading to help ensure trees identified for protection are not impacted by land use changes in the adjacent lands. Specific examples are provided below:

- City of London, Policy 399:
    - "3. *Large, rare, culturally significant, or heritage trees that are deemed healthy or structurally sound should be retained, with the expectation that concessions may be required in order to support their structure and retain their health for the long term*".
    - "*10. Building height and densities may be increased, in appropriate circumstances and in conformity with the Bonus Zoning policies in the Our Tools part of this Plan, to support the safe and long term preservation of existing healthy trees, rare species, and wildlife trees*".
    - "*11. In considering the protection of trees through a planning and development application process, a water balance study may be required to ensure that remaining trees will retain their health over time. Sites will be graded to support the long-term sustainability of existing trees that are to be retained*".

- City of Mississauga, Residential Woodlands policies: "*6.3.19 Development proposals and site alteration for lands within a Residential Woodland will have regard for how existing tree canopy and understorey are protected, enhanced, restored and expanded. A site development plan may be required to demonstrate how the following, among other matters, have been addressed:*
    a. existing topography and drainage patterns;
    b. maintenance of a high proportion of permeable ground cover to facilitate ground water recharge;
    c. habitat for tolerant canopy birds (both in migration and for breeding);
    d. habitat for urban wildlife; and
    e. connections to other elements within the Green System".
- The recently finalized Downtown Local Centre Secondary Plan policies (Town of Richmond Hill 2017) include principles that support the protection of significant trees (although the term is not defined) and require accommodation for large-statured trees in front yards or boulevards fronting low and medium density developments (Policies 10.1.3(1) and 10.2.5.1(6)).

BEST PRACTICES: Strong Protection for Existing Mature Trees

Provide strong and/or creative approaches for supporting protection of established trees, particularly mature and healthy trees.

4.1.8 Take a No Net Loss or Net Gain Approach to What Cannot Be Protected

All municipalities recognize that in some cases tree removals will be required. In urbanizing areas this is often to accommodate planned growth and mandated development. Therefore, this section focusses on best practice policies that can be considered at the official plan level to support (a) replacement and/or compensation for approved tree removals, and (b) ensure opportunities for tree establishment are pursued even in cases where trees may not have occurred under existing conditions.

REQUIRE REPLACEMENT OF TREES APPROVED FOR REMOVAL ON ALL LANDS USING A NET GAIN APPROACH

Over the past decade or so it has become fairly common practice in southern Ontario to seek 1:1 tree replacement for trees approved for removal on both private and municipal lands. However, in a context of increasing urbanization pressures and climate change, several municipalities are starting to ask for greater ratios and diameter-based replacements (see **Section 4.2** for an overview of tree compensation approaches). This shift is rooted in the recognition that where, for example, a 60 cm diameter tree is removed, replacing it with a 60 mm caliper sapling results in (a) a significant time lag before the canopy and associated benefits are replaced, and (b) a risk of net loss if the tree does not survive or never grows to be as large as the tree it has replaced. Despite the ability of many trees to grow well in urban environments if they are provided adequate growing conditions, both the "canopy cover time lag" and the risk of net canopy cover loss are serious concerns in municipalities committed to maintaining and enhancing their urban forest cover and looking to leverage the urban forest to help mitigate and adapt to climate change.

In this context, a best practice is to include policies at the official plan level that: (a) require replacement of trees approved for removal on both private and municipal lands and (b) establish a net gain principle for tree replacements. Where there is more than one layer of municipal government to consider (e.g., regional and local), such policies should be tailored to reflect areas of respective jurisdiction.

Examples of no net loss or net gain tree establishment policies in official plans are cited below.

- City of Guelph: "*4.1.6.2 .3. A Vegetation Compensation Plan shall be required for the replacement of all healthy non-invasive trees measuring over 10 cm dbh, proposed to be removed*".
- City of London, Policy 399: "*4.b Except where otherwise specified in City by-laws, trees shall be replaced, on the same site, at a ratio of one replacement tree for every ten centimetres of tree diameter that is removed. Guidelines, municipal standards or by-laws may be prepared to assist in the implementation of this policy*".
- The City of Mississauga's Official Plan, Section 6.3.42: "Mississauga will protect, enhance, restore and expand the Urban Forest … by …: *e. ensuring development and site alteration will not have negative impacts on the Urban Forest"*.
- Town of Richmond Hill, Section 3.2.3: "*22. Where existing trees greater than 20 centimetres DBH have been approved by the Town for removal as part of the development process, the Town shall require the landowner to replace the lost tree cover based on an appropriate methodology to the satisfaction of the Town, at the sole expense of the landowner in a location agreed by the Town*".
- York Region: "2*.2.49 That should policy 2.2.48 apply… A woodland compensation plan shall be required for removed woodland deemed not significant… [which] shall be prepared to the satisfaction of York Region in consultation with the conservation authority and the local municipality and shall demonstrate a net gain in woodland area*".

In addition, under the *Municipal Act* (see **Section 3.1.7**) compensation can be required for trees removed even when such compensation cannot be accommodated on-site. Consequently, several municipalities have official plan policies requiring replacement for trees approved for removal as part of the planning process in accordance with compensation requirements set out through private tree bylaws. Examples of official plan policies supporting this practice are cited below.

- Town of Oakville: "*10.12.5 Tree removal on private property shall be subject to the Town's private tree protection by-law*".
- City of Guelph, Section 4.1.6.1: "*4. Tree destruction or removal of trees on private property will be regulated by the City's tree by-law*".
- City of Mississauga: "*6.3.44 Development and site alteration will demonstrate that there will be no negative impacts to the Urban Forest. An arborist report and tree inventory that demonstrates tree preservation and protection both pre and post construction, and where preservation of some trees is not feasible, identifies opportunities for replacement, will be prepared to the satisfaction of the City in compliance with the City's tree permit by-law*".
- City of Brampton: "*4.5.8.3 Pursuant to By-Law 402-2005 (A By-law to conserve and protect woodlots from the impacts of development in all areas within the City of Brampton) and*

prior to removal of any trees in a woodland, the applicant must submit a silvicultural prescription to apply for a permit pursuant to the Municipal Act".

REQUIRE TREES DURING REDEVELOPMENT EVEN WHERE NONE OCCUR UNDER EXISTING CONDITIONS

In urban areas some of the best opportunities for enhancing the urban forest is where there is community redevelopment in areas that were previously commercial or industrial and where very few trees exist under current conditions. Examples of urban design policies to encourage or require trees where none may occur under existing conditions are cited below.

- City of Toronto, Policy 3.1.1: "*5. City streets are significant public open spaces which connect people and places and support the development of sustainable, economically vibrant and complete communities. New and existing City streets will incorporate a Complete Streets approach and be designed to perform their diverse roles by: a) balancing the needs and priorities of the various users and uses within the right-of-way, including …ii. space for other street elements, such as utilities and services, trees and landscaping, green infrastructure…*".
- City of London, Policy 401: "*5. Where shade trees are proposed to be planted in areas of hardscape, such as medians, sidewalks, plazas, parking lots and other public spaces, best management practices and green infrastructure techniques may be required as a condition of development, in order to achieve long-term survival, growth, and health of the trees*".

BEST PRACTICES: Take a No Net Loss or Net Gain Approach to What Cannot Be Protected

- **Require replacement of trees approved for removal on private and public lands.**
- **Establish a net gain principle for tree replacements.**
- **Require replacement for trees approved for removal as part of the planning process in accordance with compensation requirements set out through private tree bylaws.**
- **Require that even on sites where no trees occur under existing conditions that opportunities for tree establishment are pursued.**

4.1.9 Plant the Right Tree in the Right Place

Official plans are high-level planning documents not suited or intended for site-specific guidance on tree establishment methods. However, inclusion of some high-level guidance with respect to best practice tree establishment principles and practices can help build urban forest resilience in a context of climate change. These include policies such as support for or direction of: diversification of species selection (potentially including pilot studies of assisted migration), provision of adequate soil volumes and quality and species selection tailored to the land use context (e.g., a busy ROW versus the edge of a woodland in an open space). Where there is more than one layer of municipal government to consider (e.g., regional and local), such policies should be tailored to reflect areas of respective jurisdiction.

Over the past decade it has become more common for official plans of jurisdictions in southern Ontario to suggest or specify the use of "native" or "indigenous"[41] plant species as part of required landscaping and tree plantings, particularly adjacent to established natural areas (e.g., City of Brampton Official Plan Policy 4.5.8.4). However, there are many current and emerging issues associated with planting "native" trees in urban areas in southern Ontario, and elsewhere, including:

- Urban environments tend to provide very harsh environments for trees, especially individual trees along streetscapes and busy ROWs;
- As much as trees can help communities mitigate and adapt to climate change, they are also subject to the stressors associated with climate change[42]; and
- Only a fraction of species native to the region are available through nursery stock and as a result most municipalities are inadvertently practicing assisted migration without actually evaluating its success in that context (Almas and Conway 2016).

There continues to be much debate surrounding tree species selection in urban areas, particularly in a context of climate change, and there is no definitive best practice at this time. In the interim, generally agreed upon principles related to this topic include:

- Native trees (and shrubs) have tremendous value and resilience, even in urban settings, and should continue to be widely planted;
- Invasive tree species present risks to the health of urban natural areas and should be avoided;
- Some non-native and non-invasive tree (and shrub) species can be hardier and more resilient than native species and should be considered in urban spaces where trees may not otherwise grow; and
- Work is needed to get more nurseries producing a greater diversity of non-invasive tree species and to test the success of these trees in urban areas under both current and projected conditions.

In this context, official plan policies should support the use of a wide diversity of native tree and shrub species (along with other tree establishment best practices) while allowing the use of non-native and non-invasive species when appropriate but not invasive species[43].

Examples of tree establishment (including species selection) policies from the official plans reviewed are cited below.

- City of Mississauga, Section 6.3.42: "*Mississauga will protect, enhance, restore and expand the Urban Forest … by …: c. providing sustainable growing environments for trees by allocating adequate soil volumes and landscaped areas during the design of new development and infrastructure projects;… f. increasing tree canopy coverage and*

[41] For the purposes of this guide, "native" or "indigenous" plants generally refers to species that occurred naturally in eastern North America prior to European settlement.

[42] The Globe and Mail Aug. 5, 2016 - An urban forest in crisis. Accessed at: https://www.theglobeandmail.com/news/toronto/an-urban-forest-in-crisis-why-tree-selection-is-important-for-torontoscanopy/article31295396/

[43] In Peel, CVC has a plant list that identifies all species considered invasive and would be applicable to urban areas in Peel.

diversity, by planting trees appropriate to the location and avoiding the use of non-native tree and shrub species that are invasive";

- City of London, Policy 401:

  1. The principle of planting the right tree in the right place will guide all municipal and private development-related tree planting. This involves the assessment of a tree's long-term survival, growth, and health prospects within the context of its urban environment.

  3. Native species trees will be preferred for planting, recognizing that non-native species play an important role where native species do not survive and grow well in urban conditions or for specific landscape objectives.

  4. All street cross-sections should be designed with below and above grade infrastructure and sufficient soil volume to accommodate mature trees and allow for their long-term survival, growth, and health".
- Town of Richmond Hill, Policy 3.2.1.2: "*29. The Town shall promote the planting of native species. The planting of invasive species shall not be permitted*".
- Town of Ajax, Policy 2.1.4: "*b) Encourage the planting of native or non-native non-invasive tree species and vegetation that are resilient to climate change and provide high levels of carbon sequestration… d) Encourage the use of water-conserving irrigation systems and the provision of adequate permeable surfaces around newly planted trees to establish a secure root system*".

BEST PRACTICES: Plant the Right Tree in the Right Place

Policies related to improving urban forest resilience such as support for or direction of:

- **Diversification of species selection (potentially including pilot studies of assisted migration)**
- **Provision of adequate soil volumes and quality**
- **Species selection tailored to the land use context, and**
- **Use of a wide diversity of native tree and shrub species while allowing the use of non-native non-invasive species when appropriate but not invasive species.**

4.1.10 Support for Sustained Outreach and Stewardship

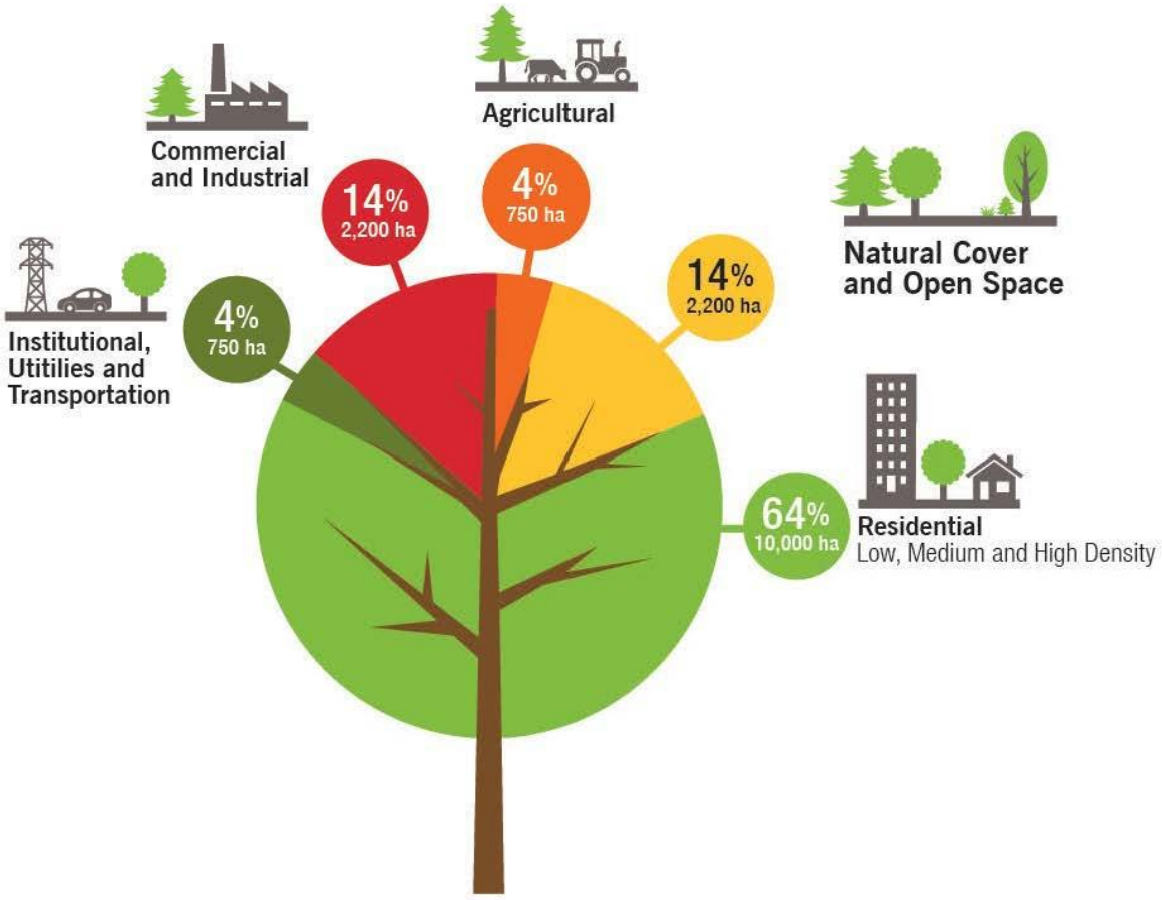
As recognized in most municipal Urban Forest Management Plans in Ontario (see examples in **Appendix A**) and stated in the United Nations *Guidelines on urban and peri-urban forestry* (FAO 2016): "*Residents are the most important and influential stewards of urban forests*". This is particularly true in the context of southern Ontario where the bulk of the urban forest and the bulk of the opportunities to enhance the urban forest are on lands outside the municipality's jurisdiction (see **Figure 4-5**). Therefore, urban forest policies at the official plan level should include explicit support for sustained outreach and stewardship initiatives targeting public and private lands. Examples from the official plans reviewed are provided below.

- City of Ottawa Official Plan, Section 1.4: "*Key factors for successful sustainability initiatives [include] … Collaboration and participation on development and implementation, with a strong representation from the community".*
- The Town of Richmond Hill in Section 3.2.1.2: *"30. The Town shall continue to promote public awareness and stewardship initiatives that educate residents about the value and*

importance of protecting the natural environment and that involve residents in the planting and care of trees".

- The City of Mississauga's Official Plan, Section 6.3.42: "*Mississauga will protect, enhance, restore and expand the Urban Forest … by …: h. promoting the management and enhancement of the Urban Forest on public and private property; i. providing public education and encouraging stewardship"*.
- City of London, Policy 401: *"15. The City will support and collaborate with community organizations to foster stewardship and facilitate additional tree planting in London by institutions, businesses, and individuals. The City shall encourage tree planting programs by all sectors of the community that lead to the planting of native tree species and achievement of tree canopy cover targets"*.

Where there is more than one layer of municipal government to consider (e.g., regional and local), such policies should be tailored to reflect areas of respective jurisdiction.



Credit: York Region Forest Management Plan (2016)

Figure 4-5. In York Region most of the opportunities for urban forest expansion are on private residential, commercial and industrial lands

SEEK AND PURSUE OPPORTUNITIES FOR WOODED NATURAL AREAS SECUREMENT WHERE FEASIBLE

Securement of natural areas and open spaces is a well-established mechanism that has been, and continues to be, used by various municipalities to help bring greenspaces into public ownership, or to help ensure that such features are retained in a natural state while remaining in private ownership. "Securement" captures a range of options including: conservation easements on private lands, land trusts, donations of lands to a public agency and outright purchase by a public agency.

The conventional thinking with respect to natural areas conservation in urban areas – which still prevails – has been that natural areas in public ownership are better managed and maintained (from an ecological perspective) than those in private ownership (e.g., FAO 2016), although keeping some publicly accessible spaces in private ownership is increasingly being explored in urban jurisdictions in Ontario and elsewhere (e.g., City of Toronto – Privately-owned Publicly-Accessible Spaces also knows as POPS).

While a number of municipalities (including Peel) and conservation authorities (including CVC and TRCA) have explored and implemented different types of greenlands acquisition strategies over the years, the rise of land prices in the GTA as well as in other urban areas in southern Ontario has been making it increasingly cost-prohibitive to make outright acquisition a significant part of any securement strategy. Nonetheless, securement of existing natural areas, open spaces and parklands through the planning process remains a recognized best practice that can contribute to sustaining the urban forest.

Peel Region has an active greenlands securement program as well as policies supporting implementation of this program in its Official Plan (Section 2.6.2) that should be updated as needed and carried forward into new official plan policies. Greenlands securement could also be identified in the regional and local official plans as one tool for sustaining and enhancing the urban forest in Peel.

BEST PRACTICES: Support for Sustained Outreach and Stewardship

- **Support for sustained outreach and stewardship initiatives targeting public and private lands.**
- **Seek and pursue opportunities for wooded natural areas securement where feasible.**

4.1.11 Build on Available Resources, Partnerships and Funding

Resources are always a limiting factor and will continue to be a challenge to secure adequate levels of sustained funding to comprehensively manage and monitor the urban forests. Therefore, strategic planning that helps prioritize efforts and includes leveraging available partnerships and funding is critical.

SUPPORT STRATEGIC PLANNING AND MANAGEMENT OF THE URBAN FOREST

Most of the progressive official plan urban forest policies cited in **Appendix C** either direct the development of an Urban Forest Management Plan or were developed based on recommendations from one.

The Region's Urban Forest Strategy (2011) includes the development of "*comprehensive Urban Forest Management Plans*" for all local municipalities as Action 3a and "*review and update Management Plans at regular five year intervals*" as Action 3b. Currently, Mississauga has developed and is implementing a Natural Heritage & Urban Forest Strategy (2014)[44], including an Urban Forest Management Plan (2014)[45], while Brampton has developed an Environmental Master Plan (2014)[46] and recently initiated the development of an Urban Forest Management Plan. The Town of Caledon, which has much smaller urban areas and much vaster rural and natural areas than the local municipalities to the south, does not have an Urban Forest Management Plan or Strategy, but such a document would be a useful tool as development pressures intensify in the Town.

A prominent part of Brampton's Vision 2040[47] includes a vision for the urban forest. This vision was developed with a high-level of citizen support for greenspace expansion and investment in the urban forest and sets a direction that can be built upon and implemented through its urban forest management plan.

Given this context, local best practices include an official plan policy at the Regional level to require local municipalities to have Urban Forest Management Plans and to support them as they develop, review and update their Urban Forest Management Plans.

BUILD ON EXISTING INDIGENOUS ENGAGEMENT AND PARTNERSHIP OPPORTUNITIES

Engagement with Indigenous groups is required as part of any federal, provincial or municipal EA process (see **Section 3.1.11**) and some municipalities are working to expand this engagement into other aspects of environmental planning, including planning related to natural heritage systems and the urban forest. For example, a recent request for proposal from the City of London to update their environmental management guidelines included engagement with First Nations and the development of engagement standards with First Nations for environmental projects outside of the EA process as a key deliverable.

Peel and its local municipalities could similarly engage with the Indigenous organizations in the area to develop standards or protocols for engagement on environmental projects within and outside of the EA process, and potentially identify opportunities for partnering on activities related to the urban forest as well as other natural heritage issues. Some guidance has been developed by the Province[48] in this regard.

BUILD ON EXISTING AGENCY AND COMMUNITY PARTNERSHIPS AND FUNDING

Some key partners and potential sources of funding for Ontario municipalities (as noted in other sections of this guide) include local conservation authorities, Tree Canada, the Federation of Canadian Municipalities, local Public Health units and the Canadian Food Inspection Agency

[44] http://www7.mississauga.ca/Departments/Rec/parks/nhufs/pdf/FINAL_nhufs.pdf

[45] http://www7.mississauga.ca/Departments/Rec/parks/nhufs/pdf/FINAL_ufmp.pdf

[46] http://www.brampton.ca/EN/Business/planning-development/projects-studies/Documents/Environmental%20Master%20Plan/Final%20Documents/Green%20Paper_11_10_2014.pdf

[47] https://www.brampton.ca/EN/City-Hall/Documents/Brampton2040Vision/brampton2040Vision.pdf

[48] Government of Ontario - The Urban Indigenous Action Plan, accessed Nov. 27, 2019: https://www.ontario.ca/page/urban-indigenous-action-plan

(CFIA). Additional key partners include local: schools (including colleges and universities), businesses, landowners, residents' groups and environmental organizations.

As stated in the United Nations *Guidelines on urban and peri-urban forestry* (FAO 2016), urban forest planning cannot be successful without policies that require jurisdictions to: "*Seek funding opportunities and partnerships and develop incentive schemes, identify innovative technologies and techniques, and potential research partners*, [and] w*ork collaboratively with schools and education and capacity-building institutions to increase knowledge"*.

Therefore, urban forest policies in official plans should direct municipal staff to: build on existing partnerships with agencies, other municipalities and a broad range of organizations; seek funding opportunities; pursue targeted research opportunities; and develop incentives for urban forest stewardship on private lands. Examples of such policies from the official plans reviewed are provided below.

- City of Mississauga Official Plan, Policy 6.3.4.2: "*Mississauga will protect, enhance, restore and expand the Urban Forest …by…j. providing strategic partnerships with regulatory agencies and others to address invasive non native species and diseases and other management challenges*".
- City of Ottawa, Policy 2.4.5: "*9. The City will work with Conservation Authorities, rural landowners, community groups, organizations working with urban forestry or private land forestry, and other interested parties on a strategy to manage and protect forests in the rural and urban area"*.
- Town of Richmond Hill, Policy 3.2.1.2: "*31. The Town will encourage and work with the Province and other stakeholders involved in forest management to maintain and enhance publicly and privately-owned forested lands and to encourage landowners, through stewardship initiatives, to use good forestry practices*".
- City of Guelph policy 4.1.7.3:
    - "*1. Public agencies, community organizations, and private landowners are encouraged to protect and enhance the City's Natural Heritage System and the Urban Forest.*
    - *2. The City will work with the GRCA and other public and private organizations to promote stewardship and leverage funding to support land stewardship activities…*
    - *5. The City will promote stewardship of the Natural Heritage System and the Urban Forest*".
- City of London, Policy 401(15): "*The City will support and collaborate with community organizations to foster stewardship and facilitate additional tree planting in London by institutions, businesses, and individuals. The City shall encourage tree planting programs by all sectors of the community that lead to the planting of native tree species and achievement of tree canopy cover targets*".
- York Region: *"2.2.52 To encourage and work with the Province and other stakeholders involved in woodlands management to maintain and enhance publicly and privately-owned forested lands, and to encourage landowners through stewardship initiatives to use good forestry practices"*.

In addition, the only policy in Peel Region's current official plan that specifically mentions the urban forest is focussed on partnerships – Policy 2.5.2.9: "*Work jointly with the agencies and area*

municipalities to develop urban forest strategies and to encourage and support programs and initiatives that maintain and enhance the urban forest canopy". This policy direction could be expanded to include a broader range of partners and funding opportunities.

BEST PRACTICES: Build on Available Resources, Partnerships and Funding

Require local municipalities to have Urban Forest Management Plans and to support them as they develop, review and update their Urban Forest Management Plans.

Commit to:

- **Building on existing Indigenous engagement and partnership opportunities**
- **Building on existing agency and community partnerships and funding**
- **Pursuing targeted research opportunities, and**
- **Developing incentives for urban forest stewardship on private lands.**

4.1.12 Lead by Example

Efforts to implement progressive urban forest planning measures through the planning process on private lands can be seriously undermined if proponents and/or community members detect that the municipality is not applying comparable practices on its own lands. As stated in the United Nations *Guidelines on urban and peri-urban forestry* (FAO 2016), best practices are in effect where: "*Urban forests on both public and private land are protected and managed to provide the benefits of the "right tree in the right place" and support the integrity of natural features*". Therefore, official plans should include policy that directs comparable urban forest policies and practices to be applied on municipal lands and municipal/capital projects as on private lands. Examples of such policies from the official plans reviewed are cited below.

- Town of Oakville: "*10.12.1 For every square metre of leaf area that is removed from Town property or from Town road rights-of-way, sufficient trees will be replanted to replace the lost square metres of leaf area*".
- City of Guelph, Section 4.1.6.1: "*Where the City is undertaking infrastructure work, healthy non-invasive trees within the urban forest will be retained to the fullest extent possible. Where trees are required to be removed, relocation or replacement plantings will be provided by the City*".
- City of London, Policy 400: "*1. Good forestry management and arboricultural practices will be applied by the City and its agencies and will also be required of private sector property owners and utility companies as required by policy, by-law, guidelines, or conditions associated with development for all public trees*".
- City of London, Policy 401: "*6. For all municipal infrastructure renewal or facilities projects, protecting existing trees and tree planting will be a high priority. Tree planting will be incorporated at the earliest design phases of all municipal projects. The design will maximize potential plantable space and include planting available locations within the project area limits*".
- City of Ottawa, Policy 2.4.5 (9):
    - *The City will work … on a strategy to manage and protect forests in the rural and urban area. This work will include …*

        b. Developing current management plans for forests owned by the City;

c. Implementing best management practices for City-owned street trees and forests and taking a leadership role in urban forestry programs nationwide;
d. Continuing to naturalize City-owned greenspaces.

- City of Toronto, Policy 3.3: "*1. … public and private city-building activities and changes to the built environment, including public works, will be environmentally friendly, based on: …d) preserving and enhancing the urban forest by: i. providing suitable growing environments for trees; ii. increasing tree canopy coverage and diversity, especially of long-lived native and large shade trees; and iii. regulating the injury and destruction of trees…*".

BEST PRACTICES: Lead by Example

Direct comparable urban forest policies and practices to be applied on municipal lands and municipal/capital projects as on private lands.

4.1.13 Recognize the Urban Forest as Green Infrastructure and a Natural Asset

There is now recognition at the provincial level of the urban forest as (a) green infrastructure and (b) as a natural asset that could be incorporated in municipal management planning (see **Sections 3.1.3, 3.1.5** and **3.1.6**) As stated in the United Nations *Guidelines on urban and peri-urban forestry* (FAO 2016), urban forest planning cannot be effective unless municipalities: "*Develop a business case for urban forests as green infrastructure to secure funding"* and "*[s]table long-term financial support is available for UPF and other nature-based solutions*".

A best practice at the official plan level is therefore to: (a) recognize the urban forest as a valued green infrastructure component, and (b) provide direction to incorporate it into municipal asset management planning. Although incorporating the urban forest into municipal asset management planning does not account for all of the services it provides (see **Figure 4-2**), this approach helps ensure the urban forest is recognized as an asset requiring stable, long-term funding for its maintenance and enhancement.

The provincial policy direction recognizing the urban forest as green infrastructure and requiring municipalities to undertake asset management planning is relatively new, and so there are not many existing official plans that explicitly reflect this direction. Three examples of official plan text and one official plan policy that support sustained investment in the urban forest and speak to valuation of natural assets are provided below.

- The City of Mississauga's Official Plan incorporates the definition of green infrastructure as including urban forests from the Provincial Policy Statement (2014, 2019) and uses the term in the plan's guiding principles and in policy 10.6.23: "*Green infrastructure, such as bioswales, should be protected during construction and maintenance. Green infrastructure damaged during construction or maintenance should be restored to the satisfaction of the City and appropriate conservation authority*".
- City of Toronto's Official Plan (2002), Section 5.3.3 - Strategic Reinvestment, Preamble: "*In a world of limited resources, an important investment priority must be to take care of what we have – to maintain our streets, water and sewer infrastructure and watercourses,*

parks and urban forest, cultural and recreation facilities, transit and City owned buildings and housing in a "state of good repair".

- City of Ottawa Official Plan (2013), Section 1.4: "*Key factors for successful sustainability initiatives [includes] … Decision-making and monitoring systems that consider and provide information in a way that balances social, financial and environmental considerations – this includes systems that strive to adequately "value" environmental aspects"*.
- The City of London's Official Plan has eight Forest City Goals including: "*5. Our Urban Forest is managed and invested in as infrastructure, and trees are valued as important assets*".

BEST PRACTICES: Recognize the Urban Forest as Green Infrastructure and a Natural Asset

- **Recognize the urban forest as a valued green infrastructure component.**
- **Provide direction to incorporate it into municipal asset management planning.**

4.1.14 Include Key Definitions

In addition to having clear and consistent definitions for "woodland" and what makes a woodland "significant"[49] in municipal official plans (which the Region and local municipalities already have) there are a few additional definitions that should be included to support the clear interpretation and facilitate the application of urban forest policies, as follows:

- A definition of the "urban forest" as it pertains to that municipality
- A definition of "tree" (see discussion in **Section 4.3.3**)
- Definitions of "green infrastructure" and "impacts of a changing climate" from the PPS, and
- Potentially other definitions depending on the policies adopted (e.g., no net loss or net gain, adaptation, vulnerability).

Peel's Urban Forest Strategy (2011) includes a good definition of the urban forest (see **Section 4.3.1**) that could be brought into the official plan and Mississauga's Official Plan already includes a definition of the urban forest. These should both be considered by Brampton and Caledon when they update their official plans.

The definitions for "green infrastructure" and for "impacts of a changing climate" from the PPS cited below both reflect relatively new policy directions and should be incorporated into official plan policies to support evolving urban forest and other resilient community policies.

- *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.*

[49] *Peel Region and its local municipalities have already undertaken comprehensive technical and planning studies, and have gone though appeal processes, to arrive at the current definition for "woodland" and related criteria for woodland significance. The municipalities have further indicated that these terms and the policies related to them are working well.*

- *Impacts of a changing climate: means the present and future consequences from changes in weather patterns at local and regional levels including extreme weather events and increased climate variability.*

Municipalities in Peel and elsewhere in Ontario seeking to align urban forest policies with some of the current provincial direction related to health environments and climate change, should also consider the use of some of the defined terms in the provincial *Healthy Environments and Climate Change Guideline* (2018) (see **Section 3.1.10**) such as "adaptation" and "vulnerability".

- *"Adaptation: The process societies go through in order to prepare for and cope with an uncertain future. Adapting to climate change entails taking measures to reduce the negative effects of climate change – or to take advantage of the positive effects.*
- *Vulnerability: It is the propensity or predisposition to be adversely affected. Vulnerability can arise because of individual susceptibility, geographic location, socioeconomic factors, and a wide range of other factors that determine an individual or community's susceptibility to harm and ability to cope with an event. For example, certain individuals can be vulnerable to extreme heat events because of where they live (parts of cities may warm more than others), characteristics of their dwelling (such as whether there is cross ventilation) that influence inside temperature, socioeconomic status, age, fitness, and a range of other factors that determine their susceptibility to high ambient temperatures".*

Use of such definitions builds on current provincial direction and can assist with the development and implementation of policies that align urban forest objectives with municipal green infrastructure and community human health objectives.

BEST PRACTICES: Include Key Definitions

Definitions in addition to "woodland" and "significant woodland" to support the clear interpretation and facilitate the application of urban forest policies, as follows:

- **A definition of the "urban forest"**
- **A definition of "tree" (see discussion in Section 4.3.3)**
- **Definitions of "green infrastructure" and "impacts of a changing climate" from the PPS, and**
- **Potentially other definitions depending on the policies adopted (e.g., no net loss or net gain, adaptation, vulnerability).**

4.1.15 Summary of Best Practice Directions for Urban Forest Policies in Official Plans

A summary of best practices and opportunities for urban forest policies in official plans in urban jurisdictions in Ontario is provided in **Table 4-1**. Although many of the official plan directions identified can be tailored for both regional and local official plans, some may be more appropriate for one over the other depending on jurisdictional differences, as noted. Specific example policies for each best practice are included in each of the respective sub-sections, as cited in the table.

Table 4-1. Summary of Best Practices and Opportunities for Urban Forest Policies in Official Plans in Urbanizing Municipalities in Ontario

Best Practice Principle (Guide Section*)	**Implementation Guidance for Official Plans**	**Regional or Local Level****
Policy Structure - Highlight and Integrate Urban Forest Policies (Section 4.1.1)	• Include goals related to the urban forest in the overall plan direction. • Clarify the relationship between natural heritage and urban forest policies. • Include urban forest policies as a stand-alone section and integrate urban forest policies in other sections.	• Both • Both • Both
Include an Urban Forest Vision and Goals That Recognize Co-benefits (Section 4.1.2)	• Include direction that recognizes urban forest co-benefits. • Build on direction from existing urban forest strategies and plans at the respective jurisdictional level. Local official plans may build on the regional vision and goals if they do not have their own strategy or plan.	• Both • Both
Include Urban Forest Targets – Carefully (Section 4.1.3)	• Develop jurisdiction-specific targets based on local municipal data and context. • Develop regional canopy cover targets in consultation with local municipalities. • Commit to working towards equitably dispersed canopy cover.	• Both • Region • Both
Align Policies with Human Health Risk and Climate Change Risk Mitigation (Section 4.1.4)	• Include policies in Official Plans that are specifically intended to help communities maximize the co-benefits of urban forest and human/community health in the face of climate change.	• Both
Support Ongoing Inventory, Management and Monitoring (Section 4.1.5)	• Support ongoing inventory, maintenance and monitoring of the urban forest. • Support for an adaptive management approach to urban forest planning.	• Both • Both
Require Comprehensive Assessment of Trees and Woodlands (Section 4.1.6)	• Require comprehensive guidelines for wooded feature assessment (often as part of an Environmental Impact Study). • Require comprehensive guidelines for tree inventory (as well as associated tree preservation and removal plans).	• Local • Local
Strong Protection for Existing Mature Trees (Section 4.1.7)	• Provide strong and/or creative approaches for supporting protection of established trees, particularly mature and healthy trees.	• Local • Local
Take a No Net Loss or Net Gain Approach to What Cannot Be Protected (Section 4.1.8)	• Require replacement of trees approved for removal on private lands. • Require replacement of trees approved for removal on municipal lands. • Establish a net gain principle for tree replacements.	• Local • Both • Both • Local • Both

Best Practice Principle (Guide Section*)	Implementation Guidance for Official Plans	Regional or Local Level**
	• Require replacement for trees approved for removal as part of the planning process in accordance with compensation requirements set out through private tree bylaws. • Require that even on sites where no trees occur under existing conditions that opportunities for tree establishment are pursued.	
Plant the Right Tree in the Right Place (Section 4.1.9)	Policies related to improving urban forest resilience such as support for or direction of: • Diversification of species selection (potentially including pilot studies of assisted migration) • Provision of adequate soil volumes and quality • Species selection tailored to the land use context, and • Use of a wide diversity of native tree and shrub species while allowing the use of non-native non-invasive species when appropriate but not invasive species.	• Both • Both • Both • Both
Support for Sustained Outreach and Stewardship (Section 4.1.10)	• Support for sustained outreach and stewardship initiatives targeting public and private lands. • Seek and pursue opportunities for wooded natural areas securement where feasible.	• Both • Region
Build on Available Resources, Partnerships and Funding (Section 4.1.11)	• Require local municipalities to have Urban Forest Management Plans and to support them as they develop, review and update their Urban Forest Management Plans. Commit to: • Building on existing Indigenous engagement and partnership opportunities • Building on existing agency and community partnerships and funding • Pursuing targeted research opportunities, and • Developing incentives for urban forest stewardship on private lands.	• Region • Both • Both • Both • Both • Both
Lead by Example (Section 4.1.12)	• Direct comparable urban forest policies and practices to be applied on municipal lands and municipal/capital projects as on private lands.	• Both
Recognize the Urban Forest as Green Infrastructure and a Natural Asset (Section 4.1.13)	• Recognize the urban forest as a valued green infrastructure component. • Provide direction to incorporate it into municipal asset management planning.	• Both • Both
Include Key Definitions (Section 4.1.14)	Definitions in addition to "woodland" and "significant woodland" to support the clear interpretation and facilitate the application of urban forest policies, as follows: • A definition of the "urban forest" • A definition of "tree" (see discussion in **Section 4.3.3**) • Definitions of "green infrastructure" and "impacts of a changing climate" from the PPS, and	• Both • Both • Both • Both

Best Practice Principle (Guide Section*)	Implementation Guidance for Official Plans	Regional or Local Level**
	• Potentially other definitions depending on the policies adopted (e.g., no net loss or net gain, adaptation, vulnerability).	

* Discussion and example policies are provided in the respective guide sections.
** Although many of the official plan directions identified can be tailored for both regional and local official plans, a few may be more appropriate for one or the other depending on jurisdictional differences, as noted. In Peel, as the local municipalities tend to be "on the front lines" with respect to the bulk of the urban forest planning, maintenance, establishment and removals, regional urban forest policies – particularly those that have implications at the local level - should be developed in consultation with the local municipalities.

