

TREE CANOPY ROUNDTABLE



Roundtable Summary

A summary of the April 29, 2014 *Tree Canopy Roundtable* with recommendations.



MESSAGE FROM THE CO-CHAIR

NORM KELLY

The Tree Canopy plays an essential role in the maintenance and well being of Toronto's ecosystem and communities. Toronto remains committed to environmentally friendly practices and a living environment, which embraces the beauty of nature. It is imperative that public officials and governments partner with stakeholders to develop solutions that promote ecological sustainability and growth of Toronto's illustrious urban forest.

During the Tree Canopy round table, we took important steps towards strengthening our relationship with communities, advocacy groups, and private stakeholders. We examined new opportunities for funding initiatives that will help restore our tree canopy, and how communities could be given a greater opportunity to contribute to the wellbeing of their local urban forest and foliage.

This report summarizes findings from the meeting and outlines important next steps to keep building this relationship with our partners and with others that drive our economy. I look forward to receiving your feedback on the attached recommendations; the conversation has only just begun.

Sincerely,

A handwritten signature in green ink, appearing to read "Norm Kelly".

Deputy Mayor Norm Kelly

Councillor, Ward 40 – Scarborough-Agincourt
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MESSAGE FROM THE CO-CHAIR

Sarah Doucette

Toronto's tree canopy is one of the most expansive and valuable capital resources the city has. If we are to realize the maximum benefit from the Urban Forest we must strive to reach the goals of growing the urban canopy coverage to 40% and nurturing more equitable and uniform tree coverage throughout all of Toronto's communities.

There is no other city resource which provides such a wide spectrum of benefit than the Urban Forest. In addition to providing much needed shade during the warmer seasons, trees also serve to aid Toronto's rainfall drainage system, prevent soil erosion, sequester carbon emissions, and provide a habitat for urban fauna.

The *Tree Canopy Roundtable* maintains Toronto's commitment to responsible forest stewardship and continued co-operation with concerned communities, organizations, and individuals to advance urban forest initiatives and awareness.

Sincerely,

A handwritten signature in blue ink that reads "Sarah Doucette". The signature is fluid and cursive.

Councillor Sarah Doucette
Ward 13 – Parkdale-High Park

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OVERVIEW

Being coined "a city within a park", the city of Toronto currently hosts an urban forest with an estimated 10.2 million trees, covering approximately 18,000 hectares or an estimated 26.6% - 28% of the city. Forty percent of this valuable resource is situated on public property, including an estimated 3.5 million trees within our parkland system and approximately 600,000 trees on our streets.²



The City of Toronto has long recognized the importance of urban trees and the benefits they provide. Over the past decade

tree-related policies, by-laws and guidelines have been continuously improved to better support the protection and enhancement of Toronto's urban forest. During the 2014 Budget process Council adopted the goal of increasing tree canopy coverage across the city to 40% in January 2014. Toronto has maintained a firm commitment to growing the city's urban forest to maximize the ecological, social and economic benefits derived from urban trees, which are largely understood to be:

- a. Toronto's urban forest provides the equivalent of at least \$28.2 million in ecological services each year. The benefits derived from the urban forest exceed the annual cost of management.²
- b. For every dollar spent on annual maintenance, Toronto's urban forest returns anywhere from \$1.35– \$3.20 worth of benefits and cost savings each year.¹
- c. Gross carbon sequestration by trees in Toronto is estimated at 46,700 metric tons of carbon per year with an associated value of \$1.1 million. Net carbon sequestration in the urban forest is 36,500 metric tons.²
- d. Trees affect energy consumption by shading buildings, providing evaporative cooling, and blocking winter winds. Toronto's urban forest is estimated to reduce energy use from heating and cooling of residential buildings by 41,200 MWH (\$10.2 million/year).²
- e. Toronto's urban forest improves air quality, intercepting 1,905 metric tonnes of air pollutants annually (the equivalent value of \$16.9 million/year).²

¹ Connor McDonald, Economist, Urban Forests: The Value of Trees in the City of Toronto. (Toronto: TD Economics Special Report 2014)

f. the Urban tree canopy helps to mitigate storm water runoff. Simulations that doubled the tree canopy in the Don watershed indicate a 2.5% decrease in overall flow. Simulating removal of impervious cover in the watershed reduces total flow by an average of 23.8%.²

Through increased volunteer tree planting and forest stewardship opportunities and the creation of new policies and tree planting practices, which improve the life span of trees, the City is fully embracing the urban greenery as core to its character. In addition, funding to Forestry programs has increased the protection, maintenance and planting of trees on City property.

Toronto remains committed to green infrastructure; the growing pressure for increased urban density will place greater strain on the urban forest and also make the proper maintenance and stewardship of existing green space that much more essential to the city's well being. Other factors that will impact the urban forest in the coming decades include: exotic insect pest infestations, disease, increased use pressure on the City's green spaces, and severe weather events – as evidenced by this past year's storms.

SUMMARY: COMMENTS FROM PARTICIPANTS

During discussion there was tremendous emphasis placed on the need to preserve the city's urban forest and grow the canopy coverage to 40%. Echoing the City's commitment to green infrastructure, the benefits of incorporating elements of the natural environment into urban areas were unanimously agreed to be abundant and far reaching. The ensuing discussion about the current status of the urban forest and ways in which to expand it yielded many interesting and notable comments and ideas.