4.2 Zoning, Subdivision and Site Plan Controls

4.2.1 Zoning

Well-crafted zoning bylaws can be used to effectively implement official plan policies at the local level, including natural heritage system policies, through the establishment of zones, permitted uses and general and specific provisions to regulate and control land uses and how development occurs on a site (Ontario Nature 2014). However, zoning bylaws cannot be effectively used in Ontario to help implement urban forest policies that apply outside the natural heritage system because (as per the *Planning Act* Section 34(1)) zoning can only restrict the use of land or the erection, location or use of buildings. The scope and nature of tree preservation and replacement is often scattered throughout a site and does not necessarily fall within a prescribed zone, and (b) the extent of tree preservation and removals is usually not confirmed until the Site Plan stage.

Despite these limitations, research undertaken in support of this guide (see **Appendix B**) did identify a few ways in which municipal zoning can be and is being used to help implement and enforce urban forest policies in effect in those jurisdictions, as summarized below. More opportunities were identified in relation to the Site Plan Control process, as described in **Section 4.2.2**.

- In the City of Toronto zoning requirements related to permitted uses, driveway widths, maximum lot coverage (e.g., by structures) and minimum landscaping requirements are all being used as tools to open dialogue with landowners and seek opportunities to (a) preserve existing trees on site and/or (b) establish trees in locations and with adequate space to support their growth.
- In the City of Mississauga, the Residential Woodlands overlay in their Official Plan mapping and zoning provides a trigger for requiring comprehensive studies of any trees and wooded natural areas associated with those properties when redevelopment is proposed, in accordance with the established official plan policies. Consequently, in some cases treed areas identified for protection through the redevelopment process have been zoned as Greenbelt to allow for natural regeneration, effectively protecting them from future redevelopment or expansion proposals (City of Mississauga 2014b). In other cases where tree removals are ultimately approved, proponents are required to demonstrate that replacement plantings will effectively provide a no net loss in canopy

cover within ten to 20 years, again in accordance with the established official plan policies.

- At the 2020 Ontario Urban Forest Conference (held Nov. 19, 2020), the City of Burlington's Forester indicated he works with others at the City to ensure that the City's private tree bylaw is applied through the Site Plan and Building Permit processes by consolidating requirements related to this bylaw with other zoning clearance requirements, effectively making the City's private tree bylaw part of the applicable law.

OPPORTUNITIES RELATED TO ZONING

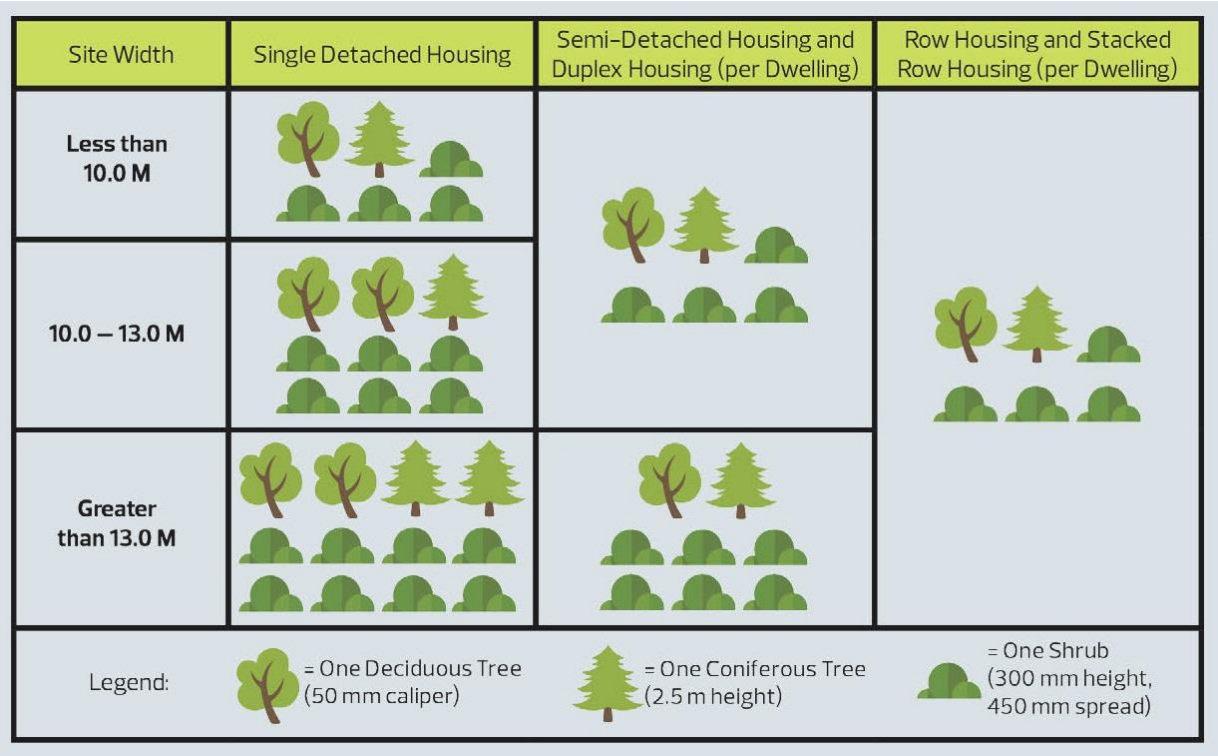
Well-crafted zoning bylaws can be used to effectively implement official plan policies at the local level, including natural heritage system policies, through the establishment of zones, permitted uses and general and specific provisions to regulate and control land uses and how development occurs on a site.

Consolidating requirements related to existing municipal tree bylaws with other zoning clearance requirements, effectively making the tree bylaw(s) part of the applicable law, has also been used effectively in at least one municipality.

However, zoning bylaws cannot be effectively used in Ontario to help implement urban forest policies that apply outside the natural heritage system because (as per the Planning Act Section 34(1)) zoning can only restrict the use of land or the erection, location or use of buildings.

Although it is under a different *Planning Act* so not applicable to Ontario, it is interesting that the City of Edmonton's Zoning Bylaw requires that landowners landscape their property within 18 months of occupancy and specifies numbers of trees and shrubs to be located on the property, with numbers varying depending on the type of zoning and size of allocated landscaping area. Residential development requirements are shown in **Figure 4-6** below excerpted from their municipal information brochure on "hard surfacing" and landscaping[50].

50 https://www.edmonton.ca/city_government/documents/Residential_Landscaping_and_Hardsurfacing_Requirements.pdf



Credit: City of Edmonton Residential Landscaping Requirements Brochure (2017)

Figure 4-6. Illustration of tree and shrub establishment requirements for different sized lots

4.2.2 Subdivision and Site Plan Controls

The *Planning Act* (1990) (in particular Section 41, Site Plan Control) provides local municipalities with the authority to identify trees for protection and require replacements of trees approved for removal on private lands subject to the development application and approval process: "*(2) Where in an official plan an area is shown or described as a proposed site plan control area, the council of the local municipality in which the proposed area is situate may, by by-law, designate the whole or any part of such area as a site plan control area*".

A number of municipalities in southern Ontario leverage this authority to require that all trees (typically of at least 10 cm or 15 cm in trunk diameter at breast height (dbh)) be assessed and inventoried, and that detailed tree preservation and removal plans be submitted as part of the Site Plan Application process. This legislation, if applied in conjunction with guidelines and specifications intended to support tree health and longevity, is one of the best tools at a municipality's disposal to foster urban forest sustainability through the development process as it is at this planning level where important decisions around tree protection and establishment can be made, and where municipalities can ensure that opportunities are explored.

Seven specific opportunities and best practices for implementing urban forest objectives related to plans of subdivision and site plan applications were identified through the research and interviews undertaken in support of this guide (see text box below). Examples of where each of these has been implemented by an urban local municipality in southern Ontario are provided below.

OPPORTUNITIES AND BEST PRACTICES RELATED TO PLANS OF SUBDIVISION AND SITE PLAN APPLICATIONS

1. **Carrying official plan policies related to trees and wooded areas beyond the zoning bylaw and into site plan control and conditions of approval (e.g., Region of Halton).**
2. **Developing and implementing shade guidelines on a site-specific basis as part of park planning or redevelopment of public open spaces to maximize shade benefits (e.g., City of Toronto).**
3. **Requiring a canopy cover plan as part of all Plans of Subdivision and Site Plans to demonstrate the development's contribution to the urban forest and Town-wide canopy coverage target of 40% as well as compliance with the applicable regulations and standards (e.g., Town of Oakville).**
4. **Having Site Plan guidelines that include requirement for: tree related plans (e.g. Tree Inventory and Preservation Plans, Vegetation Compensation Plans, Landscape Plan, Street Tree Plans), tree protection (e.g. tree protection fencing, root protection zones) and establishment of street trees and establishment of landscaping requirements on private property (e.g. tree planting standard detail, securities collected, inspections and warranty periods) (e.g., City of Mississauga).**
5. **Application of Green Standards or Sustainability Standards through Site Plan (e.g., City of Brampton).**
6. **Use of Conditions of Subdivision to enforce tree related requirements (e.g., City of Guelph).**
7. **Having qualified staff to review Site Plans and tree-related reports/plans submitted, and to oversee or undertake site inspections to ensure compliance with approved plans and conditions.**

BEST PRACTICE EXAMPLE 1: REGION OF HALTON - CARRYING OFFICIAL PLAN POLICIES INTO SITE PLAN

The Region of Halton (which includes the City of Burlington, Town of Oakville, Town of Milton and Town of Halton Hills) includes a policy in its Official Plan that requires the recommendations of an approved Environmental Impact Assessment (or equivalent) "*including the placement of lot lines and structures, carried out under Section 118(3) and endorsed by the Region be implemented through official plan amendments, zoning bylaws, site plan control, conditions of planning approval or regulations by the appropriate authority*" (Region of Halton 2018). As noted in the natural heritage policy review by Ontario Nature (2014): "*This policy recognizes that implementation of Official Plan policy should extend beyond the zoning bylaw to include other tools such as site plan control, conditions of approval, and other regulations by an appropriate authority*".

BEST PRACTICE EXAMPLE 2: CITY OF TORONTO - DEVELOPING AND IMPLEMENTING SHADE GUIDELINES

A Shade Policy Committee led by Toronto Health was formed in Toronto in the early 2000's to "*create a supportive environment and cultural norm for sun protection for the public*". This committee worked to build awareness while also developing a shade audit tool with the City's Parks, Forestry and Recreation section and advocating for development and approval of a Shade Policy and Guideline. In 2008 Council passed a motion based on a report of park shade audits to direct the committee to develop Shade Guidelines which were published in 2010.

The Shade Guidelines (2010) make recommendations for increasing shade in public spaces in the City, particularly during the summer months when the health risks are highest. Although they recommend both natural and artificial sources of shade, the guidelines make a strong and compelling case for the health benefits of trees in terms of providing shade (as well as cooling and air quality benefits) while protecting public space users from ultraviolet radiation. The Shade Guidelines support the City's Climate Change Action Plans, Toronto Green Standards (see **Section 4.6.3**) and the City's tree canopy cover target of 40%. They also provide a tool for planning and incorporating strategic plantings on a site-specific basis as part of park planning or redevelopment of public open spaces to maximize shade benefits in Toronto over the summer.

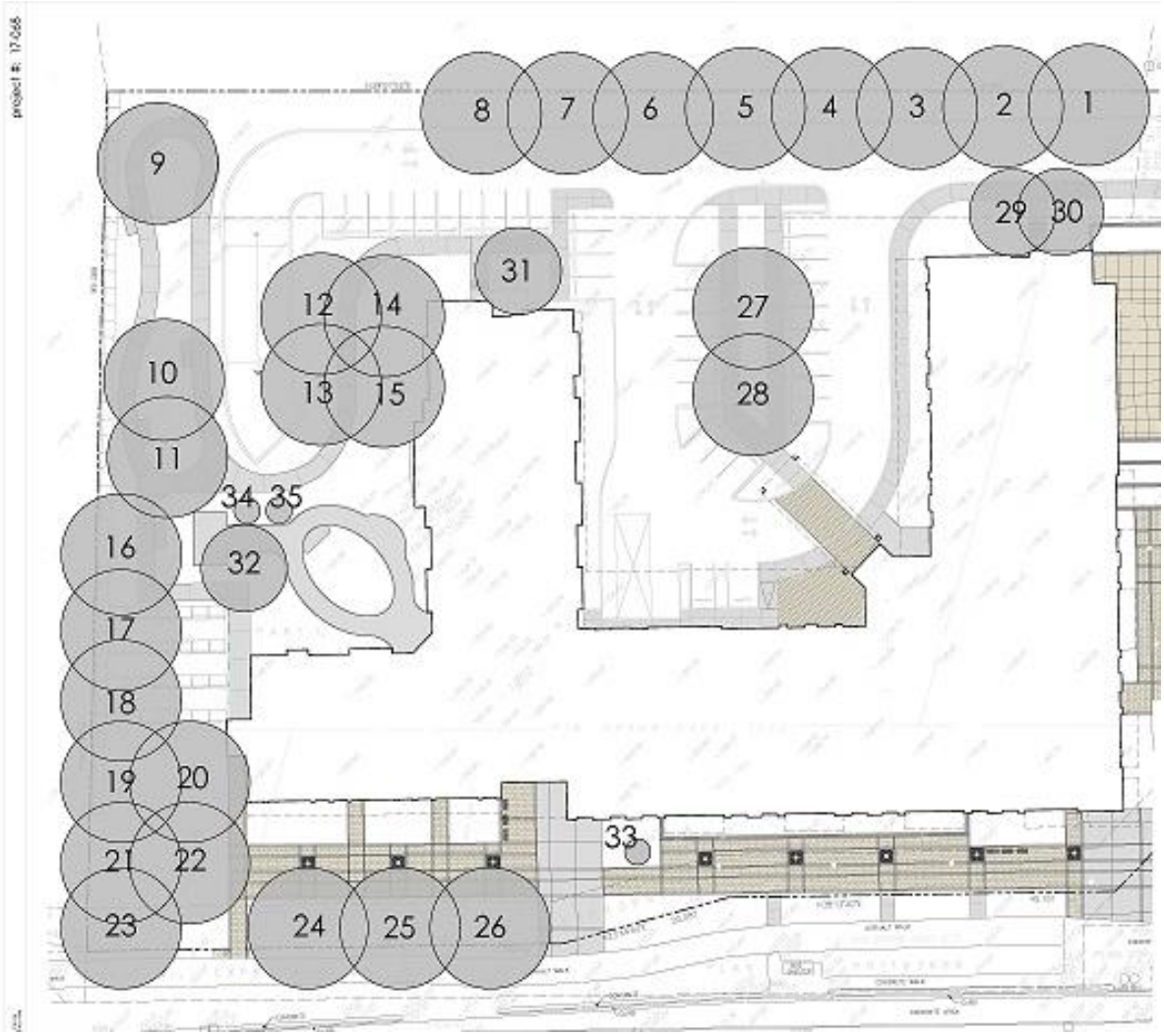
BEST PRACTICE EXAMPLE 3: TOWN OF OAKVILLE - REQUIRING CANOPY COVER PLAN PLANS

In 2016 the Town of Oakville released a *Canopy Cover Plan and Canopy Calculation Chart* to help comply with the development application guidelines for North Oakville. The Town's Official Plan sets a Town-wide canopy cover target of 40% (see **Appendix C**). As part of the North Oakville Urban Forest Strategic Management Plan (2012), analyses were done and recommendations were made regarding canopy cover targets for each type of land uses to ensure that all types of development are contributing to the Town-wide target, as follows:

- 20% for all Residential uses
- 15% for all Commercial uses
- 20% for all Employment/Industrial uses
- 25% for Institutional uses
- 20% for Public uses
- 15% for Storm Water Management uses, and
- 34% for Arterial, Avenue, and Collector Roads and Transit Ways.

The Guidelines also contain specifications for soil volumes and tree spacing, as well as specifics of how to measure existing canopy and project future canopy.

As stated in the guidelines, a canopy cover plan and canopy calculation chart is required as part of all Plan of Subdivisions and Site Plans to (a) "*demonstrate a proposed development's contribution to the urban forest and Town-wide canopy coverage target of 40%*" and "*demonstrate compliance with the applicable implementing regulations, standards and guidelines contained in the Zoning By-laws, North Oakville Urban Forest Strategic Management Plan (NOUFSMP), Livable By Design Manual documents, and other contributing documents*". An example of such a plan is provided in **Figure 4-7**.



Credit: Adesso Design Inc.

Figure 4-7. Example of a Canopy Cover Plan for North Oakville

BEST PRACTICE EXAMPLE IN PEEL 4: CITY OF MISSISSAUGA – USE OF SITE PLAN GUIDELINES

Site Plan Control in the City of Mississauga applies to several different categories of lands, including certain residential areas of the City. Through this process, development proponents must submit detailed Site Plan Applications, outlining various aspects of the proposed development for review by City staff, other regulatory agencies and potentially affected stakeholders.

The City's *Site Plan Applications: Process Guidelines* manual is the primary guiding document for this form of development (under Site Plan Control Bylaw 0293-2006). Key requirements for trees under Site Plan Control include a tree survey plan (including mapping and identification of trees >10 cm dbh) and tree protection in accordance with City specifications for all trees identified for preservation. Arborist reports are also often requested as part of this process. The City's *Design Guidelines and Site Plan Requirements: New Dwellings, Replacement Housing and Additions* manual (May 2010) also provides guidance for tree protection during development specifically tailored to infill situations.

BEST PRACTICE EXAMPLE 5: CITY OF GUELPH - USE OF CONDITIONS OF SUBDIVISION

Many municipalities are known to use conditions of subdivision or site plan approval to help implement, among other things, approved commitments related to tree protection and establishment. As part of the research undertaken in support of this guide, municipal staff from the City of Guelph (see **Appendix B**) identified the use of conditions of subdivision as a tool they have found to be effective for helping to implement urban forest policies and standards. Such conditions, which are developed on a case-by-case basis for each site, can include requirements for: establishment of street trees, landscaping (including trees and shrubs), tree compensation plantings, maintenance of plantings including warranty periods, and conveyance of designated park land and/or natural heritage system into City ownership. Conditions of subdivision provide a strong source of leverage because typically the municipality will not provide sign-off or release securities related to specific conditions until they have been met to their satisfaction.

BEST PRACTICE EXAMPLE 6: CITY OF BRAMPTON - USE OF SUSTAINABILITY STANDARDS

Over the past two decades there has been a renewed interest and push for sustainable community planning in urban Canada and around the world. In Ontario this has manifested itself, on a macro scale, in the identification of the Greenbelt and the related growth planning for the lands outside the Greenbelt being focussed on intensification that incorporates a range of sustainability measures related to transit, community design and building design, including incorporation of green spaces and trees.

In response to this direction, the Cities of Brampton[51] and Vaughan and the Town of Richmond Hill worked together to produce a consolidated set of Sustainability Metrics to evaluate and score the environmental sustainability performance of new Block Plans, Plans of Subdivision and Site Plans. Brampton also developed a web-based Sustainability Assessment Tool (SAT) that uses a series of questions to objectively quantify the sustainability attributes of a development application and generate a sustainability score. Answers are drawn from and verified through the information submitted in the development application's various component plans/drawings and studies.

The SAT includes the following metrics specifically related to the urban forest:

- Planting a diversity of tree species
- Maintaining existing healthy trees and compensating for trees to be removed
- Ensuring an adequate volume and quality of soil is provided for plantings
- Meeting canopy cover targets (e.g., at least 50% of sidewalks are shaded within 10 years, shade trees must be provided along street frontages and in parking lots)
- Enhancing the natural heritage system (e.g., invasive species management, woodland buffer reforestation), and
- Providing adequate volumes of soil and soils that are of suitable quality[52].

[51] City of Brampton – Measuring the Sustainability of New Development – accessed Aug. 21, 2019 - https://www.brampton.ca/EN/Business/planning-development/guidelines-manuals/Pages/Measuring-the-Sustainability-Performance-of-New-Development.aspx

[52] TRCA has a guide for Preserving and Restoring Healthy Soil: Best Practices for Urban Construction (2012) (https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/healthy-soils/preserving-and-restoring-healthy-soil-best-practices-for-urban-construction/) while CVC has a Healthy Soils Guideline for the Natural Heritage System (2017) (https://cvc.ca/wp-content/uploads/2017/09/CVC-Healthy-Soils-Guidelines-NHS-Web-V5.pdf). Both of these documents include useful technical guidance.

A specific example from the SAT is provided in **Figure 4-8** which includes a "mandatory target" (generally in compliance with established standards), "minimum target" and "aspirational target for each measure. Municipal Forestry staff in Brampton have indicated that use of this tool has been very effective in helping to maximize tree protection and establishment opportunities at the site level.

	Point Allocation			
Mandatory Target:	Provide an Tree Evaluation Report that identifies and evaluates evaluates where on-site healthy trees will be protected or removed, *and* compensation for removal of healthy tableland trees has been proposed in accordance with the City's requirements	DBH (cm)	Compensation Ratio	0 Points
		15-20	1:1	
		21-35	2:1	
		36-50	3:1	
		51-65	4:1	
		greater than 65	5:1	
Minimum Target:	Where healthy tableland trees are proposed for removal, enhanced compensation is provided based on basal area	Basal Area (Sq. Cm)	Compensation Ratio	2 Points
		0-10	1:1	
		10.1-20	3:1	
		20.1-30	5:1	
		30.1-50+	8:1	
Aspiration Target:	75% of healthy, tableland trees greater than 20 cm DBH are preserved in-situ, on site			3 Points

Credit: Brampton's Sustainable Community Program (2018)

Figure 4-8. Example of an urban forestry metric from Brampton's Sustainability Tool

BEST PRACTICE EXAMPLE 7: TOWN OF RICHMOND HILL - URBAN FORESTRY STAFF INVOLVED IN PLAN REVIEW AND SITE INSPECTIONS

Having qualified staff to review Site Plans and tree-related reports/plans submitted, and to oversee or undertake site inspections to ensure compliance with approved plans and conditions is a recognized best practice and a recognized challenge in many Urban Forest Management Plans (see examples in **Appendix A**).

In Richmond Hill recent consultations undertaken with staff as part of their Draft UFMP development revealed that, despite some staffing constraints, the Town is generally quite proactive about: having qualified Arborists and Landscape Architects involved in plan review; coordinating with tree bylaw review when appropriate; developing conditions related to tree protection and establishment for inclusion in conditions of approval; requiring security deposits for both landscaping and trees requiring protection when deemed appropriate; and undertaking spot site inspections and/or requiring contracted Arborists provide site inspection reports.

Credit: City of Mississauga

Figure 4-9. City of Mississauga Forestry staff inspecting tree establishment

4.2.3 Outside of Development Control Areas

Opportunities to ensure compliance with tree preservation regulations and policies outside of development control areas are more limited and more challenging to implement.

For example, smaller development activities outside of Site Plan-regulated areas in the City of Mississauga may not be regulated pursuant to the Erosion Control bylaw or require Committee of Adjustment approval. In these cases, the only required permit may be a Building Permit, which must be issued within a provincially-mandated timeline generally not exceeding ten days (or longer for larger or more complex structures). Although in Mississauga a Building Permit application is to be submitted with Tree Declaration form, it is challenging for municipal forestry staff to review these on site with the proponent within the ten-day review window. A similar situation can occur during installation of a swimming pool, which does not require a permit except for its enclosure.

Despite these challenges, some opportunities for advancing urban forestry objectives through lot division controls include the use of:

- Tree bylaws (discussed at length in **Section 4.3**), where applicable
- Erosion control and/or site alteration bylaws (i.e., bylaws that regulate the removal or placement of topsoil within a jurisdiction) (e.g., as in the Cities of Markham, London, Kingston, Hamilton, Guelph and Niagara Falls, and the Town of Oakville), and
- The Committee of Adjustment process, whereby development applications requesting variances from zoning bylaws may be reviewed by community members and municipal staff (e.g., City of Mississauga, City of Toronto).

At the 2020 Ontario Urban Forest Conference (held Nov. 19, 2020) one of the City of Ottawa's Foresters shared they have created a new "Infill Forester" position. This person, among other tasks, is responsible for reviewing applications to the Committee of Adjustment and working with the Committee and proponents on tree-related issues. Having dedicated tree-related expertise available to the committee has resulted in fewer trees being removed through this process.

4.2.4 Implement Tree Compensation

A best practice identified through the research undertaken for this guide includes requiring compensation for trees and wooded areas approved for removal.

The topic of woodland and tree compensation is complex and warrants a more in-depth discussion than what can be accommodated within this guide. Nonetheless, an attempt has been made to summarize key points of discussion and highlight current options and best practices know to the authors and reviewers. Further reading is suggested (see selected resources in **Appendix A**).

WOODLAND COMPENSATION

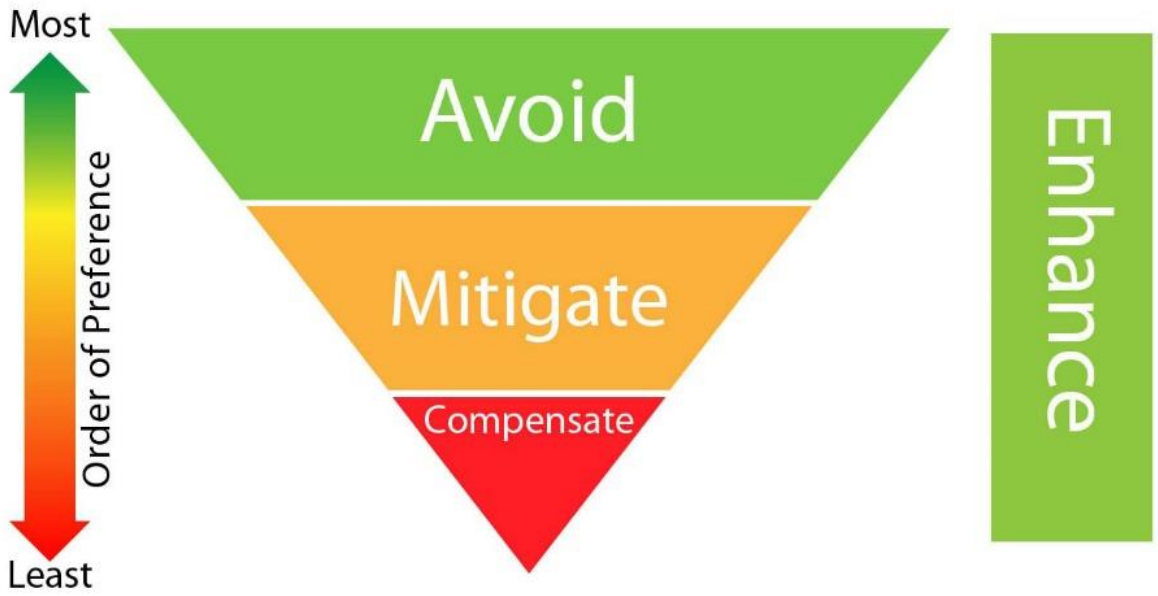
"Compensation" as it relates to natural areas (including treed natural areas) is a term and a process that many agencies in Ontario (and elsewhere) have intentionally decided not to adopt because of concerns that it implies that natural areas can simply be removed and replaced without any loss of function, or that a dollar value can be assigned to a natural feature that fully captures its value and that feature removal can simply be "bought". However, a few agencies (like TRCA and CVC) are beginning to re-introduce this term and advocate for compensation under specific circumstances and conditions.

Ecosystems (like woodlands) are naturally dynamic, diverse and complex systems built on webs of interactions between organism at multiple trophic and temporal scales. These systems are made more complex by the range of environmental (e.g., climate change) factors and land use context changes (e.g., habitat fragmentation) that influence them. Nonetheless, some ecosystems (or facsimiles thereof) under certain conditions can "rebound" and/or be restored over time.

Despite best efforts and successes in protecting "significant" natural areas in southern Ontario with policies and regulations, some natural features continue to be degraded or removed along with some of their functions, particularly in urban and urbanizing areas. It is in this context that agencies like TRCA have developed guidelines for natural area compensation under certain conditions (TRCA 2018).

TRCA's *Guideline for Determining Ecosystem Compensation* (2018) [53] and *Living City Policies* (2016) identify what could be considered "best practices" and state that compensation should:

- Only be used as a "last resort", being an option only where federal, provincial and municipal requirements do not protect the feature, and only after all other options for protecting the feature have been evaluated
- Only be considered once the protection hierarchy (or mitigation hierarchy) has been applied (see **Figure 4-10**)
- Where feasible, take place in proximity to where the loss occurs
- Be informed by best available knowledge of ecosystems and regional/local strategies
- Strive for no loss of ecosystem services/functions
- Be carried out in a transparent and timely manner
- Be separate from but potentially influenced by other project-related off-setting requirements, and
- Incorporate monitoring and evaluation, where appropriate.



Credit: Adapted from Rail Safety Central, UK

Figure 4-10. Illustration of the biodiversity mitigation hierarchy

Opportunity(ies) in Peel: There is an opportunity for the Region and its local municipalities to formally incorporate requirements for woodland and other treed area compensation in policies and guidelines, but only where (a) feature disturbance or removal is permitted under all applicable policies and legislation at the federal, provincial and municipal levels, and (b) in a mitigation hierarchy context where compensation is considered as a "last resort" after all options to avoid and minimize/mitigate impacts have been explored and exhausted.

[53] https://laserfiche.trca.ca/WebLink/0/edoc/1499894/Guideline%20for%20Determining%20Ecosystem%20Compensation,%20June%202018.pdf

Careful consideration should be given to how such policies and guidelines should be framed, how much detail should be included at the official plan level versus in a supporting policy or guideline document, and how to strike an appropriate balance between providing flexibility to accommodate site-specific conditions and circumstances, and prescribing requirements to strive for no net loss or net gain of functions.

The TRCA (2018) guidance indicates that cash-in-lieu based on the market value of the developable land being gained may be accepted as a form of compensation when an affected feature cannot be compensated for on site and another parcel of land is not readily available off-site. However, this approach implies that that a dollar value can be assigned to a natural feature that fully captures its value, may result in a net loss of function, and therefore is not recommended in this guide. In addition, there is the potential for conflict of interest (e.g., if a regulator starts to accept payment - either as cash in lieu or to construct compensation - for the loss of regulated features) that should be considered.

TREE COMPENSATION

Compensation for trees removed outside of protected natural areas has been accepted and practiced by municipalities in Ontario, and elsewhere for decades. However, the practice is evolving in southern Ontario (and in some other jurisdictions) due to increasing pressures of urbanization combined with the growing recognition of the full value of trees in urban areas (e.g., FAO 2016).

Tree compensation is complex topic that cannot be fully addressed through this guide, but an overview of known methods for tree compensation and examples of where they are being implemented in southern Ontario municipalities is provided in **Table 4-2**. As noted in the table, approaches vary and many municipalities select from a suite of approaches depending on the site, the nature of the proposed removals, the planning context and the applicable policies and legislation.

Table 4-2. Overview of approaches for tree compensation*

Method**	Brief Description	PROS	CONS	Examples***
Aggregate Caliper	Area of removed tree's stem at diameter-at-breast height (dbh) is replaced by equal combined area of planted trees.	• Relatively easy to calculate and implement • Large number of trees are typically planted	• Can be costly and greatly overcompensate for large trees over time • May not account for condition of removed trees	e.g., Burlington, Guelph
Caliper-based Tree Replacement	Number of replacement trees based on: a combination of number of trees being removed and their dbh range. May also be used as a basis for cash-in-lieu if trees cannot be planted on-site.	• Easy to calculate and implement • Aims to provides replication of services more quickly than simple ratio-based compensation • Can result in increased leaf area and canopy over time	• Can be costly and greatly overcompensate for large trees over time • May not account for condition of removed trees	e.g., Halton Region, Brampton, Markham, Caledon

Method**	Brief Description	PROS	CONS	Examples***
Cash-in-lieu	A pre-determined sum is paid to the municipality to compensate for tree removal and fund tree establishment. Typically, a fixed value per tree set by the municipality (e.g., $500).	• Easy to calculate and implement if standard formula for determining replacement cost is used • Funds can be directed to a centralized tree establishment fund	• May lose opportunities for tree establishment • Rarely accounts for full value of tree(s) being removed	Most municipalities provide this among the available options, but only when trees cannot be accommodated on-site or an alternate agreed-upon location.
Leaf Area Replacement	The leaf area of removed tree(s) is calculated using a standard formula (see Nowak 1996). Equivalent leaf area is replaced with new trees.	• Benefits lost by removing leaf area are replaced • Aims to provide immediate replication of services • Can result in increased leaf area and canopy over time	• Calculating leaf area can be difficult and may be subjective • Is very costly and land consumptive if large or large numbers of trees is removed	Discussed in the technical literature but no municipalities currently known to implement this approach.
Ratio-based Tree Replacement	A predetermined ratio of replacement trees must be established to compensate for injury or removal. May also be used as a basis for cash-in-lieu if trees cannot be planted on-site.	• Easy to calculate and implement • Can result in increased leaf area and canopy over time	• If ratio used is 3:1 or more may undercompensate for large trees and overcompensate for small trees • May not adequately replace lost leaf area for many years	e.g., Toronto, Mississauga, Pickering, Vaughan (generally 1:1 ratio for injury, 3:1 minimum for removal)
Valuation	There are different methods but the Council of Tree and Landscape Appraisers (CTLA) Guide is often used. Compensation equal to the appraised value or a percentage thereof is paid to municipality for tree's removal.	• Defensible • Widely accepted as a fair and reasonable method • Well-suited to individual trees Use of CTLA Guide provides some consistency and defensibility	• Poorly suited to natural wooded area valuation • The current CTLA Guide (10th ed.) is not well-supported by the arboricultural community • Can be complicated to calculate and include elements of subjectivity	e.g., Ajax (large trees), Oakville / Aurora / Richmond Hill (Town-owned trees), Cambridge
WHERE TREE REMOVALS ARE COMPENSATED WITH NATURAL AREA CREATION				
Area-based Replacement	A minimum number of trees are planted per unit area (e.g., stems/ha). A habitat-based approach.	• More applicable to wooded natural areas or groups of trees • Can provide habitat benefits	• Not applicable to individual trees • May take longer for canopy to develop if small trees are planted	e.g., Mississauga (1000 to 1200 stems per ha), Guelph
Mass Planting Approach	Acceptance of a combination of shrubs and potentially herbaceous species.	• Provides flexibility in the type of natural asset compensation that can be provided	• Can result in a net loss or no net gain of trees (but a gain of other vegetation)	e.g., Guelph

* Adapted and updated from the *City of Guelph Urban Forest Management Plan 2013 – 2032*.

** Note that many municipalities select from among several approaches depending on the context.

*** These are selected examples based on research completed in 2019.

While it is common practice in Ontario under the *Planning Act* to require landscaping through the site plan/development process, replacement of trees beyond what can be accommodated on site is often not pursued. However, under the *Municipal Act* it is possible to require compensation, even where it cannot be accommodated on-site, with off-site plantings or cash-in-lieu. Based on this legal framework, some municipalities request or require tree compensation where their tree bylaws apply, as well as on municipal lands and as part of capital projects.

Based on the outreach undertaken for this guide (see Appendix B) and experience in selected municipalities, an emerging practice in municipalities in southern Ontario appears to be that they are shifting away from simple ratio-based (i.e., one tree planted for one tree removed) approaches towards approaches that provide greater consideration for replacement of the canopy cover and associated functions in a reasonable time frame (e.g., a 15 to 25-year period). Examples include:

- The City of Brampton's Tableland Trees Assessment Guidelines (2018) which updates the former 3:1 replacement requirement for all healthy trees of at least 15 cm dbh with compensation ratios for healthy trees that consider the diameter of the tree(s) removed (i.e., removals of 15 to 20 cm dbh trees require 1:1 replacement, 21 to 35 cm dbh required 2:1, 26 to 60cm dbh requires 3:1, 51 to 65 dbh requires 4:1 and over 65 cm dbh requires 5:1). Cash-in-lieu may be accepted for healthy individual trees approved for removal that cannot be accommodated but is not accepted for wooded natural areas[54].
- The City of Guelph's Tree Technical Manual (2018, Draft) includes four different approaches to compensation for trees on properties regulated under the City's tree bylaw as follows:
    - Aggregate caliper formula
    - Area-based compensation
    - Mass planting approach, and
    - Cash-in-lieu.

While there is no "one size fits all" approach, requiring tree compensation as a matter of policy and practice helps reinforce that removing a tree means reducing urban tree canopy cover, and that replacing that canopy cover and the multiple benefits it provides is important for the community.

Relevance in Peel: Mississauga has general requirements for tree compensation supported by their Official Plan policies, Brampton has tree specific compensation requirements in its *Tableland Tree Assessment Guidelines* (2018) and Caledon is in the process of developing a guidance document. There is an opportunity for the Region to build on these policies and guidelines to ensure adequate replacement for trees removed on Regional lands.

BEST PRACTICE: Develop Regional Guidelines for Tree Compensation

The Region of Peel should develop guidelines for tree compensation on regional lands and as part of regional projects. Approaches should build on guidance already in place in local municipalities and consider precedents included in this guide.

[54] Notably, the Town of Caledon recently released its first Tableland Tree Removal Compensation guidelines (Town of Caledon 2020) which include an approach closely aligned with Brampton's.

4.2.5 Summary of Best Practices and Opportunities Related to Zoning, Subdivision and Site Plan Controls

A summary of best practices and opportunities for urban forest planning related to municipal zoning and Site Plan controls in urban jurisdictions in Ontario is provided in **Table 4-3**. Specific example best practices are included in each of the respective sub-sections, as cited in the table.

Table 4-3. Summary of Best Practices and Opportunities Related to Zoning, Subdivision and Site Plan Controls in the Context of Urbanizing Municipalities in Ontario

Planning Tool (Guide Section)	**Opportunity or Best Practice Related to Zoning, Subdivision and Site Plan Controls**
Zoning (Section 4.2.1)	Well-crafted zoning bylaws can be used to effectively implement official plan policies at the local level, including natural heritage system policies, through the establishment of zones, permitted uses and general and specific provisions to regulate and control land uses and how development occurs on a site. Consolidating requirements related to existing municipal tree bylaws with other zoning clearance requirements, effectively making the tree bylaw(s) part of the applicable law, has also been used effectively in at least one municipality.
Subdivision and Site Plan Control (Sections 4.2.2 and 4.2.4)	• Carrying official plan policies related to trees and wooded areas beyond the zoning bylaw and into site plan control and conditions of approval (e.g., Region of Halton). • Developing and implementing shade guidelines on a site-specific basis as part of park planning or redevelopment of public open spaces to maximize shade benefits (e.g., City of Toronto). • Requiring a canopy cover plan as part of all Plans of Subdivision and Site Plans to demonstrate the development's contribution to the urban forest (e.g., Town of Oakville). • Having Site Plan guidelines that include requirement for: tree related plans, tree protection and establishment of street trees and landscaping requirements on private property (e.g., City of Mississauga). • Applying Green Standards or Sustainability Standards through Site Plan to encourage and recognize enhanced tree protection and/or establishment (e.g., City of Brampton, City of Toronto). • Use of Conditions of Subdivision to enforce tree related requirements (e.g., City of Guelph, Town of Oakville). • Having qualified staff to: review Site Plans and tree-related reports/plans submitted, work with the Committee of Adjustment, and oversee or undertake site inspections to ensure compliance with approved plans and conditions (e.g., Town of Richmond Hill, City of Ottawa). • Developing guidelines for tree compensation on regional lands and as part of regional projects. Approaches should build on guidance already in place in local municipalities and consider precedents included in this guide.

4.3 Tree and Woodland Bylaws

In addition to the various regulations, policies and other tools described in the sections above that can be leveraged to support urban forest objectives, the *Municipal Act* provides regional and local municipalities with the ability to enact tree bylaws (as discussed in **Section 3.1.7**) to regulate the injury and destruction[55] of trees on both private and municipal lands.

Regulation of trees on private lands in Ontario is not new. The *Trees Conservation Act* implemented in 1946 allowed larger (i.e., upper tier) municipalities to pass bylaws regulating the cutting of trees in woodlands. This Act was subsequently replaced by the *Trees Act* (1950) and then the *Forestry Act* (1990) (see **Section 3.1.8**). The first piece of legislation allowing local municipalities (with populations greater than 10,000) to enact tree bylaws on private and municipal lands was the former *Municipal Act* (1990). This act was updated in 2001, came into effect in 2003, and is currently the principal piece of legislation that governs tree bylaws in Ontario. (A discussion of the *Heritage Act* as it relates trees regulation is provided in **Section 3.1.9.**)

Tree bylaws are one of the few regulatory tools available to municipalities in Ontario specifically focussed on regulation of the injury and destruction of individual trees or trees in woodlands, and over the past two decades many municipalities have passed bylaws under the authority of the *Municipal Act*. Based on the review work undertaken for this guide, more than 50 regional and local municipalities in southern, central and eastern Ontario have one or more bylaws to regulate the injury and destruction of: (a) trees in private woodlands (or forest), (b) individual trees on private property and/or (c) trees on municipal lands (e.g., roadways and boulevards, parks and open spaces) (OUFC 2012). These bylaws give municipalities the ability to approve or deny permits, attach conditions to permits, require fees for permits, and in cases where the bylaw is contravened, apply a stop work order and fine the offender.

However, tree and woodland bylaws also have limitations. They are regulatory tools and are generally not intended to prohibit tree removals as long as the proposed activity is in accordance with the established bylaw. In addition, there are several mandatory exemptions included in the *Municipal Act* (e.g., for activities undertaken by a licensed Surveyor or a municipality) which allow for tree removals without a permit.

LIMITATIONS OF TREE AND WOODLAND BYLAWS

Tree bylaws, particularly on private lands, are not generally designed to prohibit tree removals. Rather they are intended to regulate the injury and destruction of specified trees and/or treed areas and/or woodlands as defined and prescribed in the bylaw. This means that, in practice, selective removal of trees in a woodland in accordance with good forestry practices or is often permitted and that removal of individual regulated trees may also be permitted under specified conditions and in accordance with the established bylaw.

[55] The *Municipal Act* uses the terms "injury and destruction" as it relates to the regulation of activities related to woodlands and trees, therefore even though these terms may be overly explicit for some, they have been adopted for use in this guide and are also recommended for use in municipal tree bylaws.

Nonetheless, a tree or woodland bylaw can help ensure that trees and woodlands on private lands are not removed entirely without due process or without an approved management plan in place (in the case of woodlands). In addition, having a municipal process in place regulating certain types of trees and/or trees in certain areas provides opportunities for outreach and education, speaks to the municipality's commitment to managing trees and wooded areas in the community, and provides a legal mechanism whereby appropriate compensation can be required for trees approved for removal and whereby those that pre-emptively remove trees outside the process can be charged and fined.

This sub-section of the guide provides:

- A brief overview of the types of tree bylaws in Ontario (**Section 4.3.1**)
- An overview of the tree-related bylaws in Peel and an identification of gaps (**Section 4.3.2**)
- An overview of best practice directions for tree and woodland bylaws in Ontario (**Section 4.3.3**)
- A summary of key resources available to municipal staff related to tree bylaw development and implementation in Ontario (**Section 4.3.4**), and
- A summary of the best practice directions and opportunities identified for tree and woodland bylaws in the context of Peel (**Section 4.3.5**).

This review has drawn on information and assessments from the following sources:

- A review of more than 50 area municipal bylaws prepared for the Ontario Urban Forest Council (OUFC 2012)
- A detailed review of more than 20 private woodland and private tree bylaws in representative urban and urbanizing municipalities across southern Ontario (**Appendix D**) as well as all bylaws in Peel (**Appendix E**)
- The tree bylaw information for both woodland and tree bylaws accessed from the Ontario Woodlot Association (OWA) website (see **Appendix F**)
- *The State of Urban Forest Policy and By-laws across Ontario Municipalities* (Yung 2018)
- The *Report on Tree Conservation By-Laws in Southern Ontario* (Fitzgibbon and Summers 2002), and
- *Examining Current Woodlands Conservation By-laws in Municipalities Located within the Carolinian Region of Southwestern Ontario* (Glasgow and FitzSimmons 2018).

As discussed further in **Section 4.3.2** there are already woodland and tree bylaws in effect in Peel that are working well to support the implementation of local urban forest objectives. Therefor, the primary purpose of this section is to provide guidance to the Region and local municipalities in Peel related to tree and woodland bylaws best practice direction in Ontario (a) for consideration when they update their existing bylaws, and (b) to help guide the development of new bylaws where gaps have been identified and where the municipality determines it is a priority to fill this gap.

4.3.1 Types of Tree and Woodland Bylaws in Ontario

Although no two tree bylaws are identical and some bylaws combine regulation on private and public lands, most bylaws focussing on trees fall into one of three categories:

1) "private woodland (or forest conservation) bylaws" that regulate the destruction or injury of trees in woodlands;
2) "private tree bylaws" that regulate the destruction or injury of individual trees on private lands; and
3) "municipal tree bylaws" that regulate tree removal or injury on municipally-owned or managed lands, including streets/boulevards, parks and open spaces, and natural areas.

1. PRIVATE WOODLAND BYLAWS

Under the *Municipal Act*, regional municipalities have jurisdiction over woodlands that are at least 1.0 ha. However, this act also stipulates that a local municipality can delegate authority for regulation of smaller woodlots[56] (e.g., between 0.2 and 1.0 ha) to the regional municipality, or *vice versa*. For example, in the Region of Halton many of the local municipalities have delegated regulation of woodlands of at least 0.5 ha to the Region. While in the Region of York many of the local municipalities have delegated regulation of woodlands of at least 0.2 ha to the Region.

In Peel Region, the authority for regulating woodlands has been delegated to the local municipalities and both the Town of Caledon and the City of Brampton have private woodland bylaws (see further discussion in **Section 4.3.2**).

"TREE" VERSUS "WOODLAND" BYLAWS

The Peel Region Urban Forest Strategy (2012) recognizes the fundamentally different approaches required for managing individual trees versus wooded natural areas. "For management purposes the urban forest can be grouped into two broad categories:

- **Intensively managed urban forest – where the unit of management is the individual trees and standard arboricultural practices are applied (i.e., street trees)**
- **Extensively managed forest – where the unit of management is the forest stand or vegetation community and landscape ecology or silvicultural practices are applied (i.e., woodlands and natural areas)".**

This distinction is reflected in the legislative framework for municipal tree bylaws (which defines woodlands separately from trees) and is recognized by most municipalities by developing distinct bylaws for regulating activities in woodlands versus regulating activities related to individual trees.

[56] The term "woodlands" as defined under the *Municipal Act* applies strictly to wooded areas of at least 1 ha meeting the density requirements as set out in the woodlands definition of the *Forestry Act*. Therefore, jurisdictions that have chosen to regulate smaller wooded areas meeting the density requirements as set out in the woodlands definition of the *Forestry Act* tend to refer to them as "woodlots".

Credit: City of Mississauga

Figure 4-11. A natural area in Mississauga protected as significant woodland

2. PRIVATE TREE BYLAWS

Within Ontario, most private tree bylaws are enacted by local or single-tier municipalities. The general intent of private tree bylaws is to regulate the removal of individual trees on private property meeting the specified scope or criteria in recognition of the environmental, aesthetic and/or heritage values that they provide in an urban or urbanizing setting. This type of bylaw generally focuses on regulation of mature or maturing trees, but the scope of these bylaws varies significantly among municipalities. Minimum size classes of trees regulated ranges from 7.5 cm dbh to 75 cm dbh, with most municipalities regulating trees of between 15 cm dbh and 30 cm dbh (OUFC 2012, **Appendix D**).

Within the Region of Peel, the City of Mississauga and the City of Brampton have private tree bylaws regulating trees of 15 cm dbh and 30 cm dbh respectively (see further discussion in **Section 4.3.2**).

Credits: City of Toronto

Figure 4-12. Mature trees on private lots in Toronto regulated under the City's tree bylaw

3. MUNICIPAL (OR PUBLIC) TREE BYLAWS

Municipal (sometimes called public) tree bylaws typically prohibit damage or destruction of trees on municipal lands and allow the municipality to issue a fine for contravention of the bylaw (which is typically applied to replacement tree establishment). These bylaws help protect the municipality's urban forest assets, show municipal commitment to its urban forest, and provide a mechanism for both education and enforcement when trees or treed areas are damaged or removed. Tree bylaws regulating the injury or destruction of trees on municipal lands tend to be much less controversial than their private counterparts and can be developed without as much consultation as they target activities on lands under municipal ownership.

In Peel, both Brampton and Mississauga have bylaws that protect trees in municipal boulevards and parks (see further discussion in **Section 4.3.2**).

4.3.2 Overview of Tree-Related Bylaws in Peel

There are a range of bylaws currently in effect in Peel that regulate activities related to tree injury and destruction (see **Table 4-4**).

Table 4-4. Summary of Current Tree-Related Bylaws in Effect in Peel

Type of Tree Bylaw	Region of Peel	Town of Caledon	City of Brampton	City of Mississauga
Private Woodland Bylaw	106-2005*	2000-100	316-2012	-
Private Tree Bylaw	-	-	317-2012	254-12
Municipal Boulevard Bylaw	-	-	163-2013	91-75
Municipal Parks Bylaw	-	2005-112	161-183	186-05
Municipal Natural Areas (a.k.a. Encroachment) Bylaw	-	-	-	54-07

* The Region of Peel's Bylaw 106-2005 delegates all power to pass bylaws respecting the destruction or injuring of trees in woodlands (1.0 ha or greater) within the jurisdictional boundaries of the City of Mississauga to the City.

Peel Region itself does not currently have any tree related bylaws except for bylaw 106-2005, which delegates[57] its power for woodland regulation to the local municipalities. Tree-related bylaws currently in effect in the local municipalities are summarized below:

- Caledon has a Woodland Conservation Bylaw (2000-100) that regulates activities in woodlands of at least 0.5 ha but no private tree bylaw.
- Caledon also has a parks bylaw (2005-112) that mentions trees as a structure not to be climbed but does not afford them any other type of protection.
- Brampton has a private woodland bylaw that regulates woodlots of at least 0.2 ha (316-2012) as well as a private tree bylaw (317-2012) that regulates trees of at least 30 cm dbh.
- Brampton also has a parks bylaw (161-83) that prohibits any person from climbing, removing or damaging a tree and a boulevard maintenance bylaw (163-2013) that prohibits the removal or damage of trees on any portion of a highway.
- Mississauga has a private tree bylaw (254-2012) that regulates trees of at least 15 cm dbh but allows for the removal of up to two trees per year without a permit.
- Mississauga also has bylaws that speak to trees in municipal boulevards, parks and natural areas:
    - Encroachment Bylaw (57-04) prohibits any type of encroachment on City lands, including City-owned natural areas
    - Parks Bylaw (186-05) prohibits damage to all parks property, including trees, and allows for compensation to be required, and
    - Highway Obstruction Bylaw (357-10) prohibits damage of trees on any portion of a highway.

[57] The Municipal Act sets a size threshold of 1.0 ha on woodlands that can be regulated by upper tier municipalities, therefore single or local municipalities that wish to regulate smaller wooded features (i.e., 0.2 or 0.5 ha), or delegate the authority for such features to the upper tier municipality, refer to these smaller woodlands as "woodlots" for clarity.

More detailed descriptions of the private woodland, private tree and municipal tree bylaws currently in effect in Peel Region are provided in **Appendix E**.

Based on the research completed and interviews with municipal planning and forestry staff from each of the jurisdictions in Peel (see **Appendix B**) a high-level gap assessment related to tree bylaws in Peel was completed. The findings of this assessment are as follows.

- PEEL: The Region does not own any woodlands but is responsible for the management of trees in regional ROWS and on municipal properties. Staff have noted incidences of encroachment where trees and vegetation in municipal ROWS and noise buffers have been damaged or removed, in some cases by nearby residents who may not know that the vegetation is on municipal lands or that it is intended to provide a naturalized buffer from adjacent land uses. In addition, there is particular interest in providing stronger protection for mature trees in Peel's ROWs in accordance with Peel's Climate Change Action Plan.
- CALEDON: The Town's private woodlands bylaw is actively implemented and enforced and is generally working well to regulate activities in wooded areas. There are no significant issues with the Town's bylaws protecting trees on municipal lands. However, there have been incidences of trees on private property not regulated by the woodland bylaw that have been cleared (legally) prior to a planning application being submitted.
- BRAMPTON: The City's current suite of bylaws regulating trees on public and private lands is working well in Brampton, although more sustained outreach and education regarding these bylaws would help support implementation.
- MISSISSAUGA: Although the City does not have a private woodlands bylaw, all woodlands meeting the criteria for significance of at least 0.5 ha are protected under the official plan policies. The City's private tree bylaw is generally working well, although in some neighbourhoods there have been cases where landowners use the exemption for removal of two trees per year without a permit to gradually remove all the large trees on their lot over a period of several years. Regulations protecting trees and vegetation on municipal lands are working well and enforcement of the encroachment bylaw has allowed the cumulative re-naturalization of several hectares of land.

Suggestions for how these findings could be addressed are provided in **Section 4.3.5**.

4.3.3 Best Practice Directions for Tree and Woodland Bylaws

It is difficult to identify specific best practices for tree and woodland bylaws in Ontario because:

- Although tree and woodland bylaws are all based on the same legislation and tend to some shared structural elements and components, no two bylaws are the same and each one is tailored to address local concerns or issues within a given biophysical and socio-economic context, and
- Although some tree bylaws have been in place in Ontario for more than two decades and some reviews have been undertaken (e.g., Fitzgibbon and Summers 2002; Yung 2018; Glasgow and FitzSimmons 2018), there have not been any systematic or comprehensive studies of the effectiveness of these bylaws in relation to specific objectives.

Therefore, there are no specific or established best practices with respect to tree or woodland bylaws. However, several best practice directions have been identified in this guide based on a synthesis of information gathered from reviews and interviews, recommendations from Forest Conservation Bylaw Committee and Lower Tier Tree Bylaw Advisory Group (2013), and the experience of the consulting team.

Any municipal bylaw developed based on the direction provided in this guide should also consider the local context and (as noted in the disclaimer to this guide) be reviewed by local legal counsel.

1. BEST PRACTICE: HAVE SEPARATE BYLAWS FOR TREES ON PUBLIC VERSUS PRIVATE LANDS

The majority of municipalities with tree and/or woodland and/or municipal tree bylaws have separate bylaws to regulate trees on private lands versus public lands. However, some municipalities have elected to regulation of trees on private and public lands into a single bylaw (e.g., Town of Ajax[58], City of Kingston[59]).

The Forest Conservation Bylaw Committee and Lower Tier Advisory Group (2013) recommend having separate bylaws to regulate trees on public versus private land as some aspects of the applicable legislation and process will vary. For example, municipalities may have a broader scope for regulation (e.g., all trees of any size rather than trees above a certain diameter) and more rigorous requirements for tree replacement on lands under their jurisdiction than on private lands. Separate bylaws allow municipalities to be clear about the requirements for tree protection, removal and replacement based on where the tree is located. Therefore, separate bylaws for trees on municipal lands versus private lands is a recommended best practice.

2. BEST PRACTICE: COMMUNICATE A CLEAR PURPOSE FOR THE BYLAW

Tree bylaws, particularly for regulation of activities on private lands, can be very contentious pieces of local legislation and are often strongly opposed by those who feel there is already too much regulation as it relates to the natural environment. It is therefore important to have a clear rationale for the bylaw (as well as political support for it as noted in point #12 below) and clearly communicate this purpose. Examples of clear bylaw purposes include helping to:

- Achieve an established strategic direction related to the environment
- Achieve established official plan direction related to trees and/or the urban forest (potentially including a canopy cover target)
- Heighten awareness about the value of trees in the community
- Promote good forestry and/or good arboricultural practices
- (for municipal tree bylaws) Regulate the protection, maintenance and removal of trees to sustain the municipality's natural assets and/or green infrastructure
- Regulate the protection, maintenance and removal of trees to support community health and well-being, and/or
- Regulate the protection, maintenance and removal of valued trees/woodlands to promote resilience in the face of climate change.

[58] Town of Ajax Tree Bylaw 137-2006: https://www.ajax.ca/Modules/bylaws/Bylaw/Details/37349ac2-6573-4f49-bba3-e762b8f67d2b

[59] City of Kingston Tree Bylaw and Permit: https://www.cityofkingston.ca/city-hall/bylaws/trees

The vision or purpose should clearly reflect the intent of the bylaw but also reflect powers that are within the jurisdiction of Council and within the limits of the *Municipal Act*.

3. BEST PRACTICE: DEFINE KEY TERMS IN ACCORDANCE WITH APPLICABLE LEGISLATION

Including key terms and clear definitions that are drawn from applicable legislation is critical to having a bylaw that is both readily understood and defensible. Key terms are discussed below.

The *Municipal Act* requires bylaws regarding trees in woodlands to define woodlands (see text box below) of at least 1.0 ha in accordance with the *Forestry Act* and have regard for good forestry practices (see text box below), therefore both of these terms should be defined in the bylaw as per the *Forestry Act*. It is further suggested as a best practice that in urban areas the woodlands definition be elaborated on by: (a) explicitly stating how the feature is to be delineated (e.g., by its ecological limit and not the property limit) and (b) including appropriate exclusions (e.g., such as hedgerows, managed plantations) to support and facilitate appropriate delineation of a wooded feature.

Some municipalities (e.g., York Region, Halton Region) have assumed responsibility for regulation of woodlands smaller than 1.0 ha. But because the *Municipal Act* defines "woodlands" as features that are at least 1.0 ha, these municipalities have defined regulated wooded areas meeting the required densities (as per the *Forestry Act*) but not the 1.0 ha size threshold as "woodlots" (i.e., between 0.2 ha or 0.5 ha and up to 1.0 ha). This approach is also recommended as a best practice.

KEY DEFINITIONS FROM THE *FORESTRY ACT*

Woodlands

(1) Means land with at least,

(a) 1,000 trees, of any size, per hectare,

(b) 750 trees, measuring over five centimetres in diameter, per hectare,

(c) 500 trees, measuring over 12 centimetres in diameter, per hectare, or

(d) 250 trees, measuring over 20 centimetres in diameter, per hectare,

but does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees.

(2) For the purpose of the definition of "woodlands", all measurements of the trees are to be taken at 1.37 metres from the ground.

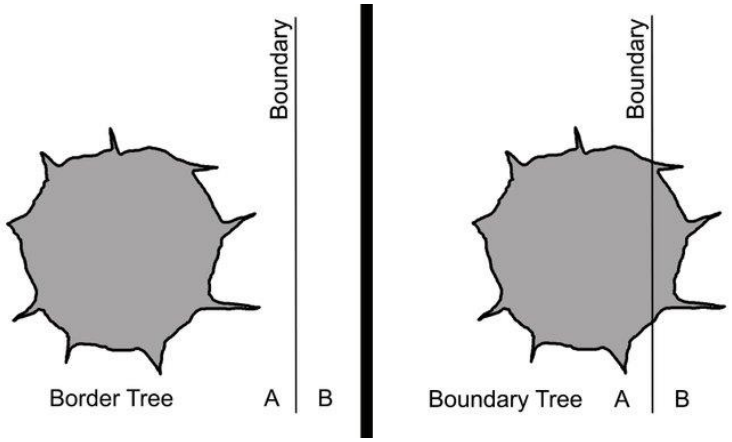
Good Forestry Practices

the proper implementation of harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values ...

Boundary Tree

Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands.

There have been several rulings related to boundary trees (see **Figure 4-13** below) in Ontario courts over the past few years confirming that trees whose trunks grow across private property lines are "shared" by both owners, and that neither owner can injure or destroy a shared tree without the consent of the other[60]. Therefore, the *Forestry Act* definition of boundary trees (see text box below) should be included in all tree bylaws, as should a process for enabling the destruction or injury of such a tree (e.g., a signed consent form from the adjacent landowner). Note this joint responsibility also applies where the tree is a hazard.



Credit: Tree Service Canada website

Figure 4-13. Illustration of the trunk from a "border tree" versus a "boundary tree"

"Normal Farm Practice" is a term that should also be defined with reference to the Normal Farm Practices Board as such practices may be exempt from the tree bylaw. However, this may require interpretation on a case-by-case basis before the Board where a claimed exemption is questioned by a municipality. See further detail in **Appendix F**.

The bylaw should also include a definition for tree. The standard definition used in many tree bylaws and other documents is "*any species of woody perennial plant which has reached or can reach a height of at least 4.5 metres at physiological maturity*". However, for the purpose of a tree or woodland bylaw recommended additions to this definition include "*including its root system*" (Forest Conservation Bylaw Committee and Lower Tier Advisory Group 2013). In addition, there should be direction for how to measure (for tree bylaws) or count (for woodland bylaws) multi-stemmed trees in the definition or elsewhere in the bylaw. There may also be consideration for excluding trees below a specified dimeter for the purposes of the bylaw (as per the region of Halton's bylaw 121-05).

The terms "injure" and "destroy" are also used in the *Municipal Act* to regulate activities that may impact trees but are not defined. It is recommended that they remain undefined in tree bylaws because, as noted by the Forest Conservation Bylaw Committee and Lower Tier Advisory Group (2013), "*defining these terms may limit the enforceability of parts of the bylaw*" if actions not specified in the definitions result in damage or death of trees.

In summary, the terms "injure" and "destroy" should be used in tree and woodland bylaws but not defined, while definitions of the following terms should be included (with sources referenced in the bylaw for clarity):

[60] Recent rulings on Boundary Trees: https://boundarytrees.com/the-2013-ruling-on-boundary-trees/

- "good forestry practice" and "boundary tree" from the *Forestry Act*
- "woodland" from the *Forestry Act* for wooded natural areas regulated that are at least 1.0 ha
- "woodlot" for wooded natural areas regulated that are between 0.2 and 0.99 ha
- "normal farm practice" as recognized by the Normal Farm Practices Board, and
- "tree" (see discussion above).

All of the terms and definitions in the templates attached (**Appendix F**) should also be considered, as should defining the term "hazard" for bylaws where hazard trees are exempt from the permitting process.

An additional consideration is that defined terms should not conflict with comparable terms defined in official plans and other municipal guiding documents for consistency. For example, both the Region of Peel and the City of Mississauga exclude treed communities dominated by buckthorn, Norway maples or others "deemed to be highly invasive" from qualifying as core woodlands or significant woodlands (see Region of Peel Official Plan policy 2.3.2.21). Some municipal tree bylaws exclude specified invasive trees and shrubs from regulation as well (e.g., City of Guelph).

4. BEST PRACTICE: TAILOR THE BYLAW TO THE MUNICIPAL CONTEXT

As noted in above, there is tremendous variability in the scope of bylaws for private trees, private woodlands and municipal trees, and no established best practice in this regard. Based on the research undertaken for this guide, in general it can be said that in urban areas in Ontario:

- Most private woodland bylaws regulate features of at least 1.0 ha with some bylaws regulating features of at least 0.5 ha or 0.2 ha
- Most private tree bylaws regulate trees with diameters between 15 and 30 cm dbh, and
- Most municipal tree bylaws regulate trees of any size on specified municipal lands (e.g., boulevards and/or parks and/or natural areas).

In some cases, rather than regulating trees of a specified diameter or minimum sized woodlands (as defined based on stem density), municipalities have elected to regulate trees of all sizes on specified types of lots or lands. For example:

- Town of Ajax Bylaw 137-2006 regulates all trees in municipally owned rural area, in the Duffins Creek corridor on the west side of Town, Environmental Protection Areas, Open Space (including private lands) and Town Parks except for Parkettes
- The City of Kitchener Bylaw Ch. 692 regulates all trees of at least 10 cm dbh on private lots of at least 0.405 ha, and
- The City of Ottawa (Bylaw 20019-210) in addition to regulating trees on private lands in the urban area that are greater than 50 cm dbh on lots smaller than 1 ha also regulates all trees on lots greater than 1 ha.

Irrespective of the application of the bylaw, a best practice principle remains that a more restrictive bylaw is not necessarily a "better" bylaw because ultimately a bylaw is only an effective tool if it is implemented with (a) enough outreach and education so that most people in the

community are aware of the bylaw, and (b) adequate resources to implement the bylaw and, when deemed appropriate and necessary, enforce it.

Having more stringent prohibition scan be easier to implement and enforce through municipal tree bylaws. Some examples of such prohibitions targeting tree protection on municipal lands are provided below (see **Appendix D** for details).

- The Town of Ajax specifies that no new construction or excavation shall occur within a 2 m radius of a tree with a dbh less than 40 cm and a 3 metre radius of a tree with a dbh greater than 40 cm.
- The City of Ottawa's municipal tree bylaw states that trees in hard surface areas must be planted as per the City's Hard Surface Tree Well Design Standards.
- The Town of Whitby specifies that a person may not affix any advertisement, bill or paper to any tree, while the City of Mississauga specifies that a person may not damage or deface a tree within a park, and the City of Waterloo does not allow a person working for or on behalf of a public utility to remove, prune, injure, or place anything on any municipal trees.

Once a decision to pursue a tree or woodland bylaw has been made, ultimately the scope of such a bylaw should be determined with careful consideration for: (a) the issues that the bylaw is intended to address, (b) the scope and nature of the municipality's treed assets, and (c) the resources being made available for outreach, implementation and enforcement.

Although outreach and education are critical to bylaw effectiveness, where a new bylaw is being considered an authority may choose to enact it prior to public consultation to reduce the risk of trees being removed preemptively by some landowners in anticipation of the bylaw being enabled.

5. BEST PRACTICE: SELECT EXEMPTIONS THAT LIMIT BUREAUCRACY

There are eight exemptions legislated under the *Municipal Act* (Section 135(12))[61] where the requirements of a tree or woodland bylaw would not apply including: activities undertaken by a municipality, activities undertaken by a licensed surveyor or for maintaining a distribution system as per the *Electricity Act*, trees injured or destroyed as a condition of approval or development under the *Planning Act*, and trees injured or destroyed as part of an approved pit or quarry development or expansion. Although these do not need to be included in a private tree or woodland bylaw, it is recommended that they are included *verbatim* from the *Municipal Act* for completeness and clarity.

Many municipalities also choose to include some additional exemptions. In general, the intent of these exemptions is to (a) provide allowances for circumstances or activities for which a permit would never be denied and thereby limit unnecessary bureaucracy, and/or (b) strike an appropriate balance between regulation and private property rights. Such exemptions are generally considered best practices because they support the effective implementation of the bylaw and allow the municipality to focus its resources on permit applications where there may be a need for further discussion with the applicant, or that may be denied.

[61] Ontario Municipal Act - https://www.ontario.ca/laws/statute/01m25#BK156

For example, most private woodland bylaws allow some tree removals without a permit for the use of the landowner. Examples include the Town of Caledon (see **Appendix E**), Region of Halton and York Region (see **Appendix D**).

Other common exemptions in woodland bylaws include trees removed in accordance with an approved forest management plan and trees removed where a building permit has been issued[62]. Additionally, the Region of York exempts the removal of trees to maintain or build a property fence. Tree injury and destruction resulting from "normal farm practices" are also sometimes explicitly exempt in woodland bylaws as are activities that have been authorized under the *Drainage Act*. However, there are cases, particularly in urban areas, where the latter two exemptions have been abused and therefore, they are not suggested as best practice exemptions.

Common exemptions (see **Appendix D**, OUFC 2012) in for safety and/or practical reasons from bylaws in urban and urbanizing areas in Ontario are listed below.

For private tree bylaws:

- Removals approved under private woodland bylaw applicable in the municipality
- Pruning in accordance with "good arboricultural practices" (which notably, unlike good forestry practices, does not have a legal or even a generally accepted definition in Ontario)
- Trees growing within or on buildings (including rooftops, interior courtyards, solariums, patios and green roofs)
- Trees that are imminent hazards or that need to be removed as part of emergency work
- Trees needing to be removed to mitigate contaminated soils (e.g., City of London)
- Trees in golf courses and cemeteries managed under an approved tree management plan
- Trees in actively managed orchards, nurseries or plantations
- Trees within residential lots below a specified size (e.g., 0.405 ha in the City of Kitchener, 1.2 ha in the Town of Ajax)
- Trees that are relatively close to a building (e.g., in the City of Brampton and City of Burlington's pilot private tree bylaw "close" is 2 m, whereas in the City of Kitchener it is 5 m, in the City of Cambridge it is 10 m and in the City of Kingston it is 15 m), and
- The first few trees removed every calendar year (e.g., up to two trees above 15 cm dbh in Mississauga; up to two trees between 20 and 70 cm dbh in Aurora).

For private woodland bylaws:

- Removals in accordance with "good forestry practices"
- Trees that are imminent hazards or that need to be removed as part of emergency work (e.g., clean up of damage related to ice storms or wind storms)
- Trees in golf courses and cemeteries managed under an approved tree management plan

[62] As noted in Section 4.2.3, because the *Building Act* regulations supersede the *Municipal Act* regulations in Ontario, once works are approved under the *Building Act* a municipal tree bylaw is no longer applicable law. This can result in some unregulated tree removals that might not have otherwise been approved and is an issue that needs to be addressed at the provincial level.

- Trees in actively managed orchards, nurseries or plantations, and
- Removals (within set limits) for personal use.

For municipal tree and natural areas bylaws:

- Permission to injure or damage a tree on public property if given written permission from the municipality, in some cases with conditions such as the planting of replacement trees, and
- Permission to use the municipal natural areas to undertake activities such as maintenance.

There are also municipalities that regulate trees of at least 20 or 30 cm dbh and provide very few exceptions or exemptions beyond those required through the *Municipal Act*. These include the City of Toronto, Town of Markham, Town of Richmond Hill and City of Vaughan.

As with bylaw scope, tree and woodland bylaw exemptions should be tailored to the municipal context with careful consideration for: (a) the issues that the bylaw is intended to address, (b) the scope and nature of the municipality's treed assets, and (c) the resources being made available for outreach, implementation and enforcement. See **Appendix F** for more examples.

6. BEST PRACTICE: CONSIDER OTHER APPLICABLE LEGISLATION IN PROHIBITIONS

Most bylaws have a "general prohibitions" section that provides the legal basis for any offences under the bylaw in terms of contravening (a) the application of the bylaw, (b) the terms of a permit issued under the bylaw or (c) an order issued under the bylaw.

As tree and woodland bylaws must also be consistent with other applicable legislation such as the MBCA, *Endangered Species Act* (**Section 2.1.1**) and the federal *Species at Risk Act* (**Section 3.1.1**), a municipality may consider a general statement regarding the need for such compliance or refer specifically to these two acts as potentially being a basis for refusing a permit.

7. BEST PRACTICE: BALANCE COST RECOVERY WITH INCENTIVES FOR COMPLIANCE

The anticipated costs of a new bylaw to a municipality is an important practical consideration. Every municipality is different in terms of its internal organizational structure and staffing, population, and resources required will also vary depending on the nature and extent of local treed resources and the scope of the proposed or existing bylaw(s). In general, the administration and enforcement of a tree bylaw requires, at the very least:

- One or more arborists with good communication skills who may also be a trained bylaw
- An officer to review and deal with calls/inquiries, permit applications and follow-up
- Outreach and communications support to "advertise" the bylaw, and
- Adequate administrative support to track, process and manage the permits.

Although the *Municipal Act* provides legal support for full cost recovery of by law administration through tree bylaw permit fees, few municipalities base their permit fees on the expectation of cost recovery. General costs of obtaining a tree removal permit under woodland bylaws reviewed ranges from about $50 to $500. For individual tree bylaws the permit fees of bylaws reviewed (**Appendix D**) also ranged between about $50 and $750, in some cases higher

depending on the numbers of trees being proposed for removal. The Town of Oakville and City of Markham have some of highest permit fees at up to $2500 and $5000 respectively while the City of Peterborough waives the fee for dead, dying or hazardous trees.

Some suggested best practices for tree and woodland permit fees include the following.

- Keeping the fees as a separate schedule as part of a separate fees bylaw outside of the tree or woodland bylaw itself so that fees can be amended or updated without re-opening the bylaw.
- Allowing for some cost recovery but keeping the fees reasonable enough to encourage compliance.
- Consider charging lower fees or waiving fees to encourage compliance in cases where, for example:
    - Low income residents are required to obtain a permit; or
    - Approved removals are for confirmed hazard trees, including trees such as ash impacted by emerald ash borer, where the landowner must already pay for the removal.

8. BEST PRACTICE: INCLUDE PERMIT CONDITIONS THAT SUPPORT BYLAW OBJECTIVES

Most tree and woodland bylaws include a section that speaks to the permitting process, including a list of potential terms and conditions that might be imposed through a permit.

Private woodland by-laws have, in the past, generally provided two options for harvesting: (a) diameter limit cutting where only trees of certain species above certain set trunk diameters could be cut[63], and (b) according to good forestry practices, which is an ecologically-based approach of selective cutting or thinning that generally encourages natural regeneration (see definition above). However, particularly in urban and urbanizing jurisdictions, current best practice is to enact private woodland bylaws that only allow harvesting according to good forestry practices (e.g., City of Peterborough, City of Kingston) as diameter cutting is no longer accepted as a best practice or even a good practice if the objective is to sustain the feature for the long term (Region of Halton Forester, pers. comm. Aug. 23, 2019). According to Yung's review (2018), 66.7% (20 of 30) of the regional private woodland bylaws reviewed promote good forestry practices exclusively. In these cases, a typical permit condition would be required for removals undertaken in accordance with good forestry practices.

There are many options for permit conditions for both woodland and tree bylaws (see **Appendix F**), and all options are typically not specific in the bylaw. However, it can be helpful to have some guidance as to the scope and nature of potential conditions in the bylaw itself. Some examples for individual tree bylaws are provided below.

- Permit conditions that support enhancement or target a net gain for the urban forest such as:
    - Requirements for proper protection of trees on site to be retained
    - Requirements about the timing of tree removal (e.g., to avoid breeding bird season)

[63] Note this method of cutting usually results in reduced genetic diversity, lower stand productivity, and narrow species composition since smaller trees could be slow growing or genetically inferior (The Forest Conservation Bylaw Committee and Lower Tier Advisory Group 2013).

    - Sign-off by a Certified Arborist on the condition tree(s) to be removed if being considered dead and/or a hazard, and
    - Requirements for compensation for trees to be removed (see more discussion in **Section 4.2**) including tree establishment requirements.
- Requiring a letter of credit equivalent to the cost of replacing and maintaining trees planted to ensure that the proponent establishes and maintains the trees as required, as well as letters of credit to ensure the trees are protected as specified.

Other best practices for both woodland and tree bylaws include requiring the involvement of qualified professionals (e.g., Ontario Professional Foresters Association members for management of woodlands/forests and Certified Arborists for individual tree management) for larger scale removals and replacement plans.

9. BEST PRACTICE: INCLUDE AN APPEALS PROCESS

Although as noted by the Forest Conservation Bylaw Committee and Lower Tier Advisory Group (2013), there is no requirement to provide an appeal process under the *Municipal Act*, the public can always take issues to Council and so it is recommended that a defined process for appeals (that complies with the *Statutory Powers Procedure Act*) is developed and included in the bylaw. **Appendix F** includes a suggested process.

10. BEST PRACTICE: CREATE A BYLAW THAT CAN BE ENFORCED

Most of the guidance provided in this section is intended to support the development of a tree or woodland bylaw that is both defensible and enforceable, but two specific strategies recommended by the Forest Conservation Bylaw Committee and Lower Tier Advisory Group (2013) include:

- Clearly identifying who in the municipality has the authority to administer the bylaw (e.g., a Director)
- Keeping penalties consistent with *Municipal Act*, and
- In terms of process, ensuring bylaw enforcement offices are appropriately trained and qualified (e.g., appointed as Provincial Offences Officers) and have access to qualified Foresters or Arborists able to assist in enforcing the bylaw when needed.

Although the *Municipal Act* may provide the flexibility for municipalities to develop their own penalties, the Forest Conservation Bylaw Committee and Lower Tier Advisory Group (2013) also recommend consistency with the *Municipal Act* to help ensure enforceability. The penalties established under the Act are thought to provide a sufficient deterrent for most cases (i.e., a minimum fine of $500 and a maximum fine of $100,000 for a first offence with options to impose additional fines for continued offences of up to $10,000 per day or a special fine "where there is an economic advantage or gain from the contravention" of the bylaw) (see examples in **Appendix F**).

11. BEST PRACTICE: AVOID SCHEDULES TO THE BYLAW

A suggestion to facilitate management of and updates to the bylaw that no schedules (e.g., application forms, permits, orders) be included in the bylaw itself. Keeping these items separate allows for updates to be made to these administrative components without updating the entire bylaw and getting Council approval.

12. BEST PRACTICE: ENSURE THERE IS ADEQUATE POLITICAL SUPPORT

Tree bylaws regulating activities on private lands tend to be very polarizing issues with some very supportive of a regulatory support and others strongly opposed to regulation on private lands. Having adequate support in the community and a high level of support among municipal decision-makers, including the commitment of Council, is therefore critical for the successful implementation of such a bylaw. If there is adequate political support, depending on the local context, where a new bylaw is being considered an authority may choose to enact it prior to public consultation to reduce the risk of trees being removed pre-emptively by some landowners in anticipation of the bylaw being enabled. It can be amended afterwards if needed.

13. BEST PRACTICE: ENSURE THERE ARE RESOURCES TO SUPPORT IMPLEMENTATION

One of the most consistently identified best practices in the research undertaken for this guide is to ensure that a bylaw, whatever its scope, is not developed or passed without resources in place to implement, administer and enforce it. This should include a commitment by the municipality to:

- Having sustained education and outreach (as per point #14 below)
- Maintaining appropriately trained bylaw officers that understand arboriculture/forestry, know how to conduct a thorough investigation and gather evidence
- Having the tools and staff to administer the bylaw, and
- Providing the resources to prosecute when deemed appropriate to demonstrate the municipal will to enforce when needed.

14. BEST PRACTICE: IMPLEMENT ONGOING OUTREACH AND EDUCATION

To be effective, municipalities should also be committed to education of landowners, developers, and the general public as well as internal staff regarding their tree or woodland bylaw(s). Research (Fitzgibbon and Summers 2002) and interviews on this topic have found the following.

- It is not uncommon to get bylaw infractions (due to ignorance of the bylaw or outright negligence), but once the owner is informed about the bylaw and sees it is being enforced they typically comply.
- Education about how the bylaw works and the fact that the municipality is enforcing it is the most effective approach (i.e., the best enforcement is to have an officer in the field who can educate, make on-site decisions and negotiate).
- In addition to educating landowners, it is important to educate the consultants/tree companies the municipality deals with on how to fulfill the requirements of the bylaw and ensure that municipal staff are also aware and on board with the process.
- Site visits are typically required prior to permit application to confirm boundaries, issues, etc. which provides a unique opportunity for increasing awareness, and sometimes even exploring alternatives to the proposed tree removal.

Bylaw officers and municipal urban foresters tend to agree that tree and woodland bylaws are most effective when they are clearly laid out, well-advertised and used to educate landowners, rather than penalize them. Specific elements of an outreach program could include having the following.

- Clear information that is available to the community and can be readily understood by landowners as well as elected officials and forestry/arboricultural professionals.
- Sustained outreach about the bylaw from year to year (e.g., an annual public workshop or meeting, advertisements in local papers and community guides, plain language information on the municipality's website, door knockers in selected neighbourhoods where infractions or encroachments have been noted, presentations to landowner groups).
- Municipal staff well-versed in the bylaw purpose, scope and process able to assist landowners and hired professionals.

4.3.4 Support for Tree Bylaw Development and Implementation in Ontario

The Forest Conservation By-law Committee is an independent group of municipal and provincial staff as well as other interested agencies that meet informally to: provide a forum for discussion, information exchange and input into private woodland bylaws; encourage training opportunities and improve competency among woodland bylaw officers, and encourage more effective and consistent application of woodland bylaws in Ontario.

The Forest Conservation By-law Committee hosts an annual meeting for all woodland/forest conservation by-law officers in Ontario to exchange information. The annual meeting is open to any municipal staff interested in tree or woodland bylaws. Since the early 2000's, significant progress has been made through this committee in providing support for improving the consistency and successful prosecutions of private woodland bylaws with the bylaw templates development, information exchange and annual meetings. As such, municipalities have improved the success of enforcing these bylaws with "ticketable" fines and successful prosecutions.

The Lower Tier Tree Bylaw Advisory Group is also an independent group of municipal staff that focus on individual tree bylaws for private lands typically enacted by local municipalities. Established in 2010, this group meets via conference call to discuss current issues and encourages more effective and consistent application of tree bylaws.

These groups have both collaborated to develop three useful resources for municipalities in Ontario that were last updated in January 2013 looking to develop or update their private tree bylaws:

- A tree bylaw information package
- A template for a private forest conservation (a.k.a. woodland) bylaw using good forestry practices[64], and
- A template for a private tree bylaw.

Despite being over five years old, these resources still include useful information and guidance that remains applicable, although some minor elements require updating (e.g., MECP now regulates the *Endangered Species Act*, not MNRF). These resources are available on-line on the

[64] The OWA website also includes a template for a forest conservation (a.k.a. woodland) bylaw that uses both good forestry practices and circumference limit cutting, but because this approach is not considered a best practice in the context of long-term urban forest management and sustainability, it has not been included in this guide.

Ontario Woodlot Association's (OWA) website[65] and the templates have been included with links in **Appendix A** and appended to this guide (**Appendix F**) for ease of reference. As noted in the templates and in the disclaimer to this guide, any tree bylaws or actions based on the guidance provided in this guide should only be undertaken after consultation with legal counsel.

OPPORTUNITY: Pursue Support for Tree Bylaw Development and Implementation

The Region and local municipalities should encourage the appropriate staff to engage with the Forest Conservation By-law Committee and/or Lower Tier Tree Bylaw Advisory Group and consider the available tree bylaw resources developed by these groups (see Appendix F) when developing or updating their local private tree bylaws.

4.3.5 Summary of Best Practices and Opportunities Related to Tree and Woodland Bylaws

A summary of best practices and opportunities for urban forest planning related to tree and woodland bylaws in urban jurisdictions in Ontario is provided in **Table 4-5**. Discussion and examples are included in each of the respective sub-sections, as cited in the table.

Table 4-5. Summary of Best Practices and Opportunities Related to Tree and Woodland Bylaws in Peel and Ontario

Big Picture Direction (Guide Section)	**Opportunity, Best Practice or Recommendation Related to Tree and Woodland Bylaws in Ontario**
Opportunities to Fill Tree Bylaw Gaps in Peel (Section 4.3.2)	• The Region of Peel should develop a municipal tree bylaw that regulates the injury and destruction of vegetation on municipal ROWs and municipal properties. • The Town of Caledon could develop a private tree by law focussed on preventing pre-emptive clearing on larger properties to be developed. • The City of Mississauga could consider revising its private tree bylaw to remove the exemption for removal of up to two trees per year without a permit.
Tree and Woodland Bylaw Development (Section 4.3.3)	1. Have separate bylaws for trees on public versus private lands. 2. Communicate a clear purpose for the bylaw. 3. Define key terms in accordance with applicable legislation (e.g., "woodland", "good forestry practice" and "boundary tree"). 4. Tailor the bylaw to the municipal context. 5. Select exemptions that limit bureaucracy. 6. Consider other applicable legislation in prohibitions. 7. Balance cost recovery with incentives for compliance. 8. Include permit conditions that support bylaw objectives.

[65] https://www.ontariowoodlot.com/forest-management/legislation/developing-forest-conservation-by-laws?highlight=WyJ0cmVlIiwidHJlZSdzIiwiYnktbGF3IiwidHJlZSBieS1sYXciXQ==

Big Picture Direction (Guide Section)	Opportunity, Best Practice or Recommendation Related to Tree and Woodland Bylaws in Ontario
	9. Include an appeals process. 10. Create a bylaw that can be enforced. 11. Avoid schedules to the bylaw. 12. Ensure there is adequate political support. 13. Ensure there are resources to support implementation. 14. Implement ongoing outreach and education.
Pursue Support for Tree Bylaw Development and Implementation (Section 4.3.4)	The Region and local municipalities should encourage the appropriate staff to engage with the Forest Conservation By-law Committee and/or Lower Tier Tree Bylaw Advisory Group and consider the available tree bylaw resources developed by these groups when developing or updating their local private tree bylaws.

5. Concluding Remarks

Peel's population was just under 1.5 million in 2018 and is projected to grow to close to 2 million by 2041. This growth provides many opportunities for smart and sustainable community building. However, if this growth is not planned or managed with the urban forest in mind, it may result in communities depauperate in trees, natural areas and other "green" open spaces.

Trees and natural areas are increasingly recognized for the wide range of tangible benefits and services they provide to urban areas, and for their ability to support human health. Trees are also being increasingly recognized as assets that can help communities mitigate and adapt to climate change. However, growth pressures and competition for increasingly limited space, combined with present and emerging threats of forest pests and environmental stressors associated with urban environments and climate change make maintaining and enhancing the urban forest challenging. Addressing these challenges will require planning, active and adaptive management, ongoing monitoring and collaborative problem solving that recognizes that trees are diverse and resilient but also, ultimately, biological organisms with certain requirements to survive and thrive.

This guide provides a comprehensive overview of ways in which existing legislation and policies can be leveraged at the federal, provincial and municipal levels to help advance municipal urban forest planning. It also identifies several high-level planning approaches and tools considered critical to supporting good urban forest planning in Peel, and elsewhere. Based on the research undertaken for this guide, the municipalities that appear to be having the most success in moving urban forest objectives forward are those that have (a) urban forest goals embedded in all levels of planning, (b) a range of complementary planning tools related to the urban forest, and (c) broad support for and buy-in to established urban forest goals.

- Having urban forest planning tools, like those described in this guide, at all levels that complement each other and work together appears to be key. For example, having strong policies at the Official and Secondary Plan levels (**Section 4.1**) supported by zoning and /or Site Plan Controls (**Section 4.2**), as well as woodland and tree bylaws (**Section 4.3**) that are consistent with and linked to site-specific guidelines and manuals providing specifics related to tree protection and establishment techniques in accordance with best practices.

- In addition, for various urban forest policies and legislation to be implemented across a municipality consistently, all levels of staff in various departments must have a common understanding of the vision for the urban forest and of how the tools work together at different planning levels and in different contexts to achieve the desired goals.

It is hoped that the municipalities in Peel, and potentially elsewhere in Ontario, will draw and or build on the range of best practice planning tools and opportunities identified in this guide to help ensure a sustainable urban forest in a context of climate change.

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Appendices

PEEL REGION URBAN FOREST BEST PRACTICE GUIDE 1

Best Practices Guide for Urban Forest Planning in Peel

Appendix A

Key Urban Forest Planning On-line Resources

Appendix A

Key Urban Forest Planning On-line Resources

The following on-line resources were selected based on their specific and direct relevance to urban forest planning best practices in Peel. The links listed below were accessed between August 2019 and December 2020. Links to other resources cited in Guide 1 are provided as footnotes and/or in the references (Section 6).

Federal and Provincial Funding and Resources for Urban Forestry in Peel

Federation of Canadian Municipalities (Federally funded)

- Green Municipal Fund https://fcm.ca/en/programs/green-municipal-fund
- Municipal Asset Management Program https://fcm.ca/en/programs/municipal-asset-management-program

Forests Ontario 50 Million Trees Program (Federally funded)
https://www.forestsontario.ca/planting/programs/50-million-tree-program/

Government of Ontario - Managed Forest Tax Incentive Program
https://www.ontario.ca/page/managed-forest-tax-incentive-program

Government of Ontario - Species at Risk Stewardship Program
https://www.ontario.ca/page/grants-protecting-species-risk

Tree Canada – grants for urban forest activities

- https://treecanada.ca/greening-communities/
- https://treecanada.ca/operationreleaf/
- https://treecanada.ca/plant-with-us/apply-for-a-grant/

Tree Canada – urban forest resources including information about trees in Canada and their pests / diseases, a list of the benefits of trees, a tree planting guide and a carbon calculator
https://treecanada.ca/resources/

Tree Canada – Compendium of Best Urban Forest Management Practices
https://treecanada.ca/resources/canadian-urban-forest-compendium/

Ontario Urban Forest Council (OUFC) – on-line information, networking and advocacy
https://www.oufc.org/

Federal and Provincial Strategies and Guidelines That Support Urban Forestry

Canadian Urban Forest Strategy 2019-2024
https://treecanada.ca/wp-content/uploads/2018/10/TC-CUFS-2019-2024-Eng-1.pdf

Ontario's Biodiversity Strategy (2011)
http://ontariobiodiversitycouncil.ca/ontarios-strategy/

Species at Risk Guides and Resources
https://www.ontario.ca/page/species-risk-guides-and-resources

Private Woodland and Tree Bylaw Templates and Best Practice Examples in Ontario

Ontario Woodlot Association Tree By-law Information Package and Templates
https://www.ontariowoodlot.com/forest-management/legislation/developing-forest-conservation-by-laws?highlight=WyJ0cmVlIiwidHJlZSdzIiwiYnktbGF3IiwidHJlZSBieS1sYXciXQ==

Best Practice Examples of Municipal Private Tree Bylaws

- City of Guelph
  https://guelph.ca/living/environment/trees/tree-by-law/
- City of Kitchener
  https://www.kitchener.ca/en/building-and-development/tree-conservation.aspx#Tree-conservation-permits
- City of Ottawa
  https://ottawa.ca/en/residents/water-and-environment/trees-and-community-forests/tree-protection#urban-tree-conservation-law
- City of Peterborough
  https://www.peterborough.ca/en/city-services/trees.aspx
- City of Toronto
  https://www.toronto.ca/legdocs/municode/1184_813.pdf
- Town of Ajax
  https://www.ajax.ca/en/get-involved/trees.aspx#Tree-By-Laws
- Town of Oakville
  https://www.oakville.ca/residents/private-tree-protection.html
- Town of Richmond Hill
  https://www.richmondhill.ca/en/find-or-learn-about/Tree-Preservation.aspx

Examples of Comprehensive Municipal Urban Forest Management Plans in Ontario and British Columbia

Town of Oakville Urban Forest Strategic Management Plan (2008 – 2027)
https://www.oakville.ca/assets/general%20-%20residents/2008UFSMP.pdf

North Oakville Urban Forest Strategic Management Plan, 2012
https://www.oakville.ca/assets/general%20-%20residents/NOUFSMP14Sept2012.pdf
City of Burlington Urban Forest Management Plan (2011 - 2030)
https://www.burlington.ca/en/services-for-you/resources/Forestry%20Operations/Urban_Forestry_Master_Plan.pdf

City of Kingston's Urban Forest Management Plan, 2011
file:///C:/Users/Margot/Desktop/peel/Background%20-%20UFMPs+CanopyCoverAssessments/KingstonUFMP.pdf

City of Toronto Strategic Forest Management Plan (2012 - 2022)
https://www.toronto.ca/city-government/accountability-operations-customer-service/long-term-vision-plans-and-strategies/strategic-forest-management-plan/

City of Guelph Urban Forest Management Plan (2013 - 2032)
https://guelph.ca/plans-and-strategies/urban-forest-management-plan/

City of Mississauga Urban Forest Management Plan (2014 - 2033)
http://www7.mississauga.ca/Departments/Rec/parks/nhufs/pdf/FINAL_ufmp.pdf

City of London Urban Forest Strategy, 2014
https://www.london.ca/residents/Environment/Trees-Forests/Documents/London%20Urban%20Forestry%20Strategy%20Final.pdf

City of Cambridge Urban Forest Plan (2015 – 2034)
https://www.cambridge.ca/en/learn-about/resources/Accessible-PDFs/Cambridge-Urban-Forest-Plan-2015-2034.pdf

York Region Forest Management Plan (2016)
https://www.york.ca/wps/wcm/connect/yorkpublic/7f45a2ba-d838-4ad0-adc3-3e0f594c93af/nov+3+forest+ex.pdf?MOD=AJPERES

City of Ottawa Urban Forest Management Plan (2018 - 2037)
https://documents.ottawa.ca/sites/documents/files/final_ufmp_en.pdf

City of Vancouver Urban Forest Strategy, 2018 Update
https://vancouver.ca/files/cov/urban-forest-strategy.pdf

Examples and Resources for Natural Asset Management Planning and Urban Forestry

Credit Valley Conservation (CVC) Natural Asset Management Tools and Research

- Municipal Natural Assets Initiative: Region of Peel Pilot – Focus on Stormwater Management Services (2018) https://mnai.ca/media/2018/07/MNAI_Peel-final.pdf
- Business Case for Natural Assets in the Region of Peel: Benefits to Municipalities and Local Communities (2020)
  https://cvc.ca/
- Life Cycle Costing of Restoration and Environmental Management Actions: Costing Natural Assets in Peel Region (2020)
  https://cvc.ca/

Green Infrastructure Ontario advocacy for including urban forests in municipal asset management:
https://greeninfrastructureontario.org/green-infrastructure-new-provincial-asset-management-planning-regulation/

Municipal Corporate Asset Management Plans that include the urban forest:

- Region of York, Ontario – 2018 Corporate Asset Management Plan: https://www.york.ca/wps/wcm/connect/yorkpublic/2547467d-711b-482e-8602-0456b02bc96a/may+3+corporate+ex.pdf?MOD=AJPERES
- Region of York, Ontario – 2017 Green Infrastructure Asset Management: https://cnam.ca/wp-content/uploads/2018/07/22A.pdf
- City of London, Ontario – 2019 Corporate Asset Management Plan: https://www.london.ca/city-hall/master-plans-reports/reports/Pages/Corporate-Asset-Management-Plan-2014.aspx
- Town of Richmond Hill, Ontario – 2016 Asset Management Plan: https://www.richmondhill.ca/en/find-or-learn-about/asset-management-plan.aspx
- New York City Green Infrastructure Plan: http://www.nyc.gov/html/dep/pdf/green_infrastructure/NYCGreenInfrastructurePlan_ExecutiveSummary.pdf

Federation of Canadian Municipalities (FCM) asset management on-line resources and training: https://fcm.ca

Government of Ontario: Building together – Guide for municipal asset management plans https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans

Green or Sustainable Development Standards and Tools

City of Toronto Green Standards
https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/

City of Brampton Sustainability Assessment Tool
http://www.brampton.ca/EN/BUSINESS/PLANNING-DEVELOPMENT/LAND-DEVELOPMENT-APPLICATION/Pages/Welcome.aspx

Town of Oakville Canopy Cover Plan and Calculation Chart
https://www.oakville.ca/assets/2011%20planning/CanopyCoverPlan.pdf

City of Burlington Sustainable Building and Development Guidelines (April 2017, DRAFT)
https://www.burlington.ca/en/your-city/resources/Grow-Bold/New_Official_Plan/Sustainable-Building-and-Development-Guidelines---April-2017.pdf

Best Practice Examples of Municipal Tree Planting Programs

City of Toronto Tree Planting Strategy
https://www.toronto.ca/business-economy/partnerships-sponsorships-donations/partner-2/parks-environment/tree-planting-strategy/

Peel Tree Planting Prioritization Tool (contact the Region for more information)
https://www.iclr.org/wp-content/uploads/PDFS/17_Peel_Region.pdf
http://www.latornell.ca/wp-content/uploads/files/presentations/2014/Latornell_2014_T2E_Janet_Wong.pdf

Selected Examples of Tree Technical Manuals

Tree Canada - Chapter 13. Tree Protection during Construction/Trees and Building Foundations (links to examples and resources)
https://treecanada.ca/resources/canadian-urban-forest-compendium/13-tree-protection-during-construction-trees-and-building-foundations/

City of Guelph Tree Technical Manual (2018), Draft
https://guelph.ca/living/environment/trees/treetechnicalmanual/

City of London Tree Planting and Protection Specifications (2018)
https://www.london.ca/business/Resources/Consultant-Resources/Documents/2018-Specs-and-Reqs/12-DSRM-2018-Tree-Planting-and-Protection.pdf

City of Barrie Tree Protection Manual, V2 (2010)
http://www.oufc.org/wp-content/uploads/2011/12/BARRIE-TREE-PROTECTION-MANUAL-V2.pdf

City of Markham – Trees for Tomorrow Streetscape Manual (2009)
https://www.markham.ca/wps/portal/home/neighbourhood-services/trees/files/trees-for-tomorrow-streetscape-manual

City of Palo Alto Tree Technical Manual (2001)
https://www.cityofpaloalto.org/civicax/filebank/documents/6436

Examples of Ecosystem and Tree Compensation Guidance

City of Brampton Tree Compensation: Tableland Tree Assessment Guidelines (2018)
https://www.brampton.ca/EN/Business/planning-development/guidelines-manuals/Documents/Tableland_Tree_Assessment_Guidelines.pdf

City of Guelph Tree Technical Manual, Version 1, Nov. 2018
https://guelph.ca/living/environment/trees/treetechnicalmanual/

TRCA Guideline for Determining Ecosystem Compensation (2018)
https://laserfiche.trca.ca/WebLink/0/edoc/1499894/Guideline%20for%20Determining%20Ecosystem%20Compensation,%20June%202018.pdf

The Mitigation Hierarchy Guide
http://www.csbi.org.uk/our-work/mitigation-hierarchy-guide/#

Biodiversity offsets and the mitigation hierarchy: a review of current application in the banking sector: https://www.unepfi.org/fileadmin/documents/biodiversity_offsets.pdf

Nowak and Aevermann 2019 - Tree compensation rates: Compensating for the loss of future tree values: https://www.sciencedirect.com/science/article/pii/S1618866718301651

Examples of Canopy Cover Studies and Critical Thinking on Canopy Cover Targets

USDA - Urban Tee Canopy Assessment: A Community's Path to Understanding the Urban Forest, 2019
https://www.fs.fed.us/sites/default/files/fs_media/fs_document/Urban%20Tree%20Canopy%20paper.pdf

American Forests - Why We No Longer Recommend a 40 Percent Urban Tree Canopy Goal
https://www.americanforests.org/blog/no-longer-recommend-40-percent-urban-tree-canopy-goal/

Cecil Konijnendijk - A critical look at the use of canopy cover targets in urban forest governance
https://www.youtube.com/watch?v=UL5FiKr92ME&app=desktop

National Capital Region's New Tree Canopy Study
http://ncc-ccn.gc.ca/news/national-capital-regions-new-tree-canopy-study-mapping-the-tree-canopy-understanding-green-infrastructure

City of Toronto – Every Tree Counts: A Portrait of Toronto's Urban Forest (2011)
https://www.toronto.ca/wp-content/uploads/2017/12/92de-every-tree-counts-portrait-of-torontos-urban-forest.pdf

Tree Canopy Report: Kitchener, Ontario
https://www.kitchener.ca/en/resourcesGeneral/Documents/INS_OPS_UrbanForestry_Tree-Canopy-Report-Kitchener.pdf

"Green View Index" - Treepedia: Exploring the Green Canopy in cities around the world

- http://senseable.mit.edu/treepedia
- https://www.weforum.org/agenda/2018/03/the-12-cities-with-the-most-trees-around-the-world

Appendix B

Outreach Summary Table

Appendix B
Outreach Summary Table

The following table provides an overview of the municipal sources who provided input as part of the targeted outreach undertaken in support of the development of the Best Practices Guide to Urban Forest Planning between August 2019 and November 2019. Sincere thanks are extended to those who provided feedback.

This overview highlights the key pieces of information shared through these consultations which have informed the development of this guide. These summaries have not been reviewed by the participants. Beacon has tried to capture the information shared accurately but takes responsibility for any errors or misrepresentation.

Contact Details	Highlights of Correspondence(s)
York Region	Phone interview 2019-09-17: • York's current Official Plan (OP)** has been quite effective at protecting woodlands, particularly in urban areas, but recognize a need to include more policy that applies in urban areas and supports area municipal efforts to protect, replace and plant trees. • The current OP includes a woodland cover target (25%) and has found this to be a useful tool in communicating with decision-makers and other managers, but work is needed to refine this metric and put it in context. • Through the Region's Strategic Forest Management Plan target ranges have been set for both wooded cover and overall urban forest cover to capture the value of trees outside the Natural Heritage system (NHS). This has been well-received by 8 of 9 local municipalities, and will be integrated into the next OP. • York woodland bylaw has been in place since 1991 and is effective due to: ongoing education and outreach; political support from Council and Senior Management; and willingness to prosecute when public interest is paramount. They also have resources to enforce it. • Compensation for wooded areas approved for removal is generally only accepted as woodland restoration, ideally on site, and rarely as cash-in-lieu. • Compensation for individual trees is generally diameter-based (e.g., 1 cm replaced for 5 cm removed) with some site-specific flexibility. • Other tools that help with meeting urban forest (UF) objectives include: Strategic Forest Management Plan, York Region Urban Forest Forum, Greening Strategy, Green Infrastructure Asset Management Plan and a Reserve Fund for the forest maintenance and management.
Halton Region	Phone interviews 2019-08-23 and 2019-09-27: • Shared information on the Regional OP and woodlands tree by-law policies related to the urban forest, and their effectiveness; could not speak to Site Plan or Zoning – suggested we reach out to Richard Clarke. • In general, they find the Region's Official Plan policies quite effective although he indicated the criteria for significant woodlands could be improved.

Contact Details	Highlights of Correspondence(s)
	• Similarly, the Region's woodlands bylaw is generally very good, there is room for a few refinements. They further agreed outreach and education are critical parts of bylaw enforcement. • They flagged a few key areas where Halton's (and other) OPs could be improved including: policy that speaks to unmapped features – including woodlands – to ensure that just because they aren't mapped doesn't mean they don't need to be evaluated; policies for ecological compensation / offsetting programs or guidelines for wooded features not protected as part of the NHS; and prescribed mandatory minimum vegetation protection zones / ecological buffers in urban greenfield developments. • They added tree compensation / replacement related to the diameter of the trees being removed. One tree planted for one tree removed leaves too much of a gap – especially for large trees. The approach should be rooted in a principal of no net loss and should apply to trees on municipal lands (parks and ROWs), not just on private lands. • Other tools that could be used judiciously in urban areas include: Holding provisions and Site Plan Controls.
City of Toronto	Written response 2019-09-04 and a follow-up phone interview 2019-09-17: • Toronto's OP** does not have a stand alone section dedicated to the urban forest but has a many policies that support the protection and integration of trees, green spaces and natural areas into the built environment. These include policies for avenues, Parks and open spaces, employment areas, downtown, neighbourhoods and the waterfront. • OP policies support Complete Streets, and some Secondary Plans include sites for future Parks and open spaces (e.g., Warden Woods Community and Yonge-Eglinton Secondary Plans). • Toronto has a private tree bylaw and a ravine bylaw that both regulate the removal of trees on private lands and provide mechanisms for compensation plantings and Woodland restoration. • Other planning tools used by the City to support the urban forest include: zoning by-laws (e.g., maximum lot coverage and minimum landscaping requirements), site plan controls and Toronto Green Standards (used during Site Plan Application). • UF direction also supported by strategic documents such as the Strategic Forest Management Plan, Ravine Strategy and Every Tree Counts.
City of Hamilton	Written responses 2019-09-24 and 2019-09-20: • The City of Hamilton has two Official Plans – one for its urban and one for its rural areas. In the Urban Official Plan there are several policies supporting woodland and tree protection and restoration, tree planting on City lands, use of native species, and compensation for municipal trees removed as part of infrastructure works. • Some newer Secondary Plan policies (e.g., Airport Employment Growth District) support integration of low impact development (LID) and naturalized transitions from developed areas to NHS. • The City also has a private woodland bylaw (regulating woodlands of at least 0.2 ha), a public tree bylaw and individual private tree bylaws in some former area municipalities (Ancaster, Stoney Creek, Dundas). Hamilton has had mixed success with protecting trees through its by-laws. There have been two recent convictions, one under the Town of Ancaster By-law and the other

Contact Details	Highlights of Correspondence(s)
	under the Urban Woodland Conservation By-law. Replanting orders are most effective, because the woodland is replaced. • The City also has a tree protection policy that requires financial compensation and replacement plans for any City trees approved for removal, with the work done by the City. This is found to result in more successful tree establishment. • The City also uses the Site Plan Approval process to ensure trees on site are inventoried and that landscaping as well as tree compensation for trees removed is provided. There are no formal guidelines for tree compensation on private lands; it is pursued on a case-by-case basis.
City of Guelph	Written response 2019-09-12: • The City has strong NHS policies as well as UF policies that support the urban forest outside the NHS. These include stewardship and monitoring policies, as well as policies supporting invasive species management. • OP policies** are carried over and refined as needed in new Secondary Plans (Clair-Maltby, Guelph Innovation District) as well as the Brooklyn and College Hill Conservation District. • Private tree bylaw regulated all trees of at least 10 cm dbh on lots of at least 0.2 ha. Where permits are issued, replacement of at least 1:1 is required or cash-in-lieu; where removals occur under the Planning Act, securities are required. • Tools that have been effective outside OP policies and bylaws include: a Site Plan User Guide that specifies requirements for inventory, protection and landscaping; use of Conditions of Subdivision; Guidelines for Environmental Impact Studies (EIS) and requirements for an Environmental Implementation Report (EIR) as part of site plan process; having an UFMP that is being implemented and related Tree Technical Manual including compensation requirements; Linear Infrastructure Standards and Development Engineering Manual that include specifications for tree planting and protection; and Downtown Streetscape Manual and Built Form Standards. Commercial Built Form Standards are in progress. • Additional tools that may be useful include: a natural asset inventory, watershed / subwatershed planning; feature-based water-balances being required for site designs; invasive species strategy.
City of Mississauga	Phone interviews 2019-08-27 and 2019-10-02: • The UFMP is proving to be a very useful and effective tool in helping to guide planning, management and monitoring. Staff are well-supported by decision-makers (e.g., Council, managers) and provided resources to implement the plan. • Having specific UF policies in the OP** is also very helpful in implementing and enforcing protection and replacement of the UF. This includes policies that support partnerships, management / maintenance and stewardship, as well as targets and monitoring. • Significant woodlands are generally well protected through OP policies and the City's private tree bylaw is actively enforced and helps regulate tree removals outside protected natural areas. • There are however some challenges where natural areas dominated by invasive species are not protected under the policies and therefore can be removed without compensation for lost wooded cover.

Contact Details	Highlights of Correspondence(s)
	• The private tree bylaw allowing removal of up to two trees above 15 cm dbh per year without a permit also provides a legal loophole for strategic landowners (especially in Residential Woodlands areas) to gradually remove trees without compensation to eventually accommodate infill. • The combination of strong OP policies, bylaws and an UFMP that are all supported is key to effective UF sustainability. • Opportunities in Mississauga being pursued include including UF in asset management planning and updating the Green Standards.
City of Brampton	Phone interview and written responses 2019-08-20: • The City's Vision 2040 includes a Million Trees Initiative, "Brampton Tree Project", support for regeneration of the urban forest and complete streets that include trees. • The Environmental Master Plan (EMP) includes targets for planting trees, support for partners, support for appropriate soil volumes and integrated pest management. These directions are to be brought into the new OP. • City has both a woodland and individual tree protection bylaw that are working well to regulate tree protection and replacement, but more work is needed to coordinate implementation of permits internally and to better educate residents about the bylaws. • Tools that have been effective outside OP policies and bylaws include: Tableland Tree Assessment Guidelines that guide compensation for new developments and site plan; Sustainability Assessment Tool developed with Richmond Hill and Vaughan and implemented through Site Plan; Natural Heritage and Environment Strategy and Natural Heritage System Restoration Program; Sustainable Community Program applies to all Block Plans, full Site Plans and subdivisions of at least 10 residential units - including soil quantity and quality, tree compensation, canopy objectives; Development Design Guidelines for streetscapes, parks and open space systems; Community Design Framework for Secondary Plan stage; and Landscape Development Guidelines for all new development which are very detailed including densities, species selection, setbacks. • Opportunities for improvement in Brampton include: improved coordination between forestry staff and building permit staff; better education and enforcement of tree bylaws and permits, better protection and management of woodlands and naturalized areas; and creation of municipal tree inventory.
Town of Caledon	Phone interview fall 2019: • As one of the few municipalities in the GTA with some greenfield remaining, Caledon is experiencing greater pressures for urbanization but the policies and standards have not been updated to reflect these new pressures. Environmental Protection Area (EPA) policies in place work quite well, plus there are the Greenbelt policies. However, outside these areas there is limited regulation of treed areas. • The Town's woodlands bylaw is enforced and appears to be effective but enforcement is limited by staff resources. • Discussion of a heritage / individual private tree bylaw two years ago did not get adequate political or public traction. However, there are increasing issues with trees being removed on private lands prior to subdivision or site plan applications. This is a challenge. • The Town's new Urban Design Guidelines are helpful but have no "teeth" as they are not embedded in standards or OP policies. There is a need for some

Contact Details	Highlights of Correspondence(s)
	OP policies specific to the urban forest, as well as policy recognition of UF as a tool to contribute to climate change adaptation and mitigation, and support human health. • Recognition that UF targets could help with this shift.
Region of Peel	Phone interview fall 2019: • Peel currently does not really speak to urban forest in its OP. • Most of the discussion was about current maintenance practices and challenges in Peel ROWs. • One significant planning gap is the lack of a bylaw protecting trees and vegetation on Regional properties including ROWs. A municipal tree bylaw could help, especially if coupled with some outreach to educate residents that these are public trees, often installed in part to mitigate noise, also provide other benefits. Need outreach and educations. • Lack of political support / recognition of the importance of trees among some Councillors noted as another challenge.
Forests Ontario	Phone interview and written follow-up fall 2019: • The 50 Million Trees Program was funded as is by the federal government for 2019 and the details of funding going forward are being negotiated. • As part of the program revamping, the guidelines for what types of tree planting activities could be subsidized was also being reviewed. • Current directions include considerations include loosening of some of the criteria to allow for smaller scale plantings (previous guidelines required properties to accommodate at least 500 seedlings) and include non-native species that are also not invasive. • The Region and / or local municipalities could apply to be come program partners and be eligible for 10,000 to 20,000 seedlings in their first year of partnership.

** Excerpts of tree and urban forest policies from these municipalities' Official Plans are provided in **Appendix C**.

Appendix C

Urban Forest Policies from Selected Official Plans in Ontario

Appendix C

Urban Forest Policies from Selected Official Plans in Ontario

This appendix includes excerpts from Official Plans of southern Ontario urban and urbanizing municipalities with policies and policy sections that focus on the urban forest. These policies are in addition to natural heritage system (NHS) policies found in these Official Plans. They include a number of policies that reflect unique, progressive and innovative approaches from the following jurisdictions:

- City of Ottawa (single tier)
- Region of York
- Town of Richmond Hill, Region of York
- Town of Ajax, Region of Durham
- City of Toronto (single tier)
- Town of Oakville, Region of Halton
- City of Guelph (single tier)
- City of London (single tier)
- City of Mississauga, Region of Peel
- City of Brampton, Region of Peel

City of Ottawa Official Plan 2003 – December 11, 2013 Consolidation
[In Ottawa's Official Plan a "Forest Strategy" is part of this broader strategy for sustainability and environmental health].

SECTION 1.4 – SUSTAINABLE CAPITAL CITY

- *Commitment #5 - Take an ecosystem management approach in the protection of our natural resource features. This includes land use policy, planning, incentives and education to increase tree cover, protect wetlands, create and preserve natural terrestrial and aquatic habitats and corridors, manage stormwater and protect groundwater and surface water resources."*
- *Greenspace Master Plan – All greenspaces in the urban area are characterized and evaluated in this plan as a basis for policies on greenspace protection, acquisition and management.*
- *Key factors for successful sustainability initiatives, such as the following:*
  - *Integrated planning processes, that include ecological, social and economic factors together;*
  - *Coordinated direction and efforts of organizations – public, private and non-profit at local, national and international levels;*
  - *Collaboration and participation on development and implementation, with a strong representation from the community;*

- *Decision-making and monitoring systems that consider and provide information in a way that balances social, financial and environmental considerations – this includes systems that strive to adequately "value" environmental aspects; and*
- *Monitoring and reporting on their progress.*

SECTION 2.4.5 – GREENSPACES (INCLUDING FOREST COVER TARGET, ENGAGEMENT / PARTNERSHIPS)

7. …the City will maintain a target for forest cover for the entire city of 30 per cent. The City will increase forest cover in urban and rural areas through the planning and development review process by:
a. Identifying and protecting environmental areas designated in the Plan, including provisions for environmental assessments for adjacent lands;
b. Emphasizing tree preservation and planting in the requirements for private development and public works, including road corridors, parks and municipal buildings;
c. Developing guidelines for tree preservation and planting in the development review process, including a policy on compensation for loss of forest as a result of development. This policy, to be developed in consultation with the development industry and the community, will consider various forms of compensation, including planting on other sites owned by the applicant or the City.

9. The City will work with Conservation Authorities, rural landowners, community groups, organizations working with urban forestry or private land forestry, and other interested parties on a strategy to manage and protect forests in the rural and urban area. This work will include:
a. Developing a by-law under the Municipal Act to regulate tree-cutting and preserve woodlands;
b. Developing current management plans for forests owned by the City;
c. Implementing best management practices for City-owned street trees and forests and taking a leadership role in urban forestry programs nationwide;
d. Continuing to naturalize City-owned greenspaces.

10. The City will work with the Conservation Authorities and other interested stakeholders to develop a by-law under the Municipal Act to regulate the removal of top soil, grade alteration, and placement of fill. [Amendment #76, OMB File #PL100206, August 18, 2011]

SECTION 4.7 - ENVIRONMENTAL PROTECTION

Objectives include: *"Increasing forest cover across the city";*
4.7.2 Protection of Vegetation Cover
Development proposals will be required to preserve vegetative cover or propose compensation measures, through the following policies.
… applications for subdivision, condominium and site plan approval, affecting vegetation cover on site, will be supported by a Tree Conservation Report and a Landscape Plan.

The Regional Municipality of York Official Plan - 2019 Office Consolidation (April 2019)
[York Region's Official Plan focusses primarily on woodland policies and defers most tree-related policies to its local area municipalities].

2.2.49 That should policy 2.2.48 apply... A woodland compensation plan shall be required for removed woodland deemed not significant... [which] shall be prepared to the satisfaction of York Region in consultation with the conservation authority and the local municipality and shall demonstrate a net gain in woodland area.

2.2.52 To encourage and work with the Province and other stakeholders involved in woodlands management to maintain and enhance publicly and privately owned forested lands, and to encourage landowners through stewardship initiatives to use good forestry practices."

"It is the policy of Council:
5.2.34 To encourage local heat island effects mitigation in all development including: a. green and/or white roofs; b. locating trees or other plantings to provide shading for at least 50 per cent of sidewalks, patios, and driveways, and within 15 metres of buildings; and, c. installing light-coloured paving materials including white concrete, grey concrete, open pavers and any material with a solar reflectance index of at least 29.

5.4.6 That comprehensive secondary plans for Regional Centres and key development areas along Regional Corridors be prepared by local municipalities and implemented in co-operation with the Region and related agencies. These secondary plans shall include:
…
h. requirements to reduce and/or mitigate urban heat island effects, by considering the use of green and white roofs, greening to provide shade and light-coloured surface materials;
i. policies that establish urban greening targets, which may be achieved through urban forest canopy, green walls, requirements for on-site greening;

6.2.7 That local municipalities shall adopt site alteration and tree-cutting by-laws in conformity with the Municipal Act in accordance with provisions of the Oak Ridges Moraine Conservation Act, 2001.

Town of Richmond Hill Official Plan: Building a New Kind of Urban July 2010 – January 23, 2018 Consolidation

Section 3.2.1.2 Managing the Urban Forest

26. the Town will work with York Region in developing a Regional Urban Forest Management Plan that may determine locally significant woodlands and a strategy to increase tree cover in the Town ...
27. As part of the Regional Urban Forest Management Plan .. the Town shall undertake an Urban Forest Effects (UFORE) Study to quantify the Town's urban forest and its functions.

28. For each tree that is removed from Town property or from Town or Regional street rights-of-way, a sufficient number of trees will be replanted based on an appropriate methodology to the satisfaction of the Town to replace the lost tree value.
29. The Town shall promote the planting of native species. The planting of invasive species shall not be permitted.
30. The Town shall continue to promote public awareness and stewardship initiatives that educate residents about the value and importance of protecting the natural environment and that involve residents in the planting and care of trees.
31. The Town will encourage and work with the Province and other stakeholders involved in forest management to maintain and enhance publicly and privately owned forested lands and to encourage landowners, through stewardship initiatives, to use good forestry practices.

Additional relevant clauses include policies that:

- require development proponents to protect existing trees more than 20 cm dbh "*to the greatest extent possible*" and prepare a Tree Inventory and Preservation Plan and replace cover from trees more than 20 cm dbh approved for removal "*based on an appropriate methodology*" approved by the Town (Policies 3.2.3(20), (21) and (22));
- support for the role of trees in mitigating poor air quality and urban heat island effects (Policies 3.2.3(5), 3.2.3(18))
- require trees along public streets have "*adequate space, growing medium and conditions for tree protection and tree planting within street rights-of-way*" (Policies 3.2.3(23) and (24));
- set a target for canopy cover of 25% with priority on "*increasing tree cover within the settlement area in order to enhance linkages to the Greenway System*" (Policies 3.2.1.2(21)); and
- support enhancements of the Greenway System (through naturalized plantings, boulevard plantings and hedgerows) and also support acquisition of private lands by the Town where feasible and securement of public lands, with consideration for developing a Greenway Acquisition Strategy (Policies 3.2.1.3(2) through (6)).

Town of Oakville Official Plan 2009: Livable Oakville – August 28, 2018 Consolidation

URBAN DESIGN – LANDSCAPING
6.10.2 Development should preserve and enhance the urban forest by: a) maintaining existing healthy trees, where possible; b) providing suitable growing environments; c) increasing tree canopy coverage; d) incorporating trees with historic or cultural significance; and, e) integrating a diverse mix of native plant species.
6.10.3 Landscaping should be incorporated to provide shade and wind protection.

SUSTAINABILITY

The Town is committed to sustainable development in order to achieve environmental sustainability.

10.1 General 10.1.1 Objectives

The general objectives for sustainability are: a) to minimize the Town's ecological footprint; b) to achieve sustainable building and community design; c) to preserve, enhance and protect the Town's environmental features, natural heritage systems and waterfronts; d) to enhance the Town's air and water quality; e) to maintain the existing urban forest; and, f) to progressively increase the urban forest to achieve a canopy cover of 40% Town-wide beyond the life of this Plan.

AIR QUALITY

10.11.1 The Town will work to improve air quality through its land use and transportation decisions including, but not limited to: …, f) establishing policies and by-laws that protect and enhance the urban forest.

URBAN FOREST

The Town considers its municipally-owned urban forest as green infrastructure.

10.12.1 For every square metre of leaf area that is removed from Town property or from Town road rights-of-way, sufficient trees will be replanted to replace the lost square metres of leaf area.

10.12.2 The Town shall ensure that appropriate space for tree protection and tree planting within road rights-of-way are included in the design of new roads or road improvements.

10.12.3 The Town shall develop standards for the protection of trees to assist with the review of planning applications and municipal consents by utilities.

10.12.4 The Town shall develop standards for the planting of new trees to assist with the review of planning applications.

10.12.5 Tree removal on private property shall be subject to the Town's private tree protection by-law.

Town of Ajax Official Plan - January 15, 2016 Consolidation

2.1.4 Tree Canopy

The Town recognizes the value of tree cover in improving air quality and lowering air temperature during summer months. Expanding and providing a more robust tree cover creates bird and wildlife habitat, reduces the urban heat island effect, improves air quality, and connects open spaces and other natural areas. To maintain, protect, and enhance the existing tree canopy, the Town shall:

a) Develop and implement an Urban Forest Management Plan;

b) Encourage the planting of native or non-native non-invasive tree species and vegetation that are resilient to climate change and provide high levels of carbon sequestration, subject to the Town's approval, particularly through new development and on municipally-owned land;

c) Consider enacting a Town-wide tree-cutting by-law to regulate the destruction or injury of trees;

d) Encourage the use of water-conserving irrigation systems and the provision of adequate permeable surfaces around newly planted trees to establish a secure root system;
e) Require reimbursement, in the form of new trees or financial compensation, for all healthy trees proposed to be removed in development applications, based on the findings of a Tree Inventory and Preservation Plan;
f) Encourage tree planting by local residents and organizations, and educate residents about the benefits of planting trees versus the environmental impact of removing trees; and,
g) Implement measures to protect, enhance, and expand the tree canopy, including but not limited to:

i) requiring tree planting in areas of extensive surface parking;
ii) promoting development that maximizes areas for tree planting; and,
iii) preserving the existing tree canopy.

City of Toronto Official Plan, Adopted by Council 2002 – February 2019 Consolidation
[The City of Toronto does not have a stand alone Official Plan section focusing on the urban forest, but does integrate discussion and policies related to trees and the urban forest].

2.2.3 AVENUES: REURBANIZING ARTERIAL CORRIDORS
Preamble
Each Avenue Study will contain a vision and an implementation plan to show:
- *how the streetscape and pedestrian environment can be improved;*
- *where public open space can be created and existing parks improved;*
- *where trees should be planted…*

2.3.1 HEALTHY NEIGHBOURHOODS
Preamble
When we think of our neighbourhoods we think of more than our homes. Our trees, parks, schools, libraries, community centres, child care centres, places of worship and local stores are all important parts of our daily lives.

3.1.1. THE PUBLIC REALM
5. City streets are significant public open spaces which connect people and places and support the development of sustainable, economically vibrant and complete communities. New and existing City streets will incorporate a Complete Streets approach and be designed to perform their diverse roles by: a) balancing the needs and priorities of the various users and uses within the right-of-way, including …ii. space for other street elements, such as utilities and services, trees and landscaping, green infrastructure…

6. Sidewalks and boulevards will be designed to provide safe, attractive, interesting and comfortable spaces for pedestrians by: a) providing well designed and co-ordinated tree planting and landscaping, …; and b) locating and designing utilities within streets, within buildings or underground, in a manner that will minimize negative impacts on the natural pedestrian and visual environment and enable the planting and growth of trees to maturity.

3.1.2 BUILT FORM

1. New development will be located and organized to fit with its existing and/or planned context. It will frame and support adjacent streets, parks and open spaces to improve the safety, pedestrian interest and casual views to these spaces from the development by: … d) preserving existing mature trees wherever possible and incorporating them into landscaping designs.

5. New development will provide amenity for adjacent streets and open spaces to make these areas attractive, interesting, comfortable and functional for pedestrians by providing: a) … trees, shrubs, hedges, plantings or other ground cover, permeable paving materials, street furniture, …;

3.3 BUILDING NEW NEIGHBOURHOODS

1. New neighbourhoods will have a comprehensive planning framework reflecting the Plan's city-wide goals as well as the local context. The framework should include: a) the pattern of streets, development blocks, open spaces and other infrastructure, including adequate space for planting of trees;

3.4 THE NATURAL ENVIRONMENT

Preamble

Strong communities and a competitive economy need a healthy natural environment. Clean air, soil and water and abundant trees, parks and open spaces, underlie our health and well-being and attract people to work and invest in the City.

…

The urban forest is essential to the City's character. More than three million trees dominate our ravines, line our boulevards and beautify our parks. They provide shade and habitat, help clean the air, contribute to the green links between our streets, neighbourhoods, employment areas and parks, and support ecosystem diversity. City-building and development pressures, however, can create a difficult environment in which to sustain the urban forest canopy. We must not only protect the existing urban forest, but also enhance it, especially by planting native trees and trees that increase canopy coverage and diversity, or other non-invasive species where urban conditions may limit the survival of native species.

Policies

1. To support strong communities, a competitive economy and a high quality of life, public and private city-building activities and changes to the built environment, including public works, will be environmentally friendly, based on:

d) preserving and enhancing the urban forest by: i. providing suitable growing environments for trees; ii. increasing tree canopy coverage and diversity, especially of long-lived native and large shade trees; and iii. regulating the injury and destruction of trees;

4.3 PARKS AND OPEN SPACE AREAS

Development Criteria in Parks and Open Space Areas

6. Any development provided for in Parks and Open Space Areas will: a) protect, enhance or restore trees, vegetation and other natural heritage features and maintain or improve connectivity between natural heritage features;

5.1.3 SITE PLAN CONTROL

3. To help achieve environmentally sustainable development, the City may use subsection 114(5)(2)(iv) and (v) of the City of Toronto Act, 2006 to secure the following sustainable design features in development that address exterior building and site matters in Tier 1 of the Toronto Green Standard: …; b) high-albedo surface materials, open grid paving, shade trees, green and cool roofs to reduce ambient surface temperature to minimize the urban heat island effect; …; e) trees to enhance the urban forest and use of native species to protect, restore and enhance the natural heritage system;

5.3.3. STRATEGIC REINVESTMENT

Preamble

In a world of limited resources, an important investment priority must be to take care of what we have – to maintain our streets, water and sewer infrastructure and watercourses, parks and urban forest, cultural and recreation facilities, transit and City owned buildings and housing in a "state of good repair".

5.3.5 GREAT CITY CAMPAIGNS

Preamble

A city is successful when all sectors care enough to give their time, effort and money to build cultural centres, restore natural heritage features, find competitive alternatives to the private automobile or plant trees in their neighbourhood.

Policies

2. Campaigns and campaign projects will engage community groups, business and industry, non-governmental organizations, our universities and colleges, the arts and cultural communities, Council and representatives of other levels of Government to achieve progress over time in the priority areas:
a) creating beautiful places that improve public spaces and streetscapes;
b) providing transportation options that reduce auto dependency;
c) building housing that meets the needs of all Torontonians;
d) greening Toronto through naturalization, planting trees and acquiring and protecting natural areas.

City of Guelph Official Plan: Envision Guelph (2014) – March 2018 Consolidation

4.1.6 URBAN FOREST POLICY SECTION

Preamble

The City's Urban Forest, includes plantations and smaller wooded areas less than one 1 ha, hedgerows and individual trees that are not included in the City's Natural Heritage System.

These wooded areas and trees provide various benefits and services to the city including reduction of air pollution, moderation of the urban heat island effect, carbon sequestration, shade, habitat for urban adapted wildlife and mental health benefits.

It is also recognized that in some cases wooded areas in the urban matrix are degraded (e.g., dominated by invasive species) and that new development may provide opportunities for enhancement and restoration of portions of these features, and/or retention of mature and healthy noninvasive trees as part of the proposed development or site alteration.

OBJECTIVES

a) To ensure that opportunities for protection of trees outside the City's Natural Heritage System are fully considered through the planning process.
b) To recognize that the Urban Forest provides important ecosystem services that benefit current and future generations by: i) identifying opportunities for protection, enhancement and restoration; and ii) supporting initiatives that provide for ongoing management and stewardship of the Urban Forest.
c) To maintain and increase tree canopy cover within the city, with a target of 40% by 2031.

4.1.6.1 Policies

Plantations and hedgerows will be required to be identified through an Ecological Land Classification (ELC) in conjunction with proposed development applications.

1. Healthy non-invasive trees within the urban forest shall be encouraged to be retained and integrated into proposed development. Where these trees cannot be retained, they will be subject to the Vegetation Compensation Plan addressed in Policy 4.1.6.4.
2. Where the City is undertaking infrastructure work, healthy non-invasive trees within the urban forest will be retained to the fullest extent possible. Where trees are required to be removed, relocation or replacement plantings will be provided by the City.
3. Development and implementation of woodlot management plans may be required prior to the conveyance of woodlands to the City.
4. Tree destruction or removal of trees on private property will be regulated by the City's tree by-law.
5. Invasive, non-indigenous trees, shrubs and ground covers, such as European buckthorn, will be encouraged to be eradicated without the need for compensation through the Vegetation Compensation Plan.

4.1.6.2 Plantations

1. Development and site alteration may be permitted within all or part of a plantation where it has been demonstrated to the satisfaction of the City, that the plantation or part thereof: Heritage System; and ii) that the plantation does not support an Ecological Linkage within the Natural Heritage System.
2. Development and site alteration within a plantation shall also require a Tree Inventory and a Tree Protection Plan in accordance with Section 4.2.4.
3. A Vegetation Compensation Plan shall be required for the replacement of all healthy non-invasive trees measuring over 10 cm dbh, proposed to be removed.

4.1.6.3 Hedgerows and Trees

1. Development and site alteration may be permitted to impact hedgerows and individual trees provided it has been demonstrated, to the satisfaction of the City, that the hedgerows and trees cannot be protected or integrated into the urban landscape.

2. Tree Inventory and Vegetation Compensation Plans shall be required for all new development and site alterations.
3. Heritage Trees may be identified by the City in accordance with the Cultural Heritage Policies of this Plan.

4.1.6.4 Vegetation Compensation Plan
1. The detailed requirements for a Vegetation Compensation Plan will be developed by the City through the Urban Forest Management Plan. The requirements, once developed, will be applied to determine appropriate vegetation compensation for the loss of trees through development and site alteration.
2. The Vegetation Compensation Plan shall identify, to the satisfaction of the City, where the replacement vegetation will be planted. Where replanting is not feasible on the subject property, the planting may be directed off-site to lands identified in consultation with the City, including lands within the Natural Heritage System and may include: i) Established buffers, ii) Significant Valleylands, iii) Significant Landform, iv) Ecological Linkages, or v) Restoration Areas.
3. All replacement vegetation should be indigenous species and compatible with the site conditions within which they are proposed. In some cases, re-vegetation may consist of a combination of trees, shrubs and herbaceous species, or may consist exclusively of indigenous herbaceous species and grasses where the restoration objective is to establish a meadow habitat.
4. The vegetation compensation plantings do not replace the normal landscape planting requirements as part of the approval of any development or site alteration.
5. A Vegetation Compensation Plan is required to be implemented through on site or off site plantings or cash in lieu equal to the value of the replacement vegetation will be required by the City.

4.1.7 Natural Heritage Stewardship and Monitoring
Objective
a) To manage the City's Natural Heritage System and Urban Forest through stewardship, monitoring and partnerships between the City, GRCA, the MNR, private landowners and community organizations.

Policies
4.1.7.1 Invasive Species
1. Management and control of non-indigenous and invasive species will be undertaken on City owned and managed properties.

2. Plantings on municipal properties shall be indigenous species where feasible and appropriate, except where harsh environmental conditions would limit their survival.
3. Management and control of non-indigenous, invasive species is encouraged on lands owned by other public agencies and utilities.
4. Plans prepared in conjunction with development and site alteration applications will require indigenous plants, trees and shrubs except where harsh environmental conditions would limit their survival.

5. Indigenous species will be encouraged on private lands and particularly on those adjacent to the Natural Heritage System.

…

4.1.7.3 Land Stewardship

1. Public agencies, community organizations, and private landowners are encouraged to protect and enhance the City's Natural Heritage System and the Urban Forest.

2. The City will work with the GRCA and other public and private organizations to promote stewardship and leverage funding to support land stewardship activities.

3. Opportunities for plant rescue activities for plants, other than those identified for habitat protection in accordance with the Significant Natural Area and Natural Area policies will be encouraged. Such rescue activities may only occur with the consent of the land owner and only in situations where the plant is within an area approved for development in accordance with the Significant Natural Area and Natural Area policies of this Plan, and under the supervision of a professional in the field of Botany.

4. Encroachment into the City's Natural Heritage System will be discouraged through education and appropriate provisions.

5. The City will promote stewardship of the Natural Heritage System and the Urban Forest.

…

4.1.7.5 Ecological Monitoring

1. A City-wide environmental monitoring program will be developed and implemented to assess the effectiveness of the policies, decisions and programs in meeting the objectives of the Natural Heritage System and the Urban Forest.

2. Opportunities for collaborating with the GRCA and the MNR will be incorporated into the environmental monitoring program (e.g. fisheries, threatened species).

3. Short-term, site-specific monitoring may be required as a condition of the planning approval process and the results will be integrated into the city-wide monitoring program, where applicable.

Urban Forest means: for the purposes of this Plan, plantations, woodlands, hedgerows, treed areas and individual trees outside the City's Natural Heritage System.

City of London - The London Plan - Council adapted June 23, 2016. Minister approved Dec. 23, 2016. Consolidated May 23, 2019.

[London's Official Plan is one of the most current and arguably the most comprehensive in terms of the inclusion of urban forest policies. Policies 382 to 401 are within the "Forest City" section of the Official Plan where most of the urban forest policies are found].

Direction #4. Become one of the greenest cities in Canada.

9. Strengthen our urban forest by monitoring its condition, planting more, protecting more, and better maintaining trees and woodlands.

11. Implement green infrastructure and low impact development strategies.

15. Strategically link and coordinate all of our environmental initiatives.

17. Promote linkages between the environment and health, such as the role of active mobility in improving health, supporting healthy lifestyles and reducing greenhouse gases.

387_ Trees mitigate the impacts of climate change by reducing greenhouse gas emissions and providing shade, which cools us personally and reduces the energy required to cool our buildings. Trees improve air quality by absorbing pollutants and by producing oxygen. They give us spiritual well-being and an over-all higher quality and longevity of life. Trees improve watershed health by controlling water movement above and below the ground, thereby reducing erosion and surface runoff and improving water quality. Trees increase property values and provide an economic stimulus in commercial areas. Trees benefit not just the owners of the property on which they are located, but all of society.

388_ The Urban Forest is integral to London's identity and overall prosperity. … [T]he planning, protection, and enhancement of London's Urban Forest is important for building an attractive, well-designed, and functional city environment...

FOREST CITY GOALS

389_ Our goal is to plan for, and manage, our Urban Forest proactively such that:
1. The structure and function of the Urban Forest, including associated vegetation, is managed to provide maximum benefits and value in both urban and rural areas where possible.
2. From the time this Plan comes into force and effect there is no net loss of tree canopy cover as a result of insects, disease, development, or other factors.
3. Our tree canopy cover increases over time.
4. The city's growth and development is managed over the long term to protect, conserve, and enhance the Urban Forest in a sustainable manner.
5. Our Urban Forest is managed and invested in as infrastructure, and trees are valued as important assets.
6. We establish policies, by-laws, practice standards, and guidelines that clearly define what trees will be preserved and what trees may be removed, to ensure the structure and functions of the Urban Forest are not harmed.
7. Insects, disease, and environmental factors affecting the health and sustainability of our Urban Forest are proactively managed.
8. Good forestry and arboriculture management practices are employed.

392_ Engagement of the public to manage private trees and woodlands is crucial to achieving tree canopy coverage targets and will be implemented through education, promoting stewardship, planting programs, and the development of policies, by-laws, standards and guidelines.
393_ It is a target of this Plan to achieve a tree canopy cover of 28% within the Urban Growth Boundary by 2035.
394_ The 20-year target identified above is intended help us to achieve a long-term tree canopy cover of 34% within the Urban Growth Boundary by 2065.
395_ Specific tree canopy cover and other targets for specific place types will be developed through the Urban Forest Strategy Implementation Plan and implemented through the Zoning Bylaw and other by-laws and guideline documents.
396_ Progress toward meeting these targets will be monitored as follows: 1. A tree canopy cover analysis will be prepared every five years to determine if tree canopy targets are being achieved. 2. An analysis of the structure, function, and value of the Urban Forest will be

prepared at least once every ten years. 3. An inventory update and analysis of trees in boulevards, rural streets, manicured portions of parks and municipal properties will be completed at least once every ten years.
397_ Development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire, as defined in the Provincial Policy Statement. Development may be permitted in lands with hazardous forest types for wildland fire where the risk is mitigated in accordance with wildland fire assessment and mitigation standards.

PROTECT MORE

399_ The following policies will be applied to support the strategy of protecting trees:

1. Tree inventories and tree preservation plans will be required for all planning and development applications and infrastructure projects where trees exist on the applicable lands.
2. Tree inventories will be prepared to identify the trees on a site that may be impacted by the proposed development. Tree inventories may not be required for those treed areas that are to be retained. Tree preservation plans will be prepared to identify trees to be retained, removed, mitigated, and replaced by new tree planting.
3. Large, rare, culturally significant, or heritage trees that are deemed healthy or structurally sound should be retained, with the expectation that concessions may be required in order to support their structure and retain their health for the long term.
b. Except where otherwise specified in City by-laws, trees shall be replaced, on the same site, at a ratio of one replacement tree for every ten centimetres of tree diameter that is removed. Guidelines, municipal standards or by-laws may be prepared to assist in the implementation of this policy.
c. Notwithstanding policy 4.b. above, if inadequate land is available on the site from which the trees are removed to accommodate the replacement trees, a cash-in-lieu fee by-law may be established by the City.
…
e. Any trees planted to replace trees removed from a site, as required by these policies, shall not include any street trees that would normally be required as part of the planning and development approvals process.

6. Individual municipal trees that are removed in connection with City maintenance operations shall be replaced on a one-to-one basis.

10. Building height and densities may be increased, in appropriate circumstances and in conformity with the Bonus Zoning policies in the Our Tools part of this Plan, to support the safe and long term preservation of existing healthy trees, rare species, and wildlife trees.

11. In considering the protection of trees through a planning and development application process, a water balance study may be required to ensure that remaining trees will retain their health over time. Sites will be graded to support the long-term sustainability of existing trees that are to be retained.

MAINTAIN BETTER AND MONITOR

400_ The following policies will be applied to support the strategy of maintaining the Urban Forest and monitoring its health:

1. Good forestry management and arboricultural practices will be applied by the City and its agencies and will also be required of private sector property owners and utility companies as required by policy, by-law, guidelines, or conditions associated with development for all public trees.

2. Management plans will be prepared for various municipal woodlands to establish goals for each woodland and determine how they will be maintained for their sustainability and long-term health.

…

7. The City may develop a program to collect and store seed from rare, endangered, and other suitable tree species or special individual trees for future planting initiatives in accordance with federal and provincial requirements.

PLANT MORE

401_ The following policies will be applied to support the strategy of planting more trees in London:

1. The principle of planting the right tree in the right place will guide all municipal and private development-related tree planting. This involves the assessment of a tree's long-term survival, growth, and health prospects within the context of its urban environment.

2. Tree planting will focus on the preferential planting of large shade tree species where possible to maximize long-term benefits.

3. Native species trees will be preferred for planting, recognizing that non-native species play an important role where native species do not survive and grow well in urban conditions or for specific landscape objectives.

4. All street cross-sections should be designed with below and above grade infrastructure and sufficient soil volume to accommodate mature trees and allow for their long-term survival, growth, and health.

5. Where shade trees are proposed to be planted in areas of hardscape, such as medians, sidewalks, plazas, parking lots and other public spaces, best management practices and green infrastructure techniques may be required as a condition of development, in order to achieve long-term survival, growth, and health of the trees.

6. For all municipal infrastructure renewal or facilities projects, protecting existing trees and tree planting will be a high priority. Tree planting will be incorporated at the earliest design phases of all municipal projects. The design will maximize potential plantable space and include planting available locations within the project area limits.

7. Shade trees should be incorporated into designs, planted, and maintained to achieve an effective tree canopy cover along non-motorized mobility routes, such as sidewalks, cycling lanes and pathways, and around public gathering places such as plazas, transit stops, benches, and playgrounds, in conformity with the City Building policies of this Plan.

…

11. A tree planting plan that maximizes tree establishment across the public and private domain will be prepared for all developments and implemented and enforced

through appropriate conditions. It is intended that all subdivision developments shall be designed to accommodate street trees in the right-of-way in front of all properties in accordance with City standards and guidelines. However, if this is not possible then those trees may be required to be planted in private yards to compensate for street tree deficiencies.
12. Tree canopy cover, tree establishment, and soil quantity and quality standards may be developed to ensure that the tree canopy cover targets of this Plan are achieved.
13. Where a distinctive tree landscape has been identified within a Heritage Conservation District and a tree must be removed, the aim shall be to preserve the heritage landscape through the replacement of the same or similar species in a location as close to the original tree as possible, in accordance with the relevant municipal guidelines, standards, and by-laws. Invasive species will not be re-planted, but will be replaced with a tree that fits well within the context of the streetscape.
14. A minimum tree canopy cover of 30% should be achieved for parking lots. Appropriate soil volume, drainage, and appropriate technology will be used to ensure the long-term sustainability of these trees.
15. The City will support and collaborate with community organizations to foster stewardship and facilitate additional tree planting in London by institutions, businesses, and individuals. The City shall encourage tree planting programs by all sectors of the community that lead to the planting of native tree species and achievement of tree canopy cover targets.

409_ To achieve our objectives, we will plan and provide for a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parkland, public spaces, open space areas, trails and linkages, and water-based resources, and provide opportunities for public access to shorelines, consistent with the Provincial Policy Statement.

1341_ The significance of woodlands will be based on an evaluation of the following considerations and the Ministry of Natural Resources and Forestry's Natural Heritage Reference Manual:
…
3. The woodland is important for the provision of a balanced distribution of open space amenities and passive recreational opportunities across the urban area.

City of Mississauga Official Plan – March 11, 2016 Consolidation

RESIDENTIAL WOODLANDS
6.3.17 Residential Woodlands are areas, generally in older residential areas, with large lots that have mature trees forming a fairly continuous canopy and minimal native understorey due to the maintenance of lawns and landscaping.
6.3.18 Lands within Residential Woodlands will be subject to Site Plan Control.
6.3.19 Development proposals and site alteration for lands within a Residential Woodland will have regard for how existing tree canopy and understorey are protected, enhanced, restored

and expanded. A site development plan may be required to demonstrate how the following, among other matters, have been addressed:
a. existing topography and drainage patterns;
b. maintenance of a high proportion of permeable ground cover to facilitate ground water recharge;
c. habitat for tolerant canopy birds (both in migration and for breeding);
d. habitat for urban wildlife; and
e. connections to other elements within the Green System.
6.3.20 Character area policies may identify additional requirements to protect Residential Woodlands.

URBAN FOREST
The Urban Forest means all the trees in the city, including those within and outside of the Natural
Heritage System, and on public and private lands, as well as the soils that sustain them. Trees are a fundamental component of a healthy city and sustainable community. As such, trees are a valuable asset to the city and contribute to community pride and cultural heritage. The Urban Forest within Mississauga consists of 2.1 million trees on both private and public property. Trees in the urban setting provide environmental, social and economic benefits such as:

- *reducing air pollution by removing carbon, dust and airborne particles;*
- *improving overall air quality;*
- *reducing urban heat island effect;*
- *reducing energy needs for cooling and heating;*
- *assisting in mitigating climate change effects;*
- *intercepting rainfall to reduce runoff, increase groundwater recharge and prevent soil erosion;*
- *reducing noise pollution;*
- *creating wildlife habitat;*
- *enhancing flora and fauna diversity;*
- *assisting in improving public health; and*
- *contributing to the quality and character of the urban environment.*

6.3.39 The Urban Forest is composed of wooded areas within the Natural Heritage System and individual trees on public and private property.

6.3.40 Natural Heritage System policies are applicable to the Urban Forest. This includes policies regarding Significant Natural Areas, Natural Green Spaces, Linkages, Special Management Areas and Residential Woodlands and all related policies.

6.3.41 The Urban Forest will be protected and managed with the goals of: a. maintaining and increasing the city's canopy cover; b. improving both species and structural diversity, as well as overall health; and
c. being more evenly distributed across the city.

6.3.42 Mississauga will protect, enhance, restore and expand the Urban Forest. This will be achieved by the following:

a. developing and implementing a strategic planting program, specific to distinct geographic areas within the city;
b. developing and implementing a strategic proactive maintenance program pertaining to trees on public land;
c. providing sustainable growing environments for trees by allocating adequate soil volumes and landscaped areas during the design of new development and infrastructure projects;
d. developing and implementing consistent standards for tree protection and planting across the city;
e. ensuring development and site alteration will not have negative impacts on the Urban Forest;
f. increasing tree canopy coverage and diversity, by planting trees appropriate to the location and avoiding the use of non-native tree and shrub species that are invasive;
g. regulating the injury and destruction of trees on public and private property;
h. promoting the management and enhancement of the Urban Forest on public and private property;
i. providing public education and encouraging stewardship;
j. providing strategic partnerships with regulatory agencies and others to address invasive nonnative species and diseases and other management challenges; and
k. compliance with by-laws pertaining to tree preservation and protection.

6.3.43 The preservation of trees and woodlots on public and private property that serve to connect and enhance the overall vegetative system and improve wildlife habitat will be encouraged.
6.3.44 Development and site alteration will demonstrate that there will be no negative impacts to the Urban Forest. An arborist report and tree inventory that demonstrates tree preservation and protection both pre and post construction, and where preservation of some trees is not feasible, identifies opportunities for replacement, will be prepared to the satisfaction of the City in compliance with the City's tree permit by-law.
6.3.45 Where tree replacement cannot be accommodated on-site, the City may require cash-in lieu for replacement trees elsewhere or replacement plantings at a location approved by the City.
6.3.46 Mississauga may require ecologically based woodland management plans of a landowner prior to municipal acquisition.

GREEN INFRASTRUCTURE AND URBAN FOREST REFERENCES OUTSIDE CHAPTER 6

Section 4.5 Achieving Guiding Principles: *Mississauga will serve as a steward of the environment by protecting, enhancing, restoring and expanding its Natural Heritage System, making use of sustainable green infrastructure, and preserving and protecting trees.*

Section 6.5 Air Quality: *Clean air is critical to human and environmental health. The most effective strategies to ensure air quality are to encourage and achieve complete communities with a compact urban form, including alternative modes of transportation such as walking,*

cycling and transit and ensuring the compatibility of land uses. It is equally important to protect, enhance and restore the Natural Heritage System and Urban Forest, which all assist in capturing carbon emissions, reducing the heat island effect and providing overall air quality benefits.

Section 6.6 Soil Conservation: *Soil is vulnerable to erosion by wind and water, particularly during the construction process. Erosion affects water resources by reducing water quality and the condition of aquatic habitat through siltation. Reduced water quality in rivers, creeks and Lake Ontario also affects recreational opportunities such as fishing. Erosion can also damage vegetation by exposing roots, which assist in stabilizing soils. Loss of vegetation compromises the Natural Heritage System and Urban Forest. Eroded soils compromise the functionality of key infrastructure such as sewers and ditches, thereby increasing the frequency and severity of flooding. In addition, soil erosion, due to wind, causes dust and particulate matter, which affects human health.*

SECTION 9.5 SITE DEVELOPMENT AND BUILDINGS
Section 9.5.1.6: *Existing vegetation patterns and preservation and/or enhancement of the Urban Forest will be addressed in all new development*

Section 10.6.23: *Green infrastructure, such as bioswales, should be protected during construction and maintenance. Green infrastructure damaged during construction or maintenance should be restored to the satisfaction of the City and appropriate conservation authority.*

GLOSSARY
- *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.*
- *Negative Impact … In regard to the urban forest, negative impact means no net loss to the existing canopy cover. Replacement canopy cover will be evaluated based on the potential canopy cover into the future (e.g., 10 to 20 years) assuming normal growth of planted stock.*
- *The Urban Forest means all the trees in the city, including those within and outside of the Natural Heritage System, and on public and private lands, as well as the soils that sustain them.*

City of Brampton Official Plan (2006). Approved Oct. 11, 2006

4.5.6 Natural Heritage System: 4.5.6.9 to 4.5.6.12 – includes policies on Restoration Areas

4.5.8 Woodlands and The Urban Forest
In a developing municipality like the City of Brampton, the protection of natural woodlands and the conservation of urban forest communities is very important because of their environmental features, functions and linkages as well as the aesthetic qualities and visual

relief this vegetation provides. The natural woodlands and urban forests include all trees on public and private lands. In evaluating the significance of vegetation within the urban forest, their individual values as well as their contributions to the ecosystem as a whole must be considered.

Schedule "D" to this Plan identifies woodlands within the City of Brampton. This inventory is based on the most up-to-date information provided by the Region of Peel, the Ministry of Natural Resources and the area Conservation Authorities. All aspects of the woodlands and the urban forest will be evaluated through the development review process.

4.5.8.3 Pursuant to By-Law 402-2005 (A By-law to conserve and protect woodlots from the impacts of development in all areas within the City of Brampton) and prior to removal of any trees in a woodland, the applicant must submit a silvicultural prescription to apply for a permit pursuant to the Municipal Act.

4.5.8.4 promote "a naturalistic approach to restoration, enhancement and landscaping through native species selection"

4.5.8.6 "proponents of new developments will be required to re-forest their development areas through the planting of trees on boulevards, buffers and stormwater management ponds"

4.5.8.6 "As a condition of Secondary Plan or development approval, the City may require the identification, retention or transport and re-use of local biomass materials such as seedbanks, topsoil or mulches for the subject lands, or in the promotion of naturalized and locally compatible vegetative environments

4.5.8.9 "The City shall encourage other public and private bodies and agencies to pursue the preservation and enhancement of the City's woodland and urban forest communities on private lands"

4.5.8.10 "To encourage the conservation of woodlands, the City may consider such implementation procedures as a landowner cost share agreement, density bonusing or density transfers from woodland areas to other lands owned by affected property owners ...

4.5.8.11 "Development proponents may be credited through the development charges for planting in new parks and valleylands that are associated with their development

4.6.4.2 "When considering the location of parks, the City shall examine the potential for the integration of natural features such as woodlands, hedgerows, significant natural features, undulating topography and areas performing an important ecosystem function. The above should be considered while having regard for the tolerance of these features to the type of recreational usage expected in a particular park."

TREES

4.1.1.13 The City shall consider the following natural heritage planning principles in the design of residential development: (v) Protection, maintenance and restoration of remaining trees and woodlots;

4.1.8.4, 4.2.3.7, 4.2.8.6, 4.3.2.18 Through its review and approval of site plans for residential developments / applications within Office designations / development applications *"pursuant to the Planning Act and in accordance with the Urban Design and Natural Heritage and Environmental Management sections of this Plan, the City shall: "Protect natural heritage features, encourage the preservation of trees and hedgerows , where possible and incorporate sustainable management practices, as appropriate to achieve an environmentally sustainable development"*

4.4.2.10 From a streetscape perspective, the City may require additional road right of-way to provide for improvements like medians, double row planted street trees and civic design considerations.

4.5 NATURAL HERITAGE AND ENVIRONMENTAL MANAGEMENT

Objective f - *Recognize the environmental/ecosystem benefits, habitat function, microclimates, urban design and general aesthetics that the City's woodland and urban forest provides and in this regard maximize the protection, retention, restoration, enhancement and linkages between existing woodlands, trees, hedgerows to other natural heritage and other vegetative features such as valleys, watercourses, etc. within the City;*

Appendix D

Review of Selected Private Tree and Woodland Bylaws in Southern Ontario

Appendix D. Review of Selected Private Tree and Woodland Bylaws in Southern Ontario

Municipal Bylaw (Date of Enactment)	Scope	Permit Fees	Notable Exemptions	Other Notable Clauses	Procedure for Boundary Trees
Ajax, Town of **137-2006 (2006)**	all trees within rural area plus a bit more in the Duffins Creek corridor on the west side of Town, Environmental Protection Areas, Open Space and Town Parks except for Parkettes, as well as Private Open Space; NOTE: covers public and private lands	one tree/yr: $25, more than one/yr: $100, for farmers to cut > 5 trees/yr: $25, appeal charge: $500	trees on lots smaller than 1.2 ha with a single dwelling; up to 5 trees on farms; ornamental trees; activities undertaken in a woodlot in accordance with the Durham Region Tree Conservation By-law	permits issued for cutting according to approved woodlot management plan; a tree permit may not be granted if the tree is an endangered species.	not specified
Aurora, Town of **5850-16 (2016)**	all private property; any tree > 20 cm and < 70 cm dbh, after the allotment of 2 trees/yr on a property < 0.25 ha or per 0.25 ha for properties that exceed 0.25 ha; any tree > 70 cm dbh; heritage trees	noted but amount not specified	up to two trees per 0.25 ha (three or more requires a permit); tree within a building or structure; golf courses; trees in woodlands (which is governed by the Region); trees within a cultivated orchard or tree farm	permit will not be approved if it is located on land that is subject to an application of subdivision approval, a re-zoning application, a site plan approval or an application to amend the official plan until such approval or comment is obtained or application otherwise approved by Council	if the base of the tree straddles a property line, written consent from adjacent property owner is required
Brampton, City of **316-2012 (2012)**	trees in "woodlots" (+0.2 ha)	$250	none	none	not specified
Brampton, City of **317-2012 (2012)**	trees of at least 30 cm dbh on private property	$50	trees within the building envelope or 2 m of an occupied building; trees under 30 cm dbh; trees located on rooftop gardens, interior courtyards or solariums; trees located in a nursery or orchard	none	a person who intends to Injure a Tree shall file an application for a Permit by submitting the written consent of the adjacent property owner if the tree to be injured is a boundary tree
Caledon, Town of **2004-54 (2004)**	all trees in woodlands	$50	up to 20 trees for personal use in a 12 month period; the destruction of trees is on lands under a forest management plan that has been submitted 30 days prior to destruction; destruction of tree for activities under the *Ontario Water Resources Act*	may require a site inspection prior to issuing permit; allows cutting by permit for expansion or establishment of a use permitted by zoning by-laws if a forestry consultant confirms there is no alternative to the destruction of trees	not specified
Cambridge, City of **124-18 (2018)**	private trees with dbh > or equal to 20 cm dbh	noted but amount not specified	trees in woodlands (which is governed by the Region); trees located on rooftop gardens, interior courtyards, solariums or nurseries	where the owner intends to construct buildings on a single lot, the owner may injure or destroy one tree if it is located with 10 m of any exterior wall of building to be constructed or two or more trees within 10 m of the exterior wall if the owner has made a monetary contribution to the Replacement Tree Planting Fund	not specified
Kingston, City of **2018-15 (2018)**	all trees +15 cm dbh; trees protected on the *Endangered Species Act* or *Species at Risk Act*; all trees classified as a "Distinctive Tree"; all trees in Significant Woodlands, Environmental Protection Areas and Open Space; all trees on municipal property; all tree removals related to construction of a renewable energy project	1 to 5 tree - $97.50; 6 to 15 trees - $195; >15 trees $389.75	Ash trees (*Fraxinus sp.*); trees likely to cause damage to load-bearing walls; tree within a building or structure, a solarium, rooftop garden or interior courtyard; trees within 15 m of a proposed building or structure (including driveway and access routes) that is permitted by the zoning by-law and there is no reasonable alternative; trees part of a cultivated orchard, tree farm or plant nursery; trees apart of a cemetery or golf course	other exemptions that apply only to urban areas include trees located within the limits of any lot that permits a residential use and is occupied by a Residential Unit that was constructed prior to the passage of this By-Law, and the trees within the limits of any lot that permits a residential use and was created by way of a registered plan of subdivision, consent, part lot control, or a registered plan of condominium- an EIA will need to be completed to the satisfaction of the city for the destruction or injury of trees within an Environmental Protection Area or Significant Woodland	not specified

Municipal Bylaw (Date of Enactment)	Scope	Permit Fees	Notable Exemptions	Other Notable Clauses	Procedure for Boundary Trees
Kitchener, City of **Chapter 692 (2010)**	all trees within the municipal boundary >10 cm dbh	noted but amount not specified	trees on land less that 0.405 ha; trees with 5 m of building; trees within a building envelope with a building permit; trees less than 10 cm dbh	none	not specified
London, City of **C.P.-1515-228 (2017)**	applies to trees in designated Environmental Protection Areas ('environmental review" areas and "open space"); Distinctive Trees	Distinctive Tree: 100$/tree, 1 to 3 trees in an Tree Protection Area: < 50 cm dbh $75/tree and >50 cm dbh $100/tree, 4+ trees in Tree Protection Area: < 50 cm dbh $75/tree and >50 cm dbh $100/tree, up to a maximum of $1000	trees located in a building, solarium, rooftop garden or interior courtyards; trees located in an actively managed, cultivated orchard, tree farm or plant nursery and is destroyed for purpose in which it was planted; trees that need to be cleared to remediate contaminated soil; trees likely to cause structural damage	must provide detailed site plan prior to cutting followed by site inspection to verify marking	if a Boundary Tree is a Distinctive Tree or is in a Tree Protection Area, the Applicant must provide the written consent of the other Landowner or Landowners to the application where a Tree is within a Tree Protection Area or where a Distinctive Tree is a Boundary Tree between City Property and private property, the City may issue a permit
Markham, Town of **2017-30 (2017)**	trees 20 cm dbh or greater; does not apply to "woodlands" (>1 ha) or "woodlots" 0.2 ha - 1 ha	$200 for first tree, $100 for each additional tree, to a maximum of $5000, tree management plan review fee $200	trees located on a raised podium, rooftop gardens (excluding structures below grade), solariums or indoor courtyards; trees located in a cultivated orchard, tree farm or plant nursery and is maintained for sale; trees likely to cause structural damage; persons owning larger tracts of land used for cemeteries, golf courses, and commercial or institutional uses may file an application for a permit for approval of a tree management plan, and then a permit for the injury or destruction of any individual tree within the plan area shall not be required	permits issued for a tree management plan may require a report from a qualified tree expert in support of the application but is not required as part of the initial permit application process	where any part of a tree is located on an adjacent property, a Permit Application shall include the written permission of the adjacent property owner
Mississauga, City of **254-12 (2012)**	all private property; permit required to remove 3 or more trees +15cm dbh	noted but amount not specified	permit not required for first 2 trees >15 cm dbh/lot/calendar year; for maintenance work or tree pruning; trees on rooftops, interior courtyards, solariums, nurseries or golf courses	permits require drawing/plan; permit required for dead, dying or hazard trees; permit review section includes consideration for development/site plans and Heritage designations for lands or trees	written consent from adjacent property owner if the base of three straddles the property
Oakville, Town of **2017-038 (2017)**	Trees greater than 15 cm dbh; trees required to be retained or planted as a condition of an approved site plan; trees in woodlands >0.5 ha governed by the Region	trees between 15 cm and 24 cm - $50 per tree (max $2500); second tree or any tree over 24 cm - $340/tree, development related: second tree or tree > over 4 cm - $720/tree; fee is not required for not-for-profit organizations or individual(s) facing financial hardship, infested trees, Buckthorn sp. (Rhamnus sp.), trees identified as high risk	trees in rooftop gardens, solariums or interior courtyards; trees on a nursery; to permit the construction of a building or structure, where the removal, injury or destruction is required under a building permit	if a permit is not required (e.g. hazard tree), the owner still must notify the town about the removal	if a tree whose tree trunk, at ground level, straddles or is bisected by the property line of the lot, written consent is required from the adjacent property owner

Municipal Bylaw (Date of Enactment)	Scope	Permit Fees	Notable Exemptions	Other Notable Clauses	Procedure for Boundary Trees
Ottawa, City of **2009-200 (2014)**	trees on private lands in the urban area that are (1) on lots greater than 1 ha, or (2) greater than 50 cm dbh on lots smaller than 1 ha	$100	existing cemetery or golf course; trees removed as part of normal farm practices; pruning is necessary to maintain the health and condition of the tree and is carried out in accordance with good arboricultural practices	none	otherwise the municipal tree by-law applies; Where the trunk of the distinctive tree straddles the boundary of one or more properties, in addition to the requirements of subsection (2), the applicant must provide the written consent of the other property owner or owners to the application
Peterborough, City of **19-042 (2019)**	all trees (>7.5 cm dbh) not governed by the City's Woodland Conservation By-law	not specified in by-law	trees governed by the City's Woodland Conservation By-law; trees < 7.5 cm dbh; trees within a rooftop garden, solarium, nursery or orchard	72 hours written notice is required before injuring or destruction	not specified
Peterborough, City of **17121 (2017)**	all woodlands in city, including plantations >1 ha (designated area), including hazard trees	$300 (fee waived for dead, dying or hazardous trees)	designated areas subject to approved development agreement; orchard; nursery; designated area subject to a Managed Forest Tax Incentive Program	each Woodland and Plantation Woodland will be classified under the Ministry of Natural Resources and Forestry's Ontario Ecological Land Classification for Southern Ontario	in the event that a Woodland straddles the City's boundary, this by-law applies to that portion of the Woodland which is located within the City
Richmond Hill, Town of **41-07 (2007)**	trees 20 cm dbh or greater on private land	$150 for first tree plus $50 for each additional tree to a maximum of $400 - fee may be waved it applicant demonstrates they are living below the low-income cut-off	trees in woodlots governed by the region	no permits issued for inadequate protection of vistas, ecological systems, flood or erosion control	see definition of ownership
Toronto, City of **Ch. 813 (2015)**	all trees +30 cm dbh; all trees in specified areas	$100/tree for non-construction related tree removal; $300/tree for construction-related removal (exemptions for certain housing non-profits and low-income individuals)	"terminally" diseased trees; trees covered under the ravine protection bylaw	no permits issued for heritage trees, healthy tree cutting without satisfactory replanting plan or inadequate protection of vistas, ESAs, natural land forms, ecological system, flood or erosion control; after submission of complete application, City provides sign to post for 14 days to give opportunity for objections to be sent in; report including input from public with recommendation submitted to Council, who can reject or accept with conditions	see definition of ownership
Vaughan, City of **185-2007 (2007)**	trees >20 cm dbh on private lands	noted but amount not specified	None	no permits issued for inadequate protection of vistas, ESAs, natural land forms, ecological system, flood or erosion control; the Manager may provide relief from the requirements of these tree protection measures or require tree protection measures above and beyond the tree protection measures prescribed in this by-law having regard to the variety and location of the tree and any circumstances surrounding the site alteration that may pose a particular hazard to the tree	written consent from adjacent property owner if the base of three straddles the property
Halton, Region of **121-05 (2006)**	applies to two types of land and property owners: woodlots between 0.5 ha and 1 ha upon delegation to each municipality, woodlands >1 ha and property is partially or entirely	No permit fees OR Special Council Permit: $500	harvested wood product must not exceed 24 m^3/yr	the removal of Trees without a permit within Woodlands shall not have the effect of reducing the density of trees below those required to meet the definition of a Woodland	not specified

Municipal Bylaw (Date of Enactment)	Scope	Permit Fees	Notable Exemptions	Other Notable Clauses	Procedure for Boundary Trees
	within the Regional Greenlands system				
Waterloo Region **08-026 (2008)**	>5 trees/ha/year woodlands >1 ha	noted but amount not specified	when a building permit has been issued	Various types of permits: Good Forestry Practices Permit, Diameter Limit/Basal Area Permit and woodland removal permits, Schedule A lists "Protected Tree Species"	not specified
York Region **TR-0004-2005-036 (2013)**	woodlots between 0.2 ha and 1 ha upon delegation of each municipality, woodlands >1 ha,	Good Forestry Practices permit: $50, Harvest Permit: $250, Special Permit: $500 or $250	up to 6 cords/yr, with no more than 3 cord/yr of Eastern White Cedar; building permit has been issued; removal of trees to maintain or build a property fence	two different permits: Good Forestry Practice Permits and Special Permits	not specified

Appendix E

Overview of Private Woodland and Tree Bylaws in Peel

Appendix E

Overview of Private Woodland and Tree Bylaws in Peel

Town of Caledon Woodland Conservation Bylaw 2004-54

The Town of Caledon's Woodland Conservation Bylaw (Bylaw 2004-54) applies to all trees within a woodland where a woodland is defined as:

> *different trees, shrubs, ground vegetation and soil complexes that provide habitat for plants and animals which is a minimum of 0.5 hectares (1.2 acres) in area and contains at least: (i) 370 trees measuring more than 5 centimetres dbh; or (ii) 250 trees measuring more than 12 centimetres dbh; or*
> *(iii) 125 trees measuring more than 20 centimetres dbh;*
> *but shall not include:*
> *(iv) an orchard that is being actively managed and harvested for the purposes for which it was planted;*
> *(v) a Christmas tree farm that is being actively managed and harvested for the purposes for which it was planted;*
> *(vi) a horticultural nursery that is being actively managed and harvested for the purposes for which it was planted;*
> *(vii) or a landscaped area being an area containing trees planted for aesthetic and not forestry purposes;*
> *(viii) a nut tree farm;*
> *(ix) trees planted as a feedstock for ethanol, pulp or veneer;*
> *(x) a fence row.*

In addition to the exemptions required by the *Municipal Act*, Caledon's bylaw also exempts:

- trees destroyed due to emergency work authorized by the Chief Building Official or the Director Infrastructure
- removal of up to 20 trees for personal use in a 12-month period, and
- the destruction of trees on lands under a forest management plan that has been submitted 30 days prior to destruction.

After receiving an application, the Director may consult with other agencies (such as a conservation authority) to determine if a permit should be granted, and if so, what conditions will be imposed. If the proposed removal is in accordance with good forestry practices, would permit expansion of a use permitted by the Town's Official Plan and there is no other alternative option, the destruction of trees is required for expansion of an existing agricultural operation, and the destruction will not occur in an Environmental Policy Area, then the applicant will receive a permit within 45 days. Once the destruction of trees occurs, the owner shall notify the director in writing.

A permit will not be granted if:

- a required report and fee are not provided
- proposed tree removal occurs on land that is subject to an application for an approval under the *Planning Act* and not yet approved or on lands within the Niagara Escarpment Plan and has not yet received approval from the Niagara Escarpment Commissioner
- the tree is an Endangered or Threatened species under the *Endangered Species Act*
- flood or erosion control, or the ecological integrity will be negatively impacted, or
- the destruction of trees will not occur in accordance with good forestry practices.

Conditions of the permit may include the species, size, number and location of replacement trees to be planted by the applicant; the date by which any replacement trees are to be planted, and/or the maintenance and care of any replacement trees.

City of Brampton Woodlot Conservation Bylaw 316-2012

Brampton's Woodlot Conservation Bylaw (316-2012) forbids any injury to trees in woodlots in the City of Brampton until a permit is granted, with the exception of hazardous trees, injury to a tree necessary for emergency work or as part of agricultural practice or activities exempted by the *Municipal Act* (2001). The City of Brampton defines a woodlot as:

> *land at least 0.2 hectares in area with at least: i. 200 trees, of any size, per 0.2 hectare; ii. 150 trees, measuring over five (5) centimetres DBH, per 0.2 hectare; iii. 100 trees, measuring over twelve (12) centimetres DBH, per 0.2 hectare; or iv. 50 trees, measuring over twenty (20) centimetres DBH, per 0.2 hectare; and includes Woodlands as defined in the Act, but does not include a cultivated fruit or nut orchard or plantation established and maintained for the purpose of producing Christmas trees.*

A landowner may request a specific exemption to this this bylaw from Council at least six weeks prior to activity. Such a request will either be granted with or without conditions, or denied based on the City's natural heritage and environmental policies, or any other applicable policies. Conditions may include: having regard for the manner and timing of the tree injury; the qualifications of the person doing the work; the size, species, number and location of replacement trees to be planted; and the mitigation measures put in place for the natural environment and/or trees on adjacent lands.

To request an exemption, the land owner must fill out a request form and provide the prescribed fee. The landowner and owners of abutting lands must be notified of the exemption at least seven days prior to the consideration by Council, and the outcome of the decision will be provided in writing.

For a standard permit application (and the prescribed fee), a permit will be issued provided that the applicant demonstrates that:

- the injury will be conducted in accordance with good forestry practices as prescribed in a Silvicultural Prescription prepared by a member in good standing of the Ontario Professional Foresters Association
- the trees to be injured will be marked in accordance to Silvicultural Prescription by a Certified Tree Marker
- the tree is injured in a manner prescribed by the permit application
- the date(s) and times(s), and the person authorized to do the work of the tree injury have been provided to the City
- the species, size, number and location of replacement trees to be planted have been identified to the City's satisfaction, and
- measures to mitigate the direct and indirect effects on the natural environment from the injuring of trees shall be implemented to the City's satisfaction.

The Commissioner can implement conditions to the permit to ensure the applicant injures a tree in conformance with the demonstrations listed above, or any other conditions relevant to the injuring of a tree. Once an application for a permit has been received, the owner shall allow an officer to enter their property to conduct inspections as part of consideration of the permit, as well as prior to, during and after the proposed activity.

City of Brampton Tree Preservation Bylaw 317-2012

Brampton's "Tree Preservation Bylaw" (317-2012) regulates trees of at least 30 cm dbh on private lands throughout the City. Exemptions to this bylaw include:

- trees in woodlots protected under Bylaw 316-2012 (as described in the preceding section)
- hazardous trees
- trees within 2 m of a building
- trees located on rooftop gardens, interior courtyards, solariums, nurseries or orchards
- injury to a tree necessary for emergency work
- trees exempted by Council pursuant to the provisions of this bylaw or
- activities exempted by Subsection 135 (12) of the *Municipal Act* (2001).

A landowner may request a specific exemption to this this bylaw from Council at least six weeks prior to planned injury to a tree, who will then either grant the exemption requested, grant it with certain conditions or deny the exemption depending on the applicability of the City's natural heritage and environmental policies, and other applicable policies. To request an exemption, the landowner must fill out a request form and provide the prescribed fee.

A landowner may request a specific exemption to this this bylaw from Council at least six weeks prior to activity. Such a request will either be granted with or without conditions, or denied based on the City's natural heritage and environmental policies, or any other applicable policies. Conditions may include: having regard for the manner and timing of the tree injury; the qualifications of the person doing the work; the size, species, number and

location of replacement trees to be planted; and the mitigation measures put in place for the natural environment and/or trees on adjacent lands.

The Commissioner can implement conditions to the permit to ensure the applicant injures a tree in conformance with the demonstrations listed above, or any other conditions relevant to the injuring of a tree. Once an application for a permit has been received, the owner shall allow an officer to enter their property to conduct inspections as part of consideration of the permit, as well as prior to, during and after the proposed activity.

City of Mississauga Private Tree Protection Bylaw 254-12

The City's Private Tree Protection Bylaw (254-12) was first approved in 2001 and last amended Mar. 1, 2013. The Private Tree Protection bylaw has always regulated the injury or destruction of trees on private property in the City. Key changes in the recent amendment making the bylaw more restrictive include:

- regulation of three or more trees with diameters greater than 15 cm per calendar year (as opposed to five) (still allowing for the removal of up to two potentially large, mature trees without a permit each year)
- requirements for replacement trees to be planted for each healthy tree removed (depending on the diameter of the one removed) or that a contribution be made to the Corporate Replacement Tree Planting Fund equivalent to the replacement costs, and
- increases in the penalties for bylaw infraction to the maximum allowable under the *Municipal Act*.

Notably prohibition under this bylaw include that heritage trees cannot be injured or destroyed unless approval under the requirements of the *Ontario Heritage Act* is obtained.

Exemptions beyond those required by the *Municipal Act*, include:

- trees injured or destroyed for emergency works
- for the purpose of pruning, if they are located on a rooftop garden, interior courtyard, solarium, in a nursery or a golf course
- where the removal of a tree is specifically required in an order made under the City's Property Standards Bylaw, and
- where an owner is required to comply with the requirements of a Province of Ontario forest management plan that specifically encompasses the owner's lot.

The City may issue a permit for the following reasons:

- the tree is dead, dying or considered a hazard
- the tree conflicts with a proposed building permit plan or expansion of parking areas that complies with the zoning of the land or a proposed pool enclosure
- there will be no negative impact on flood or erosion control, or slope stability

- the tree is located on a lot is designated under the Ontario *Heritage Act*, but the City's Heritage Coordinator has provided a report stating that the tree is not relevant to the heritage designation of the lot, or if it is, a written approval from the City's Heritage Advisory Committee, or
- if the injury or destruction of the tree is otherwise acceptable by the Commissioner.

Where there is a condition for replacement trees, the Commissioner may require the following to their satisfaction:

- the replacement tree(s) be located on the same lot in a location, number, size and/or species
- a replanting plan be filed
- a written undertaking by the Owner to carry out the replacement planting
- monies or a letter of credit to cover the costs of the replacement trees, and the maintenance of the trees for a period of up to two years, or
- payment of each replacement tree not replanted on the owner's lot into the City's Replacement Tree Planting Fund.

A person who has had their permit application under this bylaw rejected has thirty days to appeal the refusal to the City of Mississauga Planning and Development Committee (PDC). Through the appeal, the PDC may uphold, reverse or vary the Commissioner's decisions and may subject the appellant to conditions that PDC deems appropriate. Council will may uphold or reverse PDC's decision, and their decision will be final.

City of Mississauga Street Trees Bylaw 91-75

Mississauga Bylaw 91-75 regulates the injury and destruction of trees located in City-owned rights-of-way and other publicly owned lands. This older bylaw is currently being revised by City staff to bring it into accordance with the current legislative framework and practices and should be completed shortly. Once developed, it will extend the current bylaw to include all trees on City lands (not just on boulevards) and, among other things, will be addressing the treatment of boundary trees, as this can become an issue when the tree is shared between the City and a private landowner. This bylaw will improve the City's ability to prevent and/ or stop works which may result in the injury or removal of City-owned trees, and fine parties responsible for such damages.

City of Mississauga Parks Bylaw 186-05

In addition to "tree-specific" bylaws, the City of Mississauga has a Parks Bylaw (186-05), which prohibits persons from engaging *"in any activity that may cause injury or damage to any… tree"* and from planting, pruning, climbing, removing, damaging or defacing any trees in City parks. In this bylaw, a tree is defined as "*a tree, shrub or any form of vegetation*" while a woodland is "*forested land covered with woody vegetation*."

For this bylaw, exemptions include staff ambulance and police services who are providing emergency services or enforcement activities within a park. It also includes the City, its

vehicles, and its employees or agents acting within the scope of their duties as employees or agents of the City.

This bylaw does not allow permit holders, or anyone else, to plant, prune, remove or damage any plant, shrub, flower, flowerbed, bush, sod, grass, or any other vegetation unless otherwise authorized by the Commissioner. It also states that a person may not plant, prune, climb, remove, damage, or deface any tree, tree roots or parts of a tree.

If a permit holder damages any park property, including trees, they may be ordered to repair/compensate for the damage to the satisfaction of the City at the expense of the permit holder and/or provide studies or documentation (as deemed appropriate by the park staff) to determine the extent of the damage before repairing. Similar to the private tree bylaw for Mississauga discussed above, if the permit holder fails to comply with an order, any securities deposited as part of the permit application will be used to carry out he work in the order, and if these securities do not cover the full extent of the work, the permit holder will be charged in the form of property taxes.

Within this bylaw, any person who is charged with an offence under this bylaw is liable to a fine of not more than $15,000 on a first conviction and on any subsequent conviction, a fine of not more than $30,000.

City of Mississauga Encroachment Bylaw 54-07

Mississauga's Encroachment Bylaw (57-04) was last amended in 2011, is intended to prohibit any type of encroachment on to City lands unless specifically approved by the City or other public landowners (e.g., the Conservation Authorities). This bylaw has been used effectively to prevent and require removal of any structures or changes in land use that extend from private property into adjacent City-owned natural areas, most of which are wooded. Since bylaw enactment, more than 4 ha have been effectively reclaimed.

There are not many other municipalities with such bylaws, and fewer that actively enforce them as in Mississauga. The City has recently enhanced its enforcement program with assistance from the conservation authorities so that it includes an education component and more systematic tracking of the types and severity of encroachments.

Appendix F

Forest and Tree Conservation By-law Templates

(from the Forest Conservation By-law Committee, Interim Group of Lower and Single Tier Municipal Staff, and Ministry of Natural Resources, 2013)

Forest Conservation By-law Template

Using only Good Forestry Practices

January 14, 2013

Introduction:

This template has been developed for regulating treatment of Trees in forests, generally by upper tier municipalities (Counties or Regions). This template should be read in conjunction with the Tree By-law Information Package. The *Municipal Act* allows upper tier municipalities to protect Woodlands 1 ha in size and over (or smaller if delegated from lower tier). This template may also be used by a lower tier municipality or township for Treed areas less than 1 ha in size, or for larger Woodlands if the authority for the protection of Woodlands has been delegated from the upper tier.

Single tier municipalities may prohibit or regulate the Destruction or injuring of Trees both inside and outside of Woodlands. A separate template entitled "*Tree Conservation By-Law Template*" has been prepared for use by municipalities interested in prohibiting or regulating the Destruction or Injuring of Trees not in woodlands on private property under the Municipal Act**.**

In this template the regular text is suggested wording for a Tree / Forest Conservation By-law and the shaded boxes provide advice, explanations and suggestions for consideration.

This template provides for the provision of Harvesting using only Good Forestry Practices. A separate template is available that provides for Tree Harvesting through either Good Forestry Practices or through circumference limits (previously called diameter limits).

The Forest Conservation By-law Committee discourages the continued use of the circumference limit approach in Tree / Forest By-laws. Several municipalities are no longer providing this option. Circumference limit cutting is not a good forest management practice as it removes the largest and best Trees without regard for what should be retained for the future health of the forest. Circumference limit Harvesting is also not recommended by the Ontario Ministry of Natural Resources Silvicultural Guide to Managing Southern Ontario Forests. Regulation of Harvesting by Tree circumference or diameter has traditionally been used in earlier by-laws as an easily enforceable approach that ensured forest cover remained on the landscape. With the increased awareness of the importance of healthy forests for the long-term future of the environment and the economy, the alternate application of thoughtful Good Forestry Practices has become a critical tool.

However, some municipalities may wish to include the Circumference limit option in their by-law as they develop capacity towards acceptance and/or implementation of Good Forestry Practices within their jurisdiction.

This template and the associated Tree By-law Information Package has been developed by the Forest Conservation By-law Committee and the Ministry of Natural Resources and is provided with the intention to assist in the development and upgrading of Tree By-laws and to encourage more consistent format between Tree By-laws making it easier to adhere to across municipal boundaries.

The information is for discussion purposes only. Although this template has been reviewed by a licensed paralegal, it has not been otherwise legally verified. Neither the Committee, its members, the Ministry of Natural Resources, nor the counties and municipalities participating on the Committee provide any representation, warranty or guarantee of any kind as to the suitability, accuracy or validity, legal or otherwise, of the document, the information contained therein or the use of either. Any by-laws or action based on the use of this document should be undertaken only after consultation with municipal legal counsel.

Template

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ACKNOWLEDGEMENTS

The following are members of the Forest Conservation By-law Committee and have made substantial contributions to this document:

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Also special thanks to Paul Dray of Paul Dray Legal Services for his review of this document.

Template

FOREST CONSERVATION BY-LAW NO. [ ]

To prohibit or regulate the Harvesting of Trees in Woodlands in the [Name of County/Municipality]

WHEREAS s.135(2) of the *Municipal Act*, 2001, S.O. 2001, c. 25, as amended, hereinafter referred to as the Act permits the enactment of a By-law by the Council of [Name of County/Municipality] to prohibit or regulate the Harvesting, Destruction or Injuring of Trees in Woodlands;

The power to "*prohibit* or *regulate"* means that a county/municipality has the ability to promote Good Forestry Practices and prohibit activities known to be detrimental to Woodlands. The *Municipal Act* requires by-laws to have regard to Good Forestry Practices as defined in the *Forestry Act*.

Note that the *Municipal Act* uses the terms "*destruction or injuring*", however, some municipalities prefer to add the term "*Harvesting*" to their by-law, as Simcoe County has done. This may depend on the legal advice that you receive. Using the term destruction or injuring has caused some communities concern. This template uses the term Harvest but includes Injure and Destroy within the definition.

AND WHEREAS s.135(7) of the Act provides that the By-law may require that a Permit be obtained to Harvest, Destroy or Injure Trees and impose conditions on a Permit, including conditions relating to the manner in which Harvesting, Destruction or Injuring occurs and the qualification of persons authorized to Harvest Trees;

AND WHEREAS Council has determined that it is desirable to enact such a By-law for the purpose(s) of:

This section is optional but provides the Council an opportunity to state the purpose and intent of the by-law which may help to increase the public's understanding and support for the by-law. The following are examples which may be included. Be thoughtful as you want to ensure that the by-law is within the jurisdiction of Council and consistent with proper municipal purposes.

- achieve the objectives of the Official Plan by sustaining a healthy natural environment;
- conserve and improve the Woodlands through Good Forestry Practices;
- promote Good Forestry Practices that sustain healthy Woodlands;
- ensure a sustainable local wood supply to sustain the local forest economy (especially as the bioeconomy grows);
- regulate and control the removal, maintenance and protection of Trees;
- protect, promote and enhance the value of Woodlands (e.g. economic, aesthetic other.) ;
- contribute to human health and quality of life through the maintenance of Woodlands cover;
- protect wildlife habitat and the ecosystem services necessary to maintain our community's quality of life;
- enhance biodiversity and forest resilence to help our community adapt to climate change

Now, therefore, the Council of [County/Municipality] HEREBY ENACTS as follows:

1. DEFINITIONS

Where definitions appear in the *Municipal Act*, they do not need to be repeated in the by-law. However, they should be included for clarity. Terms from other legislation such as "*Good Forestry Practices*" from the *Forestry Act* should also be defined in the by-law.

The by-law must define the terms that will be used in the by-law, its forms and its schedules. This section should be carefully drafted to ensure that the by-law can be enforced. Use plain language whenever possible.

Technical terms that are defined should be capitalized throughout the by-law.

All measurements within the by-law should be in metric. A separate sheet of conversions could be prepared for information purposes. Be aware that conversions have been challenged.

In this By-law:

(a) "Building Permit" means a Building Permit issued under the *Building Code Act,* 1992, S.O. 1992, c. 23, as amended.

(b) "Clerk" means the Clerk of the (Name of County/Municipality) or his/her designate.

(c) "Council" means the Council of [Name of County/Municipality].

(d) "Destroy" means any action which causes or results in the irreversible injury or death of a Tree.

"Destroy" and *"Injure"* are terms used in the *Municipal Act.*

"Destroy and Injure" has been defined in some by-laws, however defining these terms may limit enforcability of parts of the by-law. It is possible that other actions may Destroy or Injure Trees that do not fall within the definition and as a result it is possible for an enforcement proceeding to fail. It is recommended not to define these terms and instead leave the definition to the discretion of the By-law Enforcement Officer. If a county/municpality wishes to use other terms, refer back to the original terms of Destroy and Injure.

In this template Harvest has been defined to include "Destroy" or "Injure".

(e) "Good Forestry Practices" means the proper implementation of Harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity and health and the aesthetics and recreational opportunities of the landscape;

This definition is from the *Forestry Act.* The *Municipal Act* refers to Good Forestry Practices as defined in the *Forestry Act.* Always use the plural term Good Forestry Practices, to be consistent with the *Forestry Act.*

Understanding the term 'Good Forestry Practices' has been somewhat challenging in the past. However, several documents now exist to provide guidance, such as the applicable Provincial Guidelines:

A Silvicultural Guide to Managing Southern Ontario Forests,
Silvicultural Guide for the Tolerant Hardwood Forest in Ontario,
Ontario Tree Marking Guide and
A Silvicultural Guide for the Great Lakes – St. Lawrence Conifer Forest in Ontario

And Bulletins # 1 and #10, from the Ontario Professional Foresters Association.

(f) "Harvest" means the injury or destruction of a Tree through cutting or other mechanized means;

"Destroy" and "Injure" are the terms used in the *Municipal Act.*

However, these terms are often considered an inaccurate representation of the activity and sometimes even considered offensive. The use of the term 'Harvesting' is often more acceptable to the community developing the by-law. If the county/municipality wishes to return to the terms 'Destroy or Injure' due to legal advice, many of the references to Harvesting within this template may need to be replaced. Application forms could continue to use the term "Harvesting".

It is recommended that the terms be included in the by-law as part of the definition to Harvest.

(g) "Injure" means any action that causes physical, biological or chemical damage to a Tree and does not include pruning or removing branches for maintenance purposes.

(h) "Normal Farm Practice" means a practice that is recognized by the Normal Farm Practices Board which is conducted in a manner consistent with proper and acceptable customs and standards, as established and followed by similar agricultural operations under similar cirumstances, or makes use of innovative technology in a manner consistent with proper advanced farm management practices.

Normal Fram Practices are recognized by the Normal Farm Practices Board under the authority of the Farming and Food Production Protection Act (FFPPA). For more information please refer to
www.omafra.gov.on.ca/english/engineer/nfppb/nfppb.htm

In specific cases where the Normal Farm Practices Protection Board rules that a particular agricultural practice is a "Normal Farm Practice", this practice is exempt from the Tree / Forest Conservation By-law for that property and practice.

The Normal Farm Practices Protection Board (NFPPB) is the adjudicative agency established by the *Farming and Food Protection Act, 1998* (FFPPA) to determine what is or is not a Normal Farm Practice. In arriving at a decision in each case, the Board takes several factors into consideration as it seeks to balance the needs of the agricultural community with provincial health, safety and environmental concerns. This is especially relevant in cases involving municipal by-laws. The Board is required to consider the purpose of the by-law, the effect of the farm practice on adjoining lands and neighbours, and whether the by-law reflects a provincial interest under any other piece of legislation or provincial policy statement. Consequently, there is no definitive list of Normal Farm Practice. **A practice may be ruled as a Normal Farm Practice at a particular location under a particular set of circumstances; the same practice could be ruled as not a Normal Farm Practice at a different location under a different set of circumstances.** A description of Normal Farm Practice can be found at the OMAFRA website at: http://www.omafra.gov.on.ca/english/engineer/nfppb/guide.htm#1.

In situations requiring clarity – where an exemption may be questionned by a municipality - the applicant or the municipality can request consideration by the Normal Farm Practices Protection Board (NFPPB), as the practice may be considered Normal Farm Practice in this specific instance.

Any of the parties in a hearing of the Normal Farm Practices Protection Board can appeal the board's decision regarding "Normal Farm Practice". The appeal must be made to Divisional Court within 30 days of the decision. The appeal must be based on a question of fact, law or jurisdiction.

Note also that an "agricultural operation" includes growing Trees, not only in the FFPPA but also in the *Nutrient Management Act, 2002*, (NMA) and its General Regulation (267/03). The NMA is referenced in subs. 2(1.1) of FFPPA, which states that "a practice that is inconsistent with a regulation made under the [NMA] is not a Normal Farm Practice." In the NMA reg 267/03 "agricultural crops" includes Trees and there are various NMA requirements e.g.: for vegetated buffer zones (including Trees), or vegetated filter strip systems, as well as re anaerobic digesters.

(i) "Officer" means a Police Officer, a Municipal Law Enforcement Officer or other person appointed by Council for the administration and enforcement of this By-law.

(j) "Order" means a Work Order or an Order to Discontinue an Activity.

(k) "Owner" means a person having any right, title, interest or equity in land or any such person's authorized representative and includes the person for the time being managing or receiving the rent of the land and includes a lessee or occupant of the land.

(l) "Own Use" means any use by the Owner that does not include a sale, exchange or other disposition of Trees Harvested.

(m) "Permit" means a permit issued pursuant to this By-law by the (insert County or Municipality).

(n) "Qualified OPFA Member" means a Registered Professional Foresters or Associate Member of the Ontario Professional Foresters Association under the *Professional Foresters Act* 2000, c.18, as amended, certified to practice professional forestry, unless a suspension, term, condition or limitation of certification applies which would restrict the Member from carrying out responsibilities under this By-law.

Any suspension, terms and conditions and/or limitations of a member's certification are publicly available and can be obtained from the Ontario Professsional Foresters Association. A Temporary Member is an RPF from another provincial jurisdiction who has been temporarily certified by OPFA. All Associate and Temporary Members have terms, conditions and/or limitation applied to their certification.

(o) "Qualified Tree Marker" means:

i) An individual who is currently certified through the Ontario Ministry of Natural Resources Certified Tree Marker Program; or

ii) A Qualified OPFA Member qualified to do tree marking.

(p) "Silvicultural Prescription" means the site specific operational plan, signed and sealed by a Qualified OPFA Member (unless otherwise exempted under the *Professional Foresters Act),* that describes the existing forest conditions and the forest management objectives for an area, and which prescribes the methods for Harvesting the existing forest stand and a series of silvicultural treatments that will be carried out to establish a free-growing stand in a manner that accommodates other resource values as identified;

(q) "Tree" means any species of woody perennial plant, including its root system, which has reached or can reach a height of at least 4.5 meters at physiological maturity.

Some by-laws have added "provided that where multiple stems grow from the same root system, the number of trees shall be the number of stems that can be counted at a point of measurement 1.37 m from the ground;

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(r) "Woodlands" means land with at least:

(i) 1000 Trees, of any size, per hectare; or

(ii) 750 Trees, measuring over five (5) centimetres in Diameter, per hectare; or

(iii) 500 Trees, measuring over twelve (12) centimetres in Diameter, per hectare; or

(iv) 250 Trees, measuring over twenty (20) centimetres in Diameter, per hectare; or

but does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas Trees.

The definition of Woodlands in the *Municipal Act* is "Woodlands as defined in the *Forestry Act* that are one hectare or more in area." This definition must be used. However, some counties/municipalities have further elaborated on this definition. For instance, some Woodlands definitions may exclude:

- Fencerows/hedgerows;
- plantations established for producing nursery stock unless the plantation has not been managed for its intended purpose for a period of 15 years or more; or
- regrowth of early successional trees less than 15 years old on temporarily fallow agricultural fields intended to be used again as part of an agricultural operation.

Note that some by-laws have explicitly stated or been interpreted not to limit Woodlands by property boundaries. Halton Region has stated this as follows:

"For the purpose of this By-law, the boundary of Woodland shall be defined by the ecological limit of the Woodland and not by property boundaries. Where a potential Woodland is dissected by a road or path not wider than 20m or by a natural feature such as a creek, the boundary of the Woodland shall be deemed to cross the road, path or natural feature, but the area of the Woodland shall be calculated exclusive of the area of the road, path or natural feature."

DEFINING WOODLAND AREAS LESS THAN 1 HECTARE

Some municipalities are developing a separate definition for areas smaller than the Municipal Act definition of "Woodlands" which would include "treed" areas less than 1.0 hectare.

eg*: "Woodlots"* for the purpose of this By-law, means land at least 0.2 hectares in area and no greater than 1 hectare in area, with at least:

(i) 200 trees, of any size, per 0.2 hectare; or
(ii) 150 trees, measuring over five (5) centimetres in diameter at DBH, per 0.2 hectare; or
(iii) 100 trees, measuring over twelve (12) centimetres, in diameter at DBH, per 0.2 hectare; or,
(iv) 50 trees, measuring over twenty (20) centimetres, in diameter at DBH, per 0.2 hectare;

but does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas Trees.

It should be noted that if such is adopted the "whereas" preambles and all appropriate sections which refer to "Woodlands" may need to be edited appropriately to recognize this definition.

WOODLANDS / MUNICIPAL AUTHORITY

According to the Municipal Act, the power to pass a by-law respecting the destruction or injuring of trees within or outside Woodlands may be delegated between upper and lower tier municipalities with mutual agreement.

And where a lower tier would want an upper tier to enforce a by-law that would include "treed" areas less than 1.0 hectare, such can also be delegated through a by-law authorizing such.

In instances where an upper tier municipality would want to delegate the authority to a lower tier, such maybe undertaken by a by-law authorizing such.

2. APPLICATION

This By-law applies to Woodlands that are **XX** hectare or more in area in the **(County/ Municipality of XX)**.

The *Municipal Act* defines Woodlands as Woodlands defined in the *Forestry Act* that are one hectare or more in area. The regulated area may be smaller if delegated from the lower tier (e.g, 0.2 hectare in York Region) and such is defined and applicable sections reflect inclusion of these defined smaller areas.

Jurisdictions in eastern and northern Ontario may prefer to regulate only larger Woodlands. For instance Haliburton regulates Woodlands 4 hectares and larger.

3. EXEMPTIONS

This section includes two types of exemptions:

- mandatory exemptions found in the *Municipal Act* and
- exemptions developed and granted by the county/municipality.

The following are the LEGISLATED EXEMPTIONS that are set out in the Municipal Act and cannot be changed by by-law. Although **these do not have to be written into the by-law**, it is preferable to have them re-stated to ensure clarity.

This By-law does not apply to;

(a) activities or matters undertaken or authorized by a municipality or a local board of a municipality; or

(b) activities or matters undertaken under a licence issued under the *Crown Forestry Sustainability Act,* 1994; or

This would include Trees on private land that the Province has retained timber rights to.

(c) the Injuring or Destruction of Trees by a person licensed under the *Surveyors Act* to engage in the practice of cadastral surveying or his or her agent, while making a survey; or

(d) the Injuring or Destruction of Trees imposed after December 31, 2002 as a condition to the approval of a site plan, a plan of subdivision or a consent under section 41, 51, or 53, respectively, of the *Planning Act* or as a requirement of a site plan agreement or subdivison agreement entered into under those sections; or

(e) the Injuring or Destruction of Trees imposed after December 31, 2002 as a condition to a development Permit authorized by regulation made under section 70.2 of the *Planning Act* or as a requirement of an agreement entered into under the regulation; or

In reference to sections 3 d & e above, consider your own internal policies to ensure issues such as retention (Tree Preservation or Conservation) or compensation is addressed during pre-consultation of planning applications.

(f) the Injuring or Destruction of Trees by a transmitter or distributor, as those terms are defined in Section 2 of the *Electricity Act, 1998*, for the purpose of constructing and maintaining a transmission system or a distribution system, as those terms as defined in that Section; or

(g) the Injuring or Destruction of Trees undertaken on land described in a licence for a pit or quarry or a permit for a wayside pit or wayside quarry issued under the *Aggregate Resources Act*; or

(h) the Injuring or Destruction of Trees undertaken on land in order to lawfully establish and operate or enlarge any pit or quarry on land;

i. that has not been designated under the *Aggregate Resources Act* or a predecessor of that Act; and

ii. on which a pit or quarry is a permitted land use under a By-law passed under section 34 of the *Planning Act; or*

The following are examples of OPTIONAL EXEMPTIONS that can be included at the discretion of the municipality.

(i) the Injuring or Destruction of Trees undertaken as Normal Farm Practices, as ruled by the Normal Farm Practices Protection Board for the subject land.

(j) the Injuring or Destruction of Trees that is required in order to erect any building, structure or thing in respect of which a Building Permit has been issued and has taken into consideration the protection of Trees surrounding the structure or work within the building envelope, provided that no Tree is Harvested that is located more than 15 metres from the outer edge of the building, structure or thing; or

"Thing" could be a septic bed. Using a septic bed as an example, 15 meters is suggested. A range between 15 – 25m has been used in other by-laws – in development of such it is advisable to consult with your local building department.

(k) the Injuring or Destruction of Trees that is reasonably required in order to install and provide utilities to the construction or use of the building, structure or thing in respect of which a Building Permit has been issued; or

(l) The Injuring or Destruction of Trees that is reasonably required in order to install a single lane driveway for vehicular access to the building, structure or thing in respect of which a Building Permit has been issued; or

(m) the Injuring or Destruction of Trees that is reasonably required in order to install a single non-perforated pipe through Woodlands but without clearing of the Woodlands, to serve as an outlet for a private agricultural tile drainage system on existing crop or pasture land; or

(n) the Injury or Destruction of Trees for the construction, improvement, maintenance or repair of drainage works authorized under the *Drainage Act, R.S.O. 1990, c. D.17*, as amended; or

This exemption should be used with caution. The Drainage Act does not apply to all drains, drainage ditches or swales found on agricultural landscapes. The Act is specific to certain designated drains which are constructed under the authority of the Act. That is, only works (maintenance or construction) as authorized under the Drainage Act would be exempt from the by-laws jurisdiction. People reading this exemption may assume their drainage work is authorized under the Drainage Act when in fact it is not.

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(o) the Harvesting of Trees by the Owner of Woodlands for the Owner's Own Use, provided the Harvesting does not reduce the density of Trees below that which is defined as Woodlands; or

Additional limitations such as the following could be considered:

i) in accordance with Good Forestry Practices; and
ii) the amount of wood Harvested does not exceed 24 cubic meters in volume in any year; or
iii) no more than five Trees per hectare, to a maximum of 30 Trees, are removed within a one-year period.

This exemption is ued by some municipalities, but applicability should be considered.

(p) the Harvesting of Trees where the Trees are Harvested pursuant to a legally binding contract if:

(i) the Owner of the Woodlands has given notice under this By-law; and

(ii) the contract was signed within one year immediately preceding the date on which this By-law was passed; and

(iii) proof of the signed contract and payment in full has been submitted to the Officer and;

the Trees are Harvested in a manner consistent with By-law No _____ .

This is an optional clause that provides for grandfathering of logging contracts negotiated under the terms of the previous Tree / Forest Conservtion By-law.

Items which have also previously been granted exemptions within some jurisdictions:

- **Harvesting diseased or infected trees**

Be cautious about providing an exemption for Harvesting diseased or infected Trees, or trees in poor health. This has been abused in the past. These situations can be dealt with using the Good Forestry Practices Permit. Also, landowners can usually deal with their diseased or infected trees through the personal use exemption.

- **Certified Tree Markers**

We do not recommend providing an exemption for the use of Certified Tree Markers There have been some by-laws that provide an exemption for Harvesting if the Woodlands were marked by a Certified Tree Marker, with the false assumption that this would ensure Good Forestry Practices. Although Certified Tree Markers are trained to mark according to a Silvicultural Prescription, a prescription may not have been prepared. Certified Tree Markers are not necessarily trained in the preparation of Silvicultural Prescriptions.

- **Lands enrolled in the Managed Forest Tax Incentive Program**

It is also not recommended to allow exemptions for Harvesting in Woodlands that are receiving a tax reduction under the Managed Forest Tax Incentive Program (MFTIP). Although this program requires a management plan, having a management plan does not ensure that good forest management practices are carried out at the time of Harvesting.

4. GENERAL PROHIBITION

Offences can be created in any section of the by-law but if you intend to write fines under this by-law it may be preferable to keep them in one area of the by-law.

4.1 No person shall Harvest, Injure, or Destroy, cause or permit to be Harvested, Injured or Destroyed, any Tree in Woodlands:

(a) unless exempted under the provisions of this By-law; or

(b) except in accordance with a valid Permit issued pursuant to the provisions of this By-law.

4.2 No person shall;

(a) fail to comply with an Order issued under this By-law; or

(b) remove or deface an Order that has been posted pursuant to this By-law.

4.3 No person shall contravene, cause or permit the contravention of the terms or conditions of a Permit issued under this By-law.

Some municipalities have incorporated the Endangered Species Act into their by-law. However some legislation or information such as the Endangered Species information may rapidly become out of date and many landowners have not welcomed the Endangered Species Act. It may be in the municipality's best interest to leave other legislation out of their by-law.

Another consideration is how Harvesting is to be done in **Sensitive Natural Areas**.

The requirement of Good Forestry Practices in this template should provide protection for all sensitive areas. This is something the Qualfied OPFA Member should evaluate before deciding to write a prescription. This section is more important to consider in a by-law that permits circumference limit Harvesting where professionals may not be involved.

Areas considered sensitive by the municipality could be listed or shown on a map. A term for such areas would need to be defined in the by-law.

Examples of areas for consideration could include:

- Natural Heritage Systems;
- Environmentally Sensitive Areas;
- Significant Woodlands;
- Provincially Significant Wetlands, or other wetlands;
- areas under the jurisdiction of the Niagara Escarpment Commission;
- any portion of Woodlands located within xx metres of the water's edge of a provincially significant wetland (or other wetland), lake, river, or stream; or
- Provincial or Regional Life Science Areas of Natural and Scientific Interest identified by the Ministry of Natural Resources.

Trees Protected Under the provincial Endangered Species Act

Since there have been regulations and an administrative process already set out for certain endangered tree species, municipalities/cities/towns/townships may wish to consider incorporating this into their Permit review and approval process.

In the application of Good Forestry Practices, the Qualfied OPFA Member should be aware of Trees protected under the Endangered Species Act – it maybe advisable that the Permit application be screened for such species e.g.: Butternut, Eastern Flowering Dogwood, American Chestnut, Kentucky Coffee Tree, Common Hoptree, Red Mulberry, Cherry Birch or Cucumber-tree should they be included in the inventory tally of potential effects. There may be merit in producing as a resource to landowners, OPFA members and the forest industry in general, a locally developed extension note that lists these species and encourages documentation of their locations and health.

For example: For instance if a butternut tree has been determined to be non-retainable by a Designated Butternut Health Assessor, the Officer may consider this in his/her decision to grant the Permit.

However, note that all Butternut trees retainable & non-retainable as well as other provincially protected species must be reported to the OMNR before they are harmed.

5. GOOD FORESTRY PRACTICES PERMIT

5.1 The (County/Municipality) hereby delegates to an Officer the authority to issue a Good Forestry Practices Permit under this By-law, and to impose such terms and conditions in accordance with Good Forestry Practices.

5.2 An application for a Good Forestry Practices Permit shall be submitted at least **XX weeks** prior to the commencement date of Harvesting and shall include the following:

Providing the number of weeks the application should be submitted before Harvesting will occur provides awareness to the applicant that granting of a Permit will take some time.

(a) a complete signed application form as provided by the (County/Municipality); and

(b) a copy of the Silvicultural Prescription sealed by a Qualified OPFA Member;

OPTIONAL >>> (c) proof that the marking of the Trees has been carried out by a Qualified Tree Marker; and

(d) the prescribed fee.

The Municipal Act allows fees to be charged on a full cost recovery basis so that the administrative costs of the application are entirely borne by the applicant.

Some counties/municipalities may also wish to consider no fees in any case as these by-laws can be considered for the greater good of the rate payers of the county/municipality.

5.3 A Good Forestry Practices Permit issued under this by-law shall be subject to the following terms and conditions:

(a) Trees which are to be Harvested are cut in accordance with Good Forestry Practices, and as described in a Silvicultural Prescription sealed by a Qualified OPFA Member; and

Counties/municipalities should promote the involvement of a member of the Ontario Professional Foresters Association (OPFA) in managing Woodlands to ensure that the objectives of the by-law are met.

The Professional Foresters Act provides that only Members of the Ontario Professional Foresters Association (OPFA) may practice professional forestry (" - - -the development, management, conservation and sustainability of forests and urban forests - - - "), specifically including the writing of Silvicultural Prescriptions.

The OPFA has several Member Categories.

- Full Registered Professional Foresters are licensed to practice any aspect of professional forestry in which they have competence.
- Associate Members have not qualified for Full status, but may have developed, through education and extensive experience, competence in some aspect of professional forestry and have been granted limited certification. Some are authorized to write Silvicultural Prescriptions.

While an exemption under the Act allows landowners to personally develop prescriptions, few are able to do so effectively and use of authorized professionals should be encouraged. Counties/municipalities could also encourage competent persons in the local forest and logging industry to apply for Associate membership to ensure private landowners have access to legally authorized individuals.

(b) Any other terms and conditions deemed appropriate and imposed by the Officer.

Some **Examples of Conditions** that could be imposed on a Permit include:

- Do not operate a vehicle, machinery or equipment or conduct operations in such a manner or at such a time that results in excessive damage to the residual Trees, the soil, wetlands or other portions of the Woodlands. Excessive damage to soil is difficult to assess without criteria that can be measured in some objective manner (e.g. rutting more than 15 cm deep for a distance of more than xx meters.
- Do not operate a vehicle, machinery or equipment or conduct operations in a manner or at a time, that results in the leaving of any part of a Tree in a watercourse including any Trees that have not been cut, but have been pushed, knocked over or otherwise ended up in a watercourse. (This can also be enforced through the Lakes and Rivers Improvement Act.)
- Provide notification to the by-law Officer 48 hours before start of cutting and again upon resumption of activities after any 4 week period of inactivity.
- No Harvesting during March 20 – July 31 period, based on Silvicultural Guide to avoid bird nesting.
- Erect and display a sign at the entrance at the adjoining roadway to the land where the Harvesting of the Trees is to occur, in a position that is clear and visible to all persons.
- Operator certifies that WSIB and liability coverage are in place and Ministry of Labour obligations will be met.
- No unauthorized third parties on site without the written permission of the landowner.
- Fire suppression equipment must be properly maintained and in place during fire season (dates can be specified).
- Property boundaries must be marked and agreed to by adjacent landowners.
- No piling of logs on road allowances.
- Operator will observe half loading restrictions.
- Property or portion of woodlot to be logged must be clearly identified.
- Landowner is required to certify their ownership of the woodlot.
- General statements requiring compliance with all applicable municipal, provincial and federal laws and regulations.

NOTE: If the Officer is a Qualified OPFA Member or acting under the direction of a Qualified OPFA Member, they may also consider adding conditions relating to the forestry practices involved.

5.4 Notwithstanding sections 5.2 and 5.3, a Good Forestry Practices Permit may be issued where an exclusion provision under the Professional Foresters Act applies and a qualified member of the Ontario Professional Foresters Association provides an opinion that the Harvesting of Trees is consistent with Good Forestry Practices.

This can be used to provide Permits to landowners who are actively involved with their Woodlands and that write their own Good Forestry Practices prescriptions (as provided for in the *Professional Foresters Act* exemption), mark their own Trees, etc. or may be used in the case of large scale dieback or wind damage where Trees do not need to be marked by a professional. This should only be done where the By-law Officer is a qualified member of the Ontario Professional Foresters Association (OPFA) and thereby could by law provide an opinion on Good Forestry Practices. Alternatively, it could be used if the Officer has received sufficient advice from a qualified member of the OPFA.

5.5 A Good Forestry Practices Permit is valid for up to XX year(s) and may be renewed by an Officer for an additional xx year(s).

Some by-laws end the term of all Permits on March 31st, which simplifies enforcement.

The Municipal Act provides the authority for the county/municipality to delegate the power to issue Permits to Officers. The authority to issue a Permit includes the authority to issue the renewal of a Permit.

6. Granting of an Exemption by Council

This section allows the Owner to ask Council for an exemption. There have been situations where the lack of this type of option for Council to consider has caused some legal complications.

Some municipalities have developed "Special Permits". Permits granted under this type of section tend not to meet any of the criteria of the by-law and are not consistent with the intent of the by-law. It is recommended that instead of granting a Permit, that granting an exemption to the by-law is more appropriate.

Another approach is to develop a separate municipal policy, as York Region has done, that is referred to when making decisions on exemption applications.

Some municipalities have preferred not to provide a section such as this at all, and rather encourage such applicants to apply through the usual application process. Once the municipality denies the application, the applicant can then use the appeal process to gain permission.

6.1 Notwithstanding any provision contained in this By-law, an Owner may request an exemption to this By-law from Council.

6.2 Council may:

(a) grant an exemption request; or

(b) grant an exemption request with modifications; or

(c) refuse an exemption request.

6.3 Council, when evaluating a request for an exemption, shall consider if the activity proposed is consistent with the appropriate development or use of the land.

6.4 Council upon granting an exemption may impose such terms and conditions as it deems appropriate.

6.5 An Owner requesting an exemption to this By-law shall at least XX months prior to the commencement date of Harvesting submit to the Clerk of the (County/Municipality) the following:

(a) a complete signed request form as provided by the (County/Municipality); and

(b) the prescribed fee.

The Municipal Act allows fees to be charged on a full cost recovery basis so that the administrative costs of the application are entirely borne by the applicant.

6.6 Circulation of Notice of Exemption Request

(a) The Clerk shall circulate by regular mail XXX days prior to the Council meeting notice that the exemption request will be considered by Council;

(b) Notice shall be circulated to the applicant and all assessed Owners of land that abut the lands subject to the exemption request;

(c) The Owner shall post XXX days prior to the Council meeting notice that is clearly visible and legible from a public highway or other place to which the public has access on the property that is subject to the exemption request.

(d) Notice shall contain the following information:

i) Name of the Owner;

ii) The address of the lands subject to the exemption request;

iii) Purpose of the exemption request;

iv) The date or dates for which the exemption is sought;

v) The date and time the matter will be considered by Council; and

vi) Contact information should an individual wish to address Council regarding the exemption request.

6.7 Decision

(a) In deciding whether to grant an exemption, Council shall give the Owner and any person opposed to or in favour of the request an opportunity to be heard and may consider such other matters including the Officer's comments as it deems appropriate.

Some municipalities would also seek advice from their local Conservation Authorities and Ministry of Natural Resources.

(b) The Clerk shall notify the Owner in writing of Council's decision.

7. APPEAL

There is no requirement under the Municipal Act to provide an appeal process. The public can always take issues to Council. However, a defined process for appeals is recommended. One acceptable process is outlined below. This section can be custom fit to your municipal process. It must, however, comply with the Statutory Powers Procedure Act 1990 as amended.

7.1 An applicant for a Permit may appeal to Council [or committee of Council] by filing a notice of appeal personally or by registered mail to the (County/Municipality) if;

(a) an Officer refuses to issue a Permit; or

(b) an Officer fails to make a decision on the application within 45 days after receipt of a complete application; or

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(c) the applicant objects to a term or condition of the Permit.

(d) a person objects to an Order made under Section 9 or Section 10 of this By-law.

There is no authority in the Municipal Act for an appeal of an Order.

However case law requires the right of appeal to an Order.

7.2 Where an appeal is filed under 7.1(a) or 7.1(c) or 7.1(d), the notice of appeal shall be filed within thirty (30) days of the date of the decision.

7.3 Where an appeal is filed under 7.1(b), the notice of appeal shall be filed within seventy-five (75) days after receipt of the complete application but not prior to forty-five (45) days after receipt of a complete application.

7.4 An appeal made under this section does not act as a stay of any Orders issued, which shall take effect on the day it is served or deemed served and shall continue to be effective until Council renders a decision indicating otherwise.

7.5 Circulation of Notice of Hearing

(a) The Clerk shall circulate by regular mail XX days prior to the Council meeting notice of a hearing;

(b) Notice shall be circulated to the applicant and all assessed Owners of land that abut the lands subject to the hearing;

(c) The Owner shall post XX days prior to the hearing notice that is clearly visible and legible from a public highway or other place to which the public has access on the property that is subject to the hearing.

(d) Notice shall contain the following information:

i) Name of the Owner

ii) The address of the lands subject to the hearing

iii) Purpose of the application/appeal

iv) The date or dates for which the application is sought

v) The date and time the matter will be heard by Council

vi) Contact information should an individual wish to address Council regarding the matter.

7.6 Decision

(a) In hearing the matter, Council shall give the Owner and any person opposed to or in favour of the application an opportunity to be heard and may consider such other matters including the Officer's comments as it deems appropriate.

(b) Council may:

i) issue a Permit; or

ii) issue a Permit with terms and conditions; or

iii) refuse to issue a Permit.

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(c) The Clerk shall notify the Owner in writing of Council's decision.

7.7 The proceedings at the hearing held by Council shall be in accordance with the provisions of the *Statutory Powers Procedures Act,* R.S.O. 1990, c.22. The decision of Council is final and binding.

8. ORDER TO DISCONTINUE ACTIVITY

This has been called a "Stop Work Order" in the past. There is no provision in the Municipal Act for a Stop Work Order but there is for an Order to Discontinue Activity.

8.1 Where an Officer believes that a contravention of this By-law has occurred, the Officer may issue an Order requiring the person who contravened the By-law or who caused or permitted the Harvesting, Injuring or Destroying of Trees in contravention of the By-law to stop and discontinue the Harvesting, Injuring or Destroying of Trees.

8.2 The Order to Discontinue Activity shall set out:

(a) the municipal address or the legal description of the land; and

(b) reasonable particulars of the contravention; and

(c) the date by which there must be compliance with the Order.

9. WORK ORDER

A Work Order is not as strong as a Court Order. Obtain a legal opinion regarding its authority before using a Work Order.

Also, note that the Officer has the power to issue the Work Order, but retention of qualified professionals (under the Professional Foresters Act) will likely be required to identify how rehabilitation or replanting should occur.

9.1 Where an Officer believes that a contravention of this By-law has occurred, the Officer may issue a Work Order requiring the person to rehabilitate the land or Woodlands, or to plant or re-plant Trees.

9.2 The Work Order shall set out:

(a) the name and the Owner and the municipal address or the legal description of the land; and

(b) reasonable particulars of the contravention; and

(c) the work to be done and the date by which the work must be done and

(d) a statement that if the work is not done in compliance with the Order within a specified time period, the Municipality may have the work done at the expense of the Owner; and

(e) contact information of the Officer.

10. SERVICE OF AN ORDER

This section is not necessary as it describes the legal process to serve an order, however some municipalities may wish to include it for the benefit of the users of the by-law.

10.1 An Order issued under this By-law shall be served on the Owner of the property and such other persons affected by it as the Officer determines and a copy of the Order may be posted on the property.

10.2 An Order issued under this By-law may be served personally or by registered mail sent to the last known address of the person to whom the Order is to be given or that person's agent for service.

10.3 If an Order is served by registered mail, the service shall be deemed to have been made on the seventh day after the day of mailing.

10.4 Where service cannot be served as per 10.1, 10.2 or 10.3 the Officer shall place a placard containing the terms of the Order in a conspicuous place on the Owners property, and the placing of the placard shall be deemed to be sufficient service of the Order on the person to whom the Order is directed.

A copy of the by-law should be provided to the recipients of the Order. The Order should be served on all people who have been observed on site: the contractor, the site supervisor, the Owner and any other adult individual who appears to have control over the activities on site. In addition, a copy of the Order should be posted prominently on the site.

11. REMEDIAL ACTION

11.1 Where an Owner fails to comply with a Work Order issued under this By-law, the (Municipality or County) may do the work directed or required to be done at the person's expense.

11.2 The (Municipality or County) may recover the costs of doing a matter or thing under this section of the By-law from the person directed or required to do it by action or by adding the costs to the tax roll and collecting them in the same manner as property taxes.

11.3 Where the (Municipality or County) chooses to do the work directed or required to be done in a Work Order it shall serve notice to the person personally or by registered mail sent to the last known address of the person to whom the notice is to be given or that person's agent for service.

11.4 The Notice shall set out:

(a) the municipal address or the legal description of the land; and

(b) reasonable particulars of the contravention; and

(c) the date the (Municipality or County) will be entering the property to do the work directed or required to be done; and

(d) a statement that the work being completed will be at the Owner(s) expense.

11.5 If a Notice is served by registered mail, the service shall be deemed to have been made on the seventh day after the day of mailing.

11.6 The (Municipality or County) may enter upon land to complete the work three (3) days after service is affected.

If a Municipality or County wishes to utilize the Remedial Action section they should obtain a legal opinion regarding their authority to do so.

12. ENFORCEMENT

There is nothing in the legislation that prohibits a county/municipality from retaining a private firm to enforce the by-law provided the relevant employees are properly appointed. The county/municipality is required to ensure that each Officer is properly trained to perform her or his duties, and if the Officer is not an employee of the county/municipality, is supervised by an employee of the county/municipality. This approach is being used very successfully in several counties/municipalities.

12.1 An Officer may enforce the provisions of this By-law.

Individuals enforcing a by-law under the Municiapal Act MUST be appointed as Provincial Offences Officers or Peace Officers under a separate by-law to be able to legally enforce the by-law in question. (See Tree By-Law Information Package for a sample Appointment By-Law.)

12.2 An Officer may at any reasonable time enter and inspect any land to determine whether this By-law, an Order, court order or a condition of a Permit is being complied with.

Section 435(1) of the Municipal Act does not restrict the number of times an administrative inspection is done. As long as the Officer is conducting an investigation, it is considered an administrative inspection. Once a decision is made to lay charges, then it is no longer an administrative inspection, but rather collection of evidence. Once the Officer has left the property after collecting evidence, he can't come back onto the property without the Owners permission. Where advised by an Owner not to come onto their property, the Officer may apply for an order under Section 238 of the Municipal Act or obtain a search warrant under Section 239 of the Municipal Act to re-enter the property.

The power to inspect land does not extend to entry into buildings and does not extend the power of entry to a person acting under the Officer's instructions. However, the Officer may bring experts with him/her when conducting administrative inspections. See section 137 (2) of the Municipal Act.

12.3 An Officer exercising a power may be accompanied by a person under his direction.

12.4 No person shall hinder or obstruct an Officer or attempt to hinder or obstruct an Officer who is performing a duty under this By-law.

12.5 Any person who provides false information to an Officer shall be deemed to have hindered or obstructed the Officer in the execution of their duties.

13. PENALTY

It is our understanding that the *Municipal Act* provides municipalities with the opportunity and flexibility to develop their own penalties; however we have not been able to secure a legal confirmation of this. Below are two examples. Example #1 was in the *Municipal Act* previously and is found in most of the existing Tree / Forest Conservation By-laws. Example #2 is from the most recent version of the *Municipal Act.*

Example #1:

13. (a) Any person who contravenes any provision of this By-law, or an Order issued under this By-law, is guilty of an offence and is liable for each occurrence of the contravention, infraction or violation:
    (i) on first conviction, to a fine of not more than $10,000 or $1,000 per Tree, whichever is greater; and
    (ii) on any subsequent conviction, to a fine of not more than $25,000 or $2,500 per Tree, whichever is greater.

13. (b) Any corporation who contravenes any provision of this By-law, or an Order issued under this By-law, is is guilty of an offence and is liable for each occurrence of the contravention, infraction or violation:
    (i) on first conviction, to a fine of not more than $50,000 or $5,000 per Tree, whichever is greater; and
    (ii) on any subsequent conviction, to a fine of not more than $100,000 or $10,000 per Tree, whichever is greater.

13. (c) If a person or corporation is convicted of an offence for contravening this By-law or an Order issued under this By-law, the court in which the conviction has been entered, and any court of competent jurisdiction thereafter, may order the person to rehabilitate the land or to plant or replant Trees in such a manner and within such period as the court considers appropriate and to maintain the replanted Trees as appropriate, including any silvicultural treatment necessary to re-establish the Trees.

Example #2

13.1 Any person who contravenes any provision of this By-law, or an Order issued under this By-law is guilty of an offence and upon conviction is liable to:
(a) A maximum fine of $100,000;
(b) In the case of a continuing offence, for each day or part of a day that the offence continues, a maximum fine of $10,000 for each day;
(c) Notwithstanding 14.1(a), in the case of a multiple offence, for each offence included in the multiple offence, a maximum fine of $10,000 for each offence included in the multiple offence.

Note: An approach that is also used in some counties/municipalities is, as an example in (a) state “A fine of not less than $500 and not more than $100,000”. Similar wording would be replaced in (b) and (c). This provides an advantage in court for Part 3 fines. However, it creates an issue when applying for short form wording (Part 1) since $500 tickets are not well received by some Regional Justice.

(d) In accordance with Subsection 429(2)(d) of the Municipal Act a special fine may be imposed and may exceed $100,000 in circumstances where there is an economic advantage or gain from the contravention of this By-Law or an Order under this By-Law.

13.2 The (County/Municipality) designates that the Harvesting of each Tree is one offence in a series of multiple offences.

13.3 If a person is convicted of an offence for contravening this By-law or an Order issued under this By-law, the court in which the conviction has been entered, and any court of competent jurisdiction thereafter, may order the person to rehabilitate the land or to plant or replant Trees in such a manner and within such period as the court considers appropriate, including any Silvicultural treatment necessary to re-establish the Trees.

13.4 If a court makes an Order under Section X “Remedial Action” of this By-law, the (Municipality or County) relies on Section 446(3) and 446(4) of the *Municipal Act,* as amended, for the recovery of costs.

14. ADMINISTRATION

14.1 If any section or sections of this By-law or parts thereof are found by any Court to be illegal or beyond the power of the Council to enact, such Section or Sections or parts thereof shall be deemed to be severable and all other Sections or parts of this By-law shall be deemed to be separate and independent there from and continue in full force and effect unless and until similarly found illegal.

14.2 In this By-law, unless the context otherwise requires words importing the singular shall include the plural and use of the masculine shall include the feminine, where applicable.

14.3 The short title of this By-law is the "Forest Conservation By-law".

14.4 By-law {insert previous By-law no.} of the (County/Municipality) shall be repealed effective on the coming into force and effect of this By-law.

14.5 Despite subsection X of this section, By-law {insert previous By-law no.} of the (County/Municipality) shall continue to apply to proceedings in respect of offences that occurred before its repeal.

It is recommended that there be no Schedules be included in this by-law. The application forms, permits or orders should not be schedules to the by-law. Having them separate enables changes and updates to be made without undergoing by-law revisions and Council approval. If schedules are included, they must be referred to in this section. (e.g. "Schedules 'x', 'y', and 'z' shall form part of this by-law.").

READ A FIRST, SECOND AND THIRD TIME

AND PASSED this day of , 20XX .

_____ _____

Mayor Clerk

Template

Tree Conservation By-law Template

January 14, 2013

Introduction:

This template has been prepared for use by municipalities interested in prohibiting or regulating the Destruction or Injuring of Trees **not in woodlands** as defined herein **on private property** under the *Municipal Act*. According to the *Municipal Act*, the power to pass a by-law respecting the destruction or injuring of trees within or outside woodlands may be delegated between upper and lower tier municipalities with mutual agreement (as has been done in the Regional Municipality of Peel for example). This template should be read in conjunction with the Tree By-law Information Package.

Separate templates have been prepared to assist in the development or updating of Forest Conservation By-laws for municipalities wishing to prohibit or regulate the destruction or injuring of trees in woodlands.

This template is focused on private trees. A separate by-law is recommended for public trees. Some jurisdictions are also developing separate Heritage Tree By-laws. The document "Heritage Trees Protection – Legislative Tools" can be downloaded from the Ontario Heritage Tree Alliance website: http://www.oufc.org/ohtaresources.htm. The Ontario Urban Forest Council has a "Heritage Tree Toolkit" available. This tool helps communities to identify, research, nominate, evaluate and designate trees with heritage value. It can be ordered through http://www.oufc.org/resources.htm

This template has been developed by an interim group of lower and single tier municipal staff with the help of the Forest Conservation By-law Committee and the Ministry of Natural Resources. It is provided with the intention to assist in the development and upgrading of tree by-laws and to encourage more consistent format between by-laws making it easier to adhere to tree by-laws when working in various municipalities.

The information is for discussion purposes only and has not been legally verified. Neither the Ministry of Natural Resources, nor the municipalities participating provide any representation, warranty, or guarantee of any kind as to the suitability, accuracy, or validity, legal or otherwise, of the document, the information contained therein or the use of either. Any by-laws or action based on the use of this document should be undertaken only after consultation with legal council.

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ACKNOWLEDGEMENTS

The following have made substantial contributions to this document:

Sonya Bolton	City of Kingston
Brian Geerts	City of Brantford
Jalil Hashemi	Town of Oakville
Bohdan Kowalyk	OMNR Aurora
Doris Krahn	OMNR Peterborough
Jessica McEachren	City of Guelph
Carrie Musselman	City of Kitchener
Dana Rahkola	Town of Bracebridge
James Rogers	County of Haliburton
Linda Touzin	OMNR Kemptville
Martin Volhard	Town of Richmond Hill
Carol Walker Gayle	City of Toronto

Much of the information and suggestions in the Forest Conservation By-law Template has been used to inform this template development. The Forest Conservation By-law Committee is also acknowledged for their support and encouragement of this initiative.

Template

NOTE: THIS IS A TEMPLATE TO GUIDE DISCUSSIONS WHEN DEVELOPING A TREE BY-LAW – THIS TEMPLATE IS NOT INTENDED TO BE USED AS IS.

To prohibit or regulate the Destruction or Injuring of Trees on private property in the [Name of Municipality/ City/ Town/Township]

WHEREAS s.135(1) of the *Municipal Act*, 2001, S.O. 2001, c.25, as amended, hereinafter referred to as the Act permits the enactment of a By-law by the Council of [Name of Municipality/City/Town/Township] to prohibit or regulate the Destruction or Injuring of Trees;

AND WHEREAS s.135(7) of the Act provides that the By-law may require that a Permit be obtained to Destroy or Injure Trees and impose conditions on a Permit, including conditions relating to the manner in which Destruction occurs and the qualification of persons authorized to Destroy or Injure Trees.

AND WHEREAS Council has determined that it is desirable to enact a Tree By-law for the purpose(s) of:

This section is optional but provides the Council an opportunity to state its purpose and intent of the by-law which may help to increase the public's understanding and support for the by-law. The following are examples which may be considered. Be thoughtful as you want to ensure that the by-law is within the jurisdiction of Council and consistent with proper municipal purposes.

- conserve Tree cover
- maintain the aesthetic value that trees contribute to the municipality/city/town/township
- reduce airborne pollution
- maintain and enhance water quality
- prevent soil erosion and water run-off
- provide cooler air temperatures in the summer
- slow wind
- achieve the objectives of the Official Plan by sustaining a healthy natural environment
- contribute to a Green Infrastructure Plan
- minimize the destruction or injuring of Trees
- protect ravines, riparian areas and source water areas
- regulate and control the removal, maintenance and protection of Trees
- contribute to human health and quality of life through the maintenance of Tree canopy cover
- protect, promote and enhance the value of land
- maintain and improve the ecosystem services provided by Trees
- improve our communities' resilience and adaptation to climate change
- protect vegetation in Shoreline Vegetative Buffers for the purpose of habitat protection, water quality, aesthetics, and implement the District Lake System Health Program.

Now, therefore, the Council of [Municipality/City/Town/Township] HEREBY ENACTS as follows:

1. DEFINITIONS

Where definitions appear in the *Municipal Act*, they do not need to be repeated in the by-law. However, they should be included for clarity. Terms from other legislation such as Good Forestry Practices from the *Forestry Act* should be defined in the by-law and their source could be referenced in footnotes for clarity.

The by-law must define the terms that will be used in the by-law, its forms and its schedules. This section should be carefully drafted to ensure that the by-law can be enforced. Use plain language whenever possible.

Technical terms that are defined should be capitalized throughout the by-law.

All measurements within the by-law should be in metric. A separate sheet of conversions could be prepared for information purposes or exact equivalents may be put in brackets because conversions have been challenged.

Not all of these definitions will be necessary in your by-law but they have been provided as samples for consideration. Consideration should also be made to review existing municipal / city / town / township by-laws to ensure definitions are consistent throughout.

In this By-law:

(a) "Applicant" means the person who submits an application for a permit under this By-law;

(b) "Arborist" means an expert in the care and maintenance of trees and includes an arborist certified by the Ontario Ministry of Training, Colleges and Universities or the International Society of Arboriculture, or a consulting arborist registered with the American Society of Consulting Arborists;

Some by-laws add "or a person with other similar qualifications as approved by the [Designated Official];" however this should be used with caution as Landscape Architects often do not have the qualifications to do the work of a Certified Arborist.

(c) "Building Permit" means a Building Permit issued under the *Building Code Act,* 1992, S.O. 1992, c23, as amended;

(d) "Council" means the Council of [Name of Municipality/City/Town/Township];

(e) "Destroy" means any action which causes or results in the irreversible injury or death of a Tree;

"Destroy" and "Injure" are terms used in the *Municipal Act*.

"Destroy and Injure" has been defined in some by-laws, however defining these terms may limit enforceability of parts of the by-law. It is possible that other actions may destroy or Injure Trees that do not fall within the definition and then for an enforcement proceeding to fail. It is recommended not to define these terms and instead leave the definition to the discretion of the by-law enforcement Officer.

Other definitions which have been used include;
"Destroy" means the removal of trees or harm resulting in the death or ruin of trees by cutting, burning, uprooting, chemical application or other means including irreversible injury that may result from neglect, accident or design and the term "destruction" shall have a corresponding meaning.

"Injure" means to harm, damage or impair a tree and includes, but is not limited to, harm damage or impairment caused by changing grades around a tree, compacting soil over root areas, severing roots, improper application of chemicals, improper pruning or the removal of branches and bark and the term "Injury" shall have a corresponding meaning;

"Injury" means any action which causes physical, biological, or chemical damage to a Tree and does not include pruning or removing branches for maintenance purposes.

(f) "Diameter" means the width measured outside the bark at a specified point of a Tree stem or trunk;

(g) "DBH" means "Diameter at Breast Height" and is calculated as the Diameter of the stem or trunk of a Tree measured at a point that is 1.37 metres above the ground;

(h) "Good Forestry Practices" means the proper implementation of harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity and health and the aesthetics and recreational opportunities of the landscape;

The *Municipal Act* requires by-laws regarding trees in woodlands (one hectare or more in area) to have regard to Good Forestry Practices as defined in the *Forestry Act*. This definition is from the *Forestry Act*. Always use the plural term Good Forestry Practices, to be consistent with the *Forestry Act*.

Reference to Good Forestry Practices is recommended but not required if the lower-tier by-law does not regulate woodlands.

Understanding this term 'good forestry practices' has been somewhat challenging in the past. However several documents now exist to provide guidance, such as the Ontario Professional Foresters Association Bulletins # 1 and #10, and the applicable Provincial Silvicultural Guidelines that include: A Silvicultural Guide to Managing Southern Ontario Forests, Silvicultural Guide for the Tolerant Hardwood Forest in Ontario, Ontario Tree Marking Guide and, A Silvicultural Guide for the Great Lakes – St. Lawrence Conifer Forest in Ontario

(i) "Good Arboriculture Practice" means the proper implementation of removal, renewal and maintenance activities known to be appropriate for individual trees in and around urban areas and includes pruning of trees to remove dead limbs, maintain structural stability and balance, or to encourage their natural form, provided that such pruning is limited to the appropriate removal of not more than one-third of the live branches or limbs of a tree, but does not include pruning to specifically increase light or space;

(j) "Injure" means any action that causes physical, biological or chemical damage to a Tree and does not include pruning or removing branches for maintenance purposes (refer to grey box under (e) above);

(k) "Normal Farm Practice" means a practice that is recognized by the Normal Farm Practices Board which is conducted in a manner consistent with proper and acceptable customs and standards, as established and followed by similar agricultural operations under similar cirumstances, or makes

use of innovative technology in a manner consistent with proper advanced farm management practices.

Normal Fram Practices are recognized by the Normal Farm Practices Board under the authority of the Farming and Food Production Protection Act (FFPPA). For more information please refer to www.omafra.gov.on.ca/english/engineer/nfppb/nfppb.htm

In specific cases where the Normal Farm Practices Protection Board rules that a particular agricultural practice is a "Normal Farm Practice", this practice is exempt from the Tree / Forest Conservation By-law for that property and practice.

The Normal Farm Practices Protection Board (NFPPB) is the adjudicative agency established by the *Farming and Food Protection Act, 1998* (FFPPA) to determine what is or is not a Normal Farm Practice. In arriving at a decision in each case, the Board takes several factors into consideration as it seeks to balance the needs of the agricultural community with provincial health, safety and environmental concerns. This is especially relevant in cases involving municipal by-laws. The Board is required to consider the purpose of the by-law, the effect of the farm practice on adjoining lands and neighbours, and whether the by-law reflects a provincial interest under any other piece of legislation or provincial policy statement. Consequently, there is no definitive list of Normal Farm Practice. **A practice may be ruled as a Normal Farm Practice at a particular location under a particular set of circumstances; the same practice could be ruled as not a Normal Farm Practice at a different location under a different set of circumstances.** A description of Normal Farm Practice can be found at the OMAFRA website at: http://www.omafra.gov.on.ca/english/engineer/nfppb/guide.htm#1.

In situations requiring clarity – where an exemption may be questionned by a municipality - the applicant or the municipality can request consideration by the Normal Farm Practices Protection Board (NFPPB), as the practice may be considered Normal Farm Practice in this specific instance.

Any of the parties in a hearing of the Normal Farm Practices Protection Board can appeal the board's decision regarding "Normal Farm Practice". The appeal must be made to Divisional Court within 30 days of the decision. The appeal must be based on a question of fact, law or jurisdiction.

Note also that an "agricultural operation" includes growing Trees, not only in the FFPPA but also in the *Nutrient Management Act, 2002*, (NMA) and its General Regulation (267/03). The NMA is referenced in subs. 2(1.1) of FFPPA, which states that "a practice that is inconsistent with a regulation made under the [NMA] is not a Normal Farm Practice." In the NMA reg 267/03 "agricultural crops" includes Trees and there are various NMA requirements e.g.: for vegetated buffer zones (including Trees), or vegetated filter strip systems, as well as re anaerobic digesters.

(l) "Officer" means a police officer, a Municipal Law Enforcement Officer or other person appointed by Council for the administration and enforcement of this By-law, qualified to carry out the specific responsibility;

(m) "Qualified OPFA Member" means a Registered Professional Forester, Associate Member or Temporary Member of the Ontario Professional Foresters Association under the *Professional Foresters Act* 2000, c.18, as amended, certified to practice professional forestry, unless a suspension, term, condition or limitation of certification applies which would restrict the Member from carrying out responsibilities under this By-law.

Any suspension, terms and conditions and/or limitations of a member's certification are publicly available and can be obtained from the Ontario Professsional Foresters Association. A Temporary Member is an RPF from another provincial jurisdiction who has been temporarily certified by OPFA. All Associate and Temporary Members have terms, conditions and/or limitation applied to their certification.

(n) "Order" means a Work Order or an Order to Discontinue an Activity;

(o) "Owner" means a person having any right, title, interest or equity in land or any such person's authorized representative and includes the person for the time being managing or receiving the rent of the land and includes a lessee or occupant of the land. Every tree whose trunk is growing on the boundary between adjoining lands is the common property of the owners of the adjoining lands;

(p) "Own Use" means any use by the Owner that does not include a sale, exchange or other disposition of Trees Harvested;

(q) "Permit" means a permit issued pursuant to this By-law by the (insert Municipality/City/ Town/Township);

(r) "Pruning" means the removal of a tree branch or branches from a tree by cutting at a point outside the branch collar, but does not include the removal of more than one third of a tree's leaf-bearing crown. Pruning may be undertaken for the purposes of thinning the crown of a tree to increase light penetration and air movement, providing clearance for utility lines, buildings, pedestrians or vehicles, or eliminating dead or diseased wood.

(s) "Shoreline Vegetative Buffer" means the natural area maintained in its predevelopment state:

i. xx metres (xx feet) wide abutting and running parallel to the high water mark of a navigable waterway for those lands designated as [Waterfront / Open Space / Environmental Protection Area] in the Official Plan;

ii. xx metres (xx feet) wide abutting and running parallel to the high water mark of a navigable waterway for those lands designated as Urban Centres or Communities in the Official Plan;

This definition is provided as an option for consideration by municipalities. It has recently been used in the Muskoka Lakes By-law to conserve, prohibit, restrict, and regulate the possible harvesting, removal, injuring of trees adjacent to lakes. The actual distances can be set by the Municipality.

(t) "Silvicultural Prescription" means the site specific operational plan, signed and sealed by a qualified OPFA Member (unless otherwise exempted under the *Professional Foresters Act),* that describes the existing forest conditions and the forest management objectives for an area, and which prescribes the methods for harvesting the existing forest stand and a series of silvicultural treatments that will be carried out to establish a free-growing stand in a manner that accommodates other resource values as identified;

Template

(u) "Tree" means any species of woody perennial plant, including its root system, which has reached or can reach a height of at least 4.5 metres at physiological maturity;

Some by-laws have added "provided that where multiple stems grow from the same root system, the number of trees shall be the number of stems that can be counted at a point of measurement 1.37 metres from the ground;"

(v) "Tree Protection Plan" means a plan prepared by an Arborist or a Registered Professional Forester that is consistent with the Municipal/City/Town/Township requirements;

Often these plans are prepared in accordance with tree protection policies or specifications prepared by a municipality."

(w) Woodlands" means land with at least:

(i) 1000 Trees of any size, per hectare; or

(ii) 750 Trees measuring over five (5) centimetres in Diameter, per hectare; or

(iii) 500 Trees measuring over twelve (12) centimetres in Diameter, per hectare; or

(iv) 250 Trees measuring over twenty (20) centimetres in Diameter, per hectare,

but does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees.

The woodlands regulated by a municipality are identified in this definition. The municipal by-law regulating trees outside woodlands may also include the definition to clarify the areas to which the by-law would not apply. Each municipality needs to carefully consider the size of area or location of trees or wooded lands it wants to regulate and the delegated jurisdiction.

The definition of woodlands is defined in the *Municipal Act* as, "woodlands as defined in the *Forestry Act* that are one hectare or more in area." This definition from the *Forestry Act* must be used when the by-law addresses woodlands 1 hectare or more in size. However, some municipalities have elaborated on this definition. For example, through delegation the area has been reduced to 0.2 hectares in York Region.

Furthermore, some "Woodlands" definitions may specifically exclude:
- fencerows/hedgerows;
- plantations established for producing nursery stock unless the plantation has not been managed for its intended purpose for a period of 15 years or more; or
- re-growth of early successional trees less than 15 years old on temporarily fallow agricultural fields intended to be used again as part of an agricultural operation.

Another approach has been to identify the woodlands that are regulated only on a map.

Note that some by-laws have explicitly stated or been interpreted not to limit Woodlands by property boundaries which is especially important in urban settings. For instance, Halton Region has stated this as follows: "For the purpose of this By-law, the boundary of Woodland shall be defined by the ecological limit of the Woodland and not by property boundaries. Where a potential Woodland is dissected by a road or path not wider than 20m or by a natural feature such as a creek, the boundary of the Woodland shall be deemed to cross the road, path or natural feature, but the area of the Woodland shall be calculated exclusive of the area of the road, path or natural feature."

It should be noted that the Professional Foresters Act has no density or area limitation on its requirement that only OPFA members practice professional forestry. Its definition for "urban forest" reads: "means tree-dominated vegetation and related features found within an urban area and includes woodlots, plantations, shade trees, fields in various stages of succession, wetland and riparian areas

DEFINING WOODLAND AREAS LESS THAN 1 HECTARE

Some municipalities are developing a separate definition for areas smaller than the Municipal Act definition of "Woodlands" which would include "treed" areas less than 1.0 hectare.

FOR EXAMPLE: *"Woodlots"* for the purpose of this By-law, means land at least 0.2 hectares in area and no greater than 1 hectare in area, with at least:

(i) 200 trees, of any size, per 0.2 hectare; or
(ii) 150 trees, measuring over five (5) centimetres in diameter at DBH, per 0.2 hectare; or
(iii) 100 trees, measuring over twelve (12) centimetres, in diameter at DBH, per 0.2 hectare; or,
(iv) 50 trees, measuring over twenty (20) centimetres, in diameter at DBH, per 0.2 hectare;

but does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas Trees.

It should be noted that if such is adopted the "whereas" preambles and all appropriate sections which refer to "Woodlands" may need to be edited appropriately to recognize this definition.

WOODLANDS / MUNICIPAL AUTHORITY

According to the Municipal Act, the power to pass a by-law respecting the destruction or injuring of trees within or outside Woodlands may be delegated between upper and lower tier municipalities with mutual agreement.

2. APPLICATION

This By-law applies to Trees [of a certain size] on private property in the Municipality/City/Town/Township of ___ but does not apply to trees in woodlands covered by another tree by-law.

Note: this section needs to correspond with the definitions of woodland and/or woodlot.

If the Municipality/City/Town/Township wishes to regulate only a certain size of tree, examples from various jurisdictions include:
to trees that have a DBH of 30 centimetres or more (Toronto), OR
to trees that are 15 centimetres or greater in DBH (Kingston), OR
to trees with DBH greater than 76 centimetres or more (Oakville) AND
the fifth or more tree to be injured or removed within one year with a DBH between 20 cm and 76 cm (Oakville)

The Municipality/City/Town/Township may wish to limit the area within its planning jurisdiction where this by-law applies. A municipality may choose to apply the by-law on properties of a specific size i.e. City of Kitchener - the by-law only applies to properties greater then 1 acre. The City of Ottawa has limited the area to the "Urban Area" and defined this as per its Official Plan. Muskoka Lakes has stated "This By-law applies to the following lands within the Township: i. All lands within 200 feet of navigable waterway in the Waterfront designated in the Official Plan, ii. All lands within 25 feet of a navigable waterway in the Urban Centre or Community designation

in the Official Plan, iii. All lands zoned Environmental Protection (EP1) in the Township Comprehensive Zoning By-law, iv. All lands zoned Scenic Corridor in the Township Comprehensive Zoning By-law.

For trees in woodlands, refer to the Forest Conservation By-Law Templates

3. EXEMPTIONS

This section includes two types of exemptions: mandatory exemptions found in the *Municipal Act* and exemptions developed and granted by the municipality.

The following are the legislated exemptions that are set out in the *Municipal Act* and cannot be changed by by-law. Although **these do not have to be written into the by-law**, it is preferable to have them re-stated to ensure clarity.

This By-law does not apply to;

(a) activities or matters undertaken by a municipality or a local board of a municipality; or

(b) activities or matters undertaken under a licence issued under the *Crown Forestry Sustainability Act,* 1994; or

This would include Trees on private land that the Province has retained timber rights to.

(c) the Destruction or Injuring of Trees by a person licensed under the *Surveyors Act* to engage in the practice of cadastral surveying or his or her agent, while making a survey; or

(d) the Destruction of Injuring of Trees imposed after December 31, 2002 as a condition to the approval of a site plan, a plan of subdivision or a consent under section 41, 51, or 53, respectively, of the *Planning Act* or as a requirement of a site plan agreement or subdivision agreement entered into under those sections; or

(e) the Destruction of Injuring of Trees imposed after December 31, 2002 as a condition to a development Permit authorized by regulation made under section 70.2 of the *Planning Act* or as a requirement of an agreement entered into under the regulation; or

In reference to sections 3 d & e above, consider your own internal policies to ensure issues such as retention (Tree Preservation or Conservation) or compensation are addressed during pre-consultation of planning applications.

(f) the Destruction or Injuring of Trees by a *transmitter or distributor, as those terms are defined in Section 2 of the Electricity* Act, 1998, for the purpose of construction and maintaining a transmission system or a distribution system, as those terms as defined in that Section; or

(g) the Destruction or Injuring of Trees undertaken on land described in a licence for a pit or quarry or a Permit for a wayside pit or wayside quarry issued under the *Aggregate Resources Act*; or

(h) the Destruction or Injuring of Trees undertaken on land in order to lawfully establish and operate or enlarge any pit or quarry on land,

i. that has not been designated under the *Aggregate Resources Act* or a predecessor of that Act; and

ii. on which a pit or quarry is a Permitted land use under a By-law passed under section 34 of the *Planning Act* 2001, c. 25, s. 135 (12); 2002, c. 17, Sched. A, s. 27 (3, 4).

The following are examples of OPTIONAL EXEMPTIONS that can be included at the discretion of the Municipality and need to be reviewed for appropriateness within the Municipality,

While the *Municipal Act, 2001* requires an exemption for tree removal as a condition to the approval of a plan of subdivision, a municipality may also wish to consider an exemption as a condition of draft plan approval for a plan of subdivision. Careful consideration should be given to whether this would be appropriate, given the municipality's subdivision approval process, so that trees are not removed prematurely from a site.

These next three exemptions may be appropriate in municipalities/cities/towns/townships which have rural areas.

(i) the Destruction or Injuring of Trees that is required in order to erect any building, structure or thing in respect of which a Building Permit has been issued and has taken into consideration the protection of Trees surrounding the structure or work within the building envelope, provided that no Tree is Destroyed or Injured that is located more than XX metres from the outer edge of the building, structure or thing; or

"Thing" could be a septic bed. 15 meters is suggested. There is a range used between 15 – 25m. Consult with your local building department.
Caution: – if in an urban area, this provision can be problematic when dealing with re-development or intensification.

(j) the Destruction or Injuring of Trees that is reasonably required in order to install and provide utilities to the construction or use of the building, structure or thing in respect of which a Building Permit has been issued; or

(k) the Destruction or Injuring of Trees that is reasonably required in order to install a single lane driveway for vehicular access to the building, structure or thing in respect of which a Building Permit has been issued and has taken into consideration the protection of Trees surrounding the driveway, provided that no Tree is Destroyed or Injured that is located more than XX metres from the outer edge of the driveway;

In Cities or Towns, such as the Town of Oakville, a distance of only 1.8 metres may be more appropriate.
In more rural communities, exemptions for trail and road development may be a consideration.

(l) the Destruction or Injury is required as part of the operation of an existing cemetery or golf course;

(m) Pruning that is necessary to maintain the health and condition of the tree, provided the Pruning is in accordance with Good Arboriculture Practice;

(n) the tree(s) are located within a building or structure, a solarium, a rooftop garden, or an interior courtyard;

(o) the trees that are Destroyed are located within a cultivated orchard or plant nursery that are being actively managed and harvested for the purposes for which the trees were planted as demonstrated in a management plan or business plan.

(p) The injuring or destruction of the following species of non-native, invasive trees: XX

(q) the Harvesting of Trees by the Owner of Woodlands for the Owner's Own Use, provided the Harvesting does not reduce the density of Trees below that which is defined as Woodlands; and

Additional limitations such as the following **should** be considered,:
i) is in accordance with Good Forestry Practices; and
ii) the amount of wood Harvested does not exceed 24 cubic meters in volume in any year; or
iii) no more than five Trees per hectare, to a maximum of 30 Trees, are removed within a one-year period.
This exemption is used by some muncipalities, but applicability should be considered.

(r) the Injuring or Destruction of Trees undertaken as Normal Farm Practices, as ruled by the Normal Farm Practices Protection Board for the subject land.

Be cautious about providing an exemption for Trees that are diseased, infected or in poor health. This has been abused in the past. These situations can be dealt with using a permit responsive to the condition of the tree (see section 5.8).

We do not recommend providing an exemption for the use of Certified Tree Markers. There have been some by-laws that provide an exemption for harvesting if marked by a Certified Tree Marker, with the false assumption that this would ensure Good Forestry Practices. Although Certified Tree Markers are trained to mark according to a prescription, a prescription may not have been prepared. Certified Tree Markers are not necessarily trained in the preparation of prescriptions.

Exemptions for trail and road development may be considered.

4. GENERAL PROHIBITION

Offences can be created in any section of the by-law but if you intend to write fines under this by-law it may be preferable to keep them in one area of the by-law.

4.1 No person shall destroy or injure, cause, or permit or arrange for the destruction or injury of any tree in an area described in Section 2:

(a) unless exempted under the provisions of this By-law; or

(b) except in accordance with a valid permit issued pursuant to the provisions of this By-law.

The additional words "or arrange for" have been used in some by-laws to ensure clarity for the public reading the by-law, however it is not necessary for enforcement purposes as the wording already covers both the owner and the contractor.

4.2 No person shall:

(a) fail to comply with an Order issued under this By-law; or

(b) remove or deface an Order that has been posted pursuant to this By-law.

4.3 No person shall contravene, or cause or permit the contravention of the terms or conditions of a Permit issued under this By-law.

Some municipalities have incorporated the Endangered Species Act into their by-law. However some legislation or information such as the Endangered Species information may rapidly become out of date and many landowners have not welcomed the Endangered Species Act. It may be in the municipality's best interest to leave other legislation out of their by-law.

Another consideration is how Harvesting is to be done in **Sensitive Natural Areas**.

The requirement of Good Forestry Practices in this template should provide protection for all sensitive areas. This is something the Qualfied OPFA Member should evaluate before deciding to write a prescription. This section is more important to consider in a by-law that permits circumference limit harvesting where professionals may not be involved.

Areas considered sensitive by the municipality could be listed or shown on a map. A term for such areas would need to be defined in the by-law.

Examples of areas for consideration could include:

- Natural Heritage Systems;
- Environmentally Sensitive Areas;
- Significant Woodlands;
- Provincially Significant Wetlands, or other wetlands;
- areas under the jurisdiction of the Niagara Escarpment Commission;
- any portion of Woodlands located within xx metres of the water's edge of a provincially significant wetland (or other wetland), lake, river, or stream; or
- Provincial or Regional Life Science Areas of Natural and Scientific Interest identified by the Ministry of Natural Resources.

Trees Protected Under the provincial Endangered Species Act

Since there have been regulations and an administrative process already set out for certain endangered tree species, municipalities/cities/towns/townships may wish to consider incorporating this into their Permit review and approval process.

In the application of Good Forestry Practices, the Qualfied OPFA Member should be aware of Trees protected under the Endangered Species Act – it maybe advisable that the Permit application be screened for such species e.g.,: Butternut, Eastern Flowering Dogwood, American Chestnut, Kentucky Coffee-tree, Common Hoptree, Red Mulberry, Cherry Birch or Cucumber-tree should they be included in the inventory tally of potential effects. There may be merit in producing as a resource to landowners, OPFA members and the forest industry in general, a locally developed extension note that lists these species and encourages documentation of their locations and health.

For example: For instance if a butternut tree has been determined to be non-retainable by a Designated Butternut Health Assessor, the Officer may consider this in his/her decision to grant the Permit.

However, note that <u>all</u> Butternut trees, retainable & non-retainable, as well as other provincially protected species must be reported to the OMNR before they are harmed.

5. APPLICATION PROCESS

5.1 The (Municipality/City/Town/Township) hereby delegates to the Officer the authority to issue a Permit under this By-law, and to impose terms and conditions in accordance with Good Arboriculture Practice and Good Forestry Practices.

The municipality needs to determine and define who has the authority to administer the by-law – this could be a Director (e.g., of Planning or Engineering Services, etc.).

5.2 An application for a Permit shall be submitted at least XX weeks prior to the commencement date of the destruction or injuring of the Tree to the (Municipality/City/Town/Township) and shall include the following:

(a) a complete signed application form as provided by the (Municipality/City/Town/ Township);

(b) the prescribed fee;

The *Municipal Act* allows fees to be charged on a full cost recovery basis so that the administrative costs of the application are entirely borne by the applicant. Some municipalities may wish to consider no fees for the greater good of the ratepayers of the municipality and to encourage compliance and Good Forestry Practices or Good Arboriculture Practice.

The fees may also be used as an incentive or disincentive. Consider charging less or nothing to encourage application submissions and compliance by individuals. Consider charging for commercial projects over a certain size.

(c) Where, in the opinion of the Officer, additional information is necessary, the Officer may require the submission of;

i. a Tree Protection Plan prepared by or prepared under the direction of an Arborist or a Silvicutural Prescription sealed by a Qualified OPFA Member and/or

ii. a Tree Planting Plan for one or more individual trees acceptable to the Municipality.

There may be situations, for example, where there may be one or two trees, where the landowner may prepare these plans; otherwise, a qualified professional may prepare these plans. It should be left to the discretion of staff reviewing the application to ensure that the information contained in the plan is reasonable & acceptable.

5.3 The Officer is authorized to:

(a) Issue permits for the Destruction or Injury of trees and impose terms and conditions to the permit;

(b) Refuse to issue permits for the Destruction or Injury of trees;

(c) Stop any work causing Destruction or Injury to trees that is taking place without a permit or contrary to the terms and conditions of a permit;

(d) Waive the requirement for a Tree Protection Plan for an application involving a single residential unit;

(e) Require an applicant to post a letter of credit or alternate form of security and content acceptable to the Officer to ensure compliance with conditions of permit issuance.

Typically, the deposit is calculated at 120% of the estimated cost.

5.4 Following the receipt of a complete application, the Officer shall consider the criteria as outlined in the "Guidelines for Reviewing an Application to Destroy or Injure a Tree".

Review Criteria

Municipalities are encouraged to develop such Guidelines. This approach is not required but it provides grounds to refuse a permit. These Guidelines should include:

- Condition of the tree (e.g. diameter, height, health and structural integrity);
- Location of the tree;
- Species of tree and associated vegetation;
- Crown coverage of the ground [or leaf area];
- The protection of ecological systems and their functions, including the protection of native flora and fauna;
- Erosion, sedimentation of watercourses, and flood control;
- Impacts on surrounding properties, including loss of shade, vistas or privacy; and
- The cultural heritage value of the tree.
- Since there have been regulations and an administrative process already set out for the endangered Butternut tree, municipalities may wish to consider incorporating this into their permit review and approval process. For instance if a Butternut tree has been determined to be in non-retainable condition in accordance with the approved Ministry of Natural Resources process by a designated Butternut Health Assessor (including MNR notification), the Officer may consider this in his/her decision to grant the permit.

5.5 The Officer may refuse to issue a permit for the Destruction or Injury of trees where:

(a) Trees are healthy;

Refusal Criteria

(b) Environmentally sensitive areas, ecological systems, natural landforms or contours will not be adequately protected and preserved;

(c) Erosion or flood control will be negatively impacted;

(d) An application for rezoning, a consent, a minor variance, a plan of subdivision or a site plan to the land on which the tree is located has been submitted to the municipality/ city/ town/township, but has not received final approval;

(e) The tree(s) is an endangered or threatened species as defined in Ontario's *Endangered Species Act*, 2007, S.O. 2007, c.6,

Some municipalities have incorporated the *Endangered Species Act* into their by-law. However some legislation or information such as the endangered species information may rapidly become out of date. It may be in the municipality's best interest to leave other legislation out of their by-law.

(f) Issuance of a permit pursuant to the Region of ____ Forest Conservation By-law is required;

(g) Approval is inconsistent with an approved Tree Protection Plan or an approved Silvicultural Prescription;

(h) The proposed activities would be in contravention of the *Migratory Birds Act*, 1994;

(i) The Destruction or Injury of the tree is otherwise unacceptable to the Officer.

5.6 The Officer is authorized to issue a permit for the Destruction or Injury of trees where:

(a) Trees are in poor condition and cannot be maintained in a healthy and safe condition as prescribed in a Tree Protection Plan;

(b) The trees are causing or are likely to cause structural damage to a load-bearing structure or roof structure or other physical damage;

(c) The Officer is satisfied that the Destruction and Injury of Trees is consistent with Good Forestry Practices or Good Arboriculture Practice;

Reference to Good Forestry Practices should only be used where the by-law administrator is satisfied that the silviculture prescription submitted with the application has been prepared by or prepared under the direction of a member of the Ontario Professional Foresters Association (OPFA) or where the by-law administrator is a qualified member of the Ontario Professional Foresters Association (OPFA) and thereby can provide an opinion on Good Forestry Practices. Alternatively, it could be used if the by-law administrator has received sufficient advice from a qualified member of the OPFA.

(d) The Officer is satisfied that the trees are growing in inappropriate locations and cannot be maintained on a routine basis due to restrictive site conditions;

(e) Destruction or Injury is required in order to remediate contaminated soil

(f) Trees are to be relocated and the Officer is satisfied that the trees will be sufficiently prepared for relocation;

Template

(g) Destruction or Injury is required for trees specifically identified for injury or destruction on plans approved by the Ontario Municipal Board or Council.

5.7 A Permit issued under this By-law shall be subject to the following terms and conditions:

(a) Trees which are to be destroyed or injured are cut in accordance with Good Arboriculture Practice and/or Good Forestry Practices;

(b) Any other terms and conditions deemed appropriate and imposed by the Officer.

Other conditions may be considered either in the by-law or on the permit such as;

-
- cash in lieu payment / replacement trees, any conditions recommended by the Tree Protection Plan, an arborist or a member of the Ontario Professional Foresters Association;
- the measures to be implemented to protect the retained trees during construction, if applicable;
- the requirement to prepare a Tree Preservation and Protection Plan, which must be approved by the by-law administrator and implemented as a condition of a Tree Permit;
- The manner and timing of Destruction or Injury of trees(s);
- Undertaking the tree cutting work only under the supervision of a qualified Arborist;
- Trees will be planted and maintained according to the (Municipal/City/ Town/Township) Planting Plan Guide.
- Trees which are to be destroyed or injured must be cut in accordance with Good Forestry Practices and:
- Described in a Silvicultural Prescription approved by a qualified OPFA member; and
- Marking of Trees, if required, is carried out by a Qualified Tree Marker

5.8 Where a Permit requires the planting of replacement trees, the Officer may impose the following provisions related to the replacement trees;

(a) The species, size, number, and location of the replacement tree(s);

(b) The number of replacement trees to be planted;

(c) The date by which any replacement tree(s) is/are to be planted;

(d) The maintenance and care of any replacement tree(s) to the satisfaction of the Officer in accordance with the approved Tree Protection Plan or Tree Planting Plan;

(e) Where replacement planting is not physically possible on site, the Officer may require planting at another suitable location or accept a cash in lieu payment in an amount equal to the cost of replanting and maintaining the trees for a period of two years.

5.9 The term of a Permit shall be for a maximum of (x) year/days from the date of issuance

5.10 A Permit may be revoked by the Officer if:

(a) it was issued on mistaken, misleading, false or incorrect information;

(b) it was issued in error;

(c) the owner or applicant requests in writing that it be revoked;

(d) an owner fails to comply with any provision of the Permit or this By-law.

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5.11 When a Permit is revoked, the owner and/or applicant shall immediately cease all operations being conducted under the authority of the revoked Permit.

6. APPEAL

There is no requirement under the *Municipal Act* to provide an appeal process. The public can always take issues to council, however a defined process for appeals is recommended. One acceptable process is outlined below. This section can be custom fit to your municipal process. It must however comply with the Statutory Powers Procedure Act 1990 as amended.

6.1 An applicant for a permit may appeal to Council by filing a notice of appeal personally or by registered mail to the municipality/city/town/township if;

(a) an Officer refuses to issue a Permit; or

(b) an Officer fails to make a decision on an application, within XX days after receipt of a complete application;

(c) the applicant objects to a term or condition of the Permit; or

(d) a person objects to an order made under Section 7 or Section 8 of this By-law.

There is no authority in the *Municipal Act* for an appeal of an order however case law requires the right of appeal to an Order.

6.2 Where an appeal is filed under 6.1(a) or 6.1 (c) or 6.1 (d), the notice of appeal shall be filed within thirty (30) days of the date of the decision.

6.3 Where an appeal is filed under 6.1 (b), notice of appeal shall be filed within seventy-five (75) days after receipt of the complete application but not prior to forty-five (45) days after receipt of a complete application.

6.4 An appeal made under this section does not act as a stay of any orders issued, which shall take effect on the day it is served or deemed served, and shall continue to be effective until Council renders a decision indicating otherwise.

6.5 Circulation of Notice of Hearing

(a) The Clerk shall circulate by regular mail XX days prior to the Council meeting notice of a hearing;

(b) Notice shall be circulated to the applicant and all assessed owners of land that directly abut the property subject to the hearing;

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(c) The Owner shall post XX days prior to the hearing a notice that is clearly visible and legible from a public highway or other place to which the public has access on the property that is subject to the hearing.

(d) Notice shall contain the following information:

i) Name of the Owner

ii) The address of the lands subject to the hearing

iii) Purpose of the application/appeal

iv) The date or dates for which the application is sought

v) The date and time the matter will be heard by Council

vi) Contact information should an individual wish to address Council regarding the matter.

6.6 Decision

(a) In hearing the matter, Council shall give the Owner and any person opposed to or in favour of the application an opportunity to be heard and may consider such other matters including the Officer's comments as it deems appropriate.

(b) Council may:

i) issue a Permit; or

ii) issue a Permit with terms and conditions; or

iii) vary the terms or conditions on a permit; or

iv) refuse to issue a Permit.

(c) The Clerk shall notify the Owner in writing of Council's decision.

6.7 The proceedings at the hearing held by the Council shall be in accordance with the provisions of the *Statutory Powers Procedures Act,* R.S.O. 1990, c.22. The decision of the Council under this section is final.

If a Municipality/City/Town/Township has an Appeal Committee that has been delegated the authority of hearing matters and making the final decision you may substitute the name of the Committee in place of Council.

7. ORDER TO DISCONTINUE ACTIVITY

This has been called a "Stop Work Order" in the past. There is no provision in the *Municipal Act* for a Stop Work Order but there is for an Order to Discontinue Activity.

7.1 Where an Officer believes that a contravention of this By-law has occurred, the Officer may issue an Order requiring the person who contravened the By-law or who caused or permitted

Template

the Destruction or Injuring of Trees in contravention of the By-law to stop and discontinue the Destruction or Injuring of Trees.

7.2 The Order to Discontinue Activity shall set out:

(a) the name of the owner and the municipal address or the legal description of the land;

(b) reasonable particulars of the contravention; and

(c) the date and time by which the order must be in compliance with the By-law; and

(d) contact information of the Officer.

8. WORK ORDER

A Work Order is not as strong as a Court Order. Obtain a legal opinion regarding its authority before using a Work Order.
Also, note that the Officer has the power to issue the Work Order, but retention of qualified professionals (under the Professional Foresters Act) will likely be required to identify how rehabilitation or replanting should occur.

8.1 Where an Officer determines that a contravention of this By-law has occurred, the Officer may issue a Work Order requiring the person to rehabilitate the land as may be required and plant or re-plant Trees.

8.2 The order shall set out:

(a) the name of the owner and the municipal address or the legal description of the land; and

(b) reasonable particulars of the contravention; and

(c) the work to be done; and

(d) a statement that if the work is not done in compliance with the order within a specified time period, the Municipality/City/Town/Township may have the work done at the expense of the owner; and

(e) the date and time by which the work must be done; and

(f) contact information of the Officer.

9. SERVICE OF AN ORDER

This section is not necessary as it describes the legal process to serve an order, however some municipalities may wish to include it for the benefit of the users of the by-law.

9.1 An Order issued under this By-law shall be served on the Owner of the property and such other persons affected by it as the Officer determines and a copy of the Order may be posted on the property.

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9.2 An Order issued under this By-law may be served personally or by registered mail sent to the last known address of the person to whom the Order is to be given or that person's agent for service.

9.3 If an Order is served by registered mail, the service shall be deemed to have been made on the seventh day after the day of mailing.

9.4 Where service cannot be served as per 9.1, 9.2 or 9.3 the Officer shall place a placard containing the terms of the order in a conspicuous place on the owners property, and the placing of the placard shall be deemed to be sufficient service of the order on the person to whom the order is directed.

A copy of the by-law should be provided to the recipients of the Order. The Order should be served on all people who have been observed on site: the contractor, the site supervisor, the owner, and any other adult individual who appears to have control over the activities on site. In addition, a copy of the Order should be posted prominently on the site.

10. REMEDIAL ACTION

10.1 Where an Owner fails to comply with a Work Order issued under this By-law, the (Municipality/City/Town/Township) may do the work directed or required to be done at the person's expense.

10.2 The (Municipality/City/Town/Township) may recover the costs of doing a matter or thing under this section of the By-law from the person directed or required to do it by action or by adding the costs to the tax roll and collecting them in the same manner as property taxes.

10.3 Where the (Municipality/City/Town/Township) chooses to do the work directed or required to be done in a Work Order it shall serve notice to the person personally or by registered mail sent to the last known address of the person to whom the notice is to be given or that person's agent for service.

10.4 The Notice shall set out:

(a) the municipal address or the legal description of the land; and

(b) reasonable particulars of the contravention; and

(c) the date the (Municipality/City/Town/Township) will be entering the property to do the work directed or required to be done; and

(d) a statement that the work being completed will be at the Owner(s) expense.

10.5 If a Notice is served by registered mail, the service shall be deemed to have been made on the seventh day after the day of mailing.

Template

10.6 The (Municipality/City/Town/Township) may enter upon land to complete the work three (3) days after service is affected.

If a Municipality/City/Town/Township wishes to utilize the Remedial Action section they should obtain a legal opinion regarding its authority to do so.

11. ENFORCEMENT

There is nothing in the legislation that prohibits a municipality/city/town/township from retaining a private firm to enforce the by-law provided the names of the relevant employees are properly appointed. The municipality/city/town/township is required to ensure that each Officer is properly trained to perform her or his duties, and if the Officer is not an employee of the municipality/city/town/township, is supervised by an employee of the municipality/city/town/township. This approach is being used very successfully in several jurisdictions.

11.1 An Officer may enforce the provisions of this By-law.

Individuals enforcing a by-law under the *Municiapl Act* MUST be appointed as Provincial Offences Officers or peace officer under a separate by-law to legally enforce the enacted by-law. (See Tree By-Law Information Package for a sample Appointment By-Law.)

11.2 An Officer may at any reasonable time enter and inspect any land to determine whether this By-law, an Order, Court Order or a condition of a Permit is being complied with.

Section 435(1) does not restrict the number of times an administrative inspection is done. As long as the Officer is conducting an investigation, it is considered an administrative inspection. Once a decision is made to lay charges, then it is no longer an administrative inspection, but rather collection of evidence. Once the Officer has left the property after collecting evidence, he can't come back onto the property without the Owner's permission. Where permission is not given, the Officer may apply for an Order under Section 238 of the *Municipal Act* or obtain a search warrant under Section 239 of the Municipal Act to re-enter the property.

The power to inspect land does not extend to entering a building and does not extend the power of entry to a person acting under the Officer's instructions. However the Officer may bring experts with him/her when conducting administrative inspections. See section 137 (2) of the *Municipal Act*.

11.3 An Officer exercising a power may be accompanied by a person under his direction.

11.4 No person shall hinder or obstruct an Officer or attempt to hinder or obstruct an Officer who is performing a duty under this By-law.

11.5 Any person who provides false information to an Officer shall be deemed to have hindered or obstructed the Officer in the execution of their duties.

12. PENALTY

It is our understanding that the *Municipal Act* provides municipalities with the opportunity and flexibility to develop their own penalties, however we have not been able to secure a legal confirmation of this. Below is an example from the most recent version of the *Municipal Act.*

Example

12.1 Any person who contravenes any provision of this By-law, or an Order issued under this By-law is guilty of an offence and upon conviction is liable to:

(a) A maximum fine of $100,000;

(b) In the case of a continuing offence, for each day or part of a day that the offence continues, a maximum fine of $10,000 for each day;

(c) Notwithstanding 14.1(a), in the case of a multiple offence, for each offence included in the multiple offence, a maximum fine of $10,000 for each offence included in the multiple offence.

Note that an approach that is also used in some counties/municipalities is, as an example in (a) state "A fine of not less than $500 and not more than $100,000". Similar wording would be replaced in (b) and (c). This provides an advantage in court for Part 3 (Provincial Officences Act); however; it creates an issue when applying for short form wording (Part 1). $500 tickets are not well received by some local courts.

(d) In accordance with Subsection 429(2)(d) of the *Municipal Act* a special fine may be imposed and may exceed $100,000 in circumstances where there is an economic advantage or gain from the contravention of this By-Law or an Order under this By-Law.

12.2 The (County/Municipality) may designate that the Destruction or Injuring of each Tree is one offence in a series of multiple offences.

12.3 If a person is convicted of an offence for contravening this By-law or an Order issued under this By-law, the court in which the conviction has been entered, and any court of competent jurisdiction thereafter, may order the person to rehabilitate the land or to plant or replant Trees in such a manner and within such period as the court considers appropriate, including any Silvicultural treatment necessary to re-establish the Trees.

12.4 If a court makes an Order under section X "Remedial Action" of this By-law, the (Municipality or County) relies on Section 446(3) and 446(4) of the *Municipal Act,* as amended, for the recovery of costs.

13. ADMINISTRATION

It is recommended that there be no Schedules be included in this by-law. The application forms, permits or orders should not be schedules to the by-law. Having them separate enables changes and updates to be made without undergoing by-law revisions and Council approval. If schedules are included, they must be referred to in this section. (e.g. "Schedules 'x', 'y', and 'z' shall form part of this by-law.").

13.1 If any section or sections of this By-law or parts thereof are found by any Court to be illegal or beyond the power of the Council to enact, such Section or Sections or parts thereof shall be

deemed to be severable and all other Sections or parts of this By-law shall be deemed to be separate and independent there from and continue in full force and effect unless and until similarly found illegal.

13.2 In this By-law, unless the context otherwise requires words importing the singular shall include the plural and use of the masculine shall include the feminine, where applicable.

13.3 The short title of this By-law is the (e.g., “Tree Conservation By-law”).

13.4 By-law {insert previous By-law no.} of the (Municipality/City/Town/Township) shall be repealed effective on the coming into force and effect of this By-law.

13.5 Despite subsection x of this section, By-law {insert previous By-law no.} of the (County/Municipality) shall continue to apply to proceedings in respect of offences that occurred before its repeal.

READ A FIRST, SECOND AND THIRD TIME

AND PASSED this day of , 20XX .

_____ _____

Mayor Clerk

_____ _____

Chair Clerk

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