There is an abundance of information on how to properly care for trees. However, many participants felt that the information has not been properly conveyed to the general population. Because the majority of urban canopy coverage and diversity of species is largely focused on privately owned land, it was agreed that greater effort should be made to inform the public of why the urban forest is important, and ways which concerned individuals could help with preservation and stewardship in both private and public areas.

Participants raised many interesting ideas of how to better care for the urban forest, such as re-using the remnants of dead trees and creating a more extensive inventory of mature trees to help preserve Toronto's natural heritage. Cities like Chicago have reportedly realized savings in excess of two million dollars from creating new methods to internally utilize fallen and dead waste in parks and private property. Such a practice could be particularly beneficial in Toronto, as every tonne of waste which is diverted from Solid Waste Management saves the City approximately \$107. Some participants also suggested that the City consider implementing a new City vernacular which would revise terms like "waste wood" to better reflect the City's commitment to recycling and reusing resources.

The past year's severe weather was also widely discussed. Though the ice storm was nearly six months ago, the devastating effect it had on the urban forest was so broad that the City is only just beginning to fully quantify the damage. During discussion, the City's commitment to rehabilitating

² Every Tree Counts: A Portrait of Toronto's Urban Forest. (City of Toronto, Parks, Forestry & Recreation:Urban Forestry, 2013)

the ecosystem was evident and the outpouring of support from local community groups unprecedented. In addition, many corporate sponsors in attendance reaffirmed their continued support for Toronto’s green spaces and tree canopy. They understand that their contribution is visible throughout the entire city and are eager to explore new opportunities to increase their participation.

Round table participants also suggested expanding programs and opportunities for individuals to contribute their time towards forest maintenance, expansion and sustainability efforts. Many agreed that the City should pursue partnering with the TRCA, LEAF and other organizations to advance this initiative.

THE CITY'S STRATEGIC URBAN FOREST MANAGEMENT GOALS³

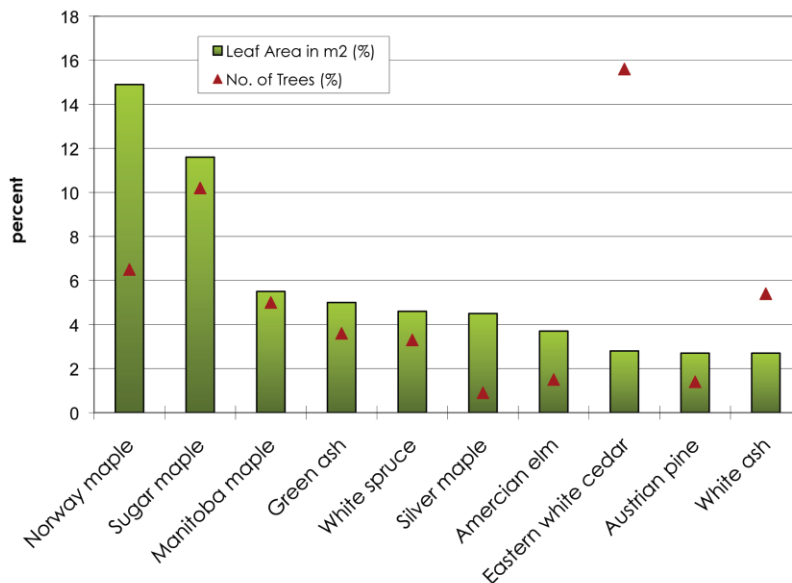
In 2013, Toronto City Council unanimously approved *Sustaining and Expanding the Urban Forest: Toronto's Strategic Forest Management Plan*. The plan provides context and direction for managing the city's urban forest over the next 10 years and specifically includes the following strategic goals;

1. **Increase Toronto's Canopy Cover:** The City is committed to increasing the tree canopy cover as much as is practical and feasible, while still recognizing the importance of growth and development. A target of 40% has been set to ensure that the city of Toronto remains one of the most livable cities in the world and that people throughout the city benefit from the full range of environmental, economic and community services that trees can provide.

2. **Achieve Equitable Distribution:** Healthy communities are associated with healthy tree populations for all the social, economic and ecological benefits they provide. For these reasons, the City and its partners will strive to ensure that areas with less tree canopy are prioritized for tree planting. This will increase equitable distribution of the forest and benefits for all communities.

3. **Increase Biodiversity:** Healthy forests are diverse forests. Toronto aims to maximize species diversity as much as possible, as this provides increased resiliency when certain species are threatened. Supporting, sustaining and encouraging native biodiversity through management of natural areas helps maintain the integrity of Toronto’s natural systems for all life forms that depend on these areas. Ensuring diversity of street and park trees helps build up resilience to climate change and pests that target certain tree species over others.

Top ten tree species by leaf area and number of trees (% of total)



³ Sustaining and Expanding the Urban Forest: Toronto's Strategic Forest Management Plan 2012–2022 (City of Toronto, Parks Forestry and Recreation, 2012)

4. **Increasing Awareness:** Educating the community about the tremendous environmental, economic and social and community value of the urban forest is essential.
5. **Promote Stewardship:** Sixty percent of the city's urban forest resource is located on private property. Therefore, the engagement of residents, neighbourhoods, community groups and landowners in tree and forest stewardship is a key priority.

Issues that have an impact on urban forest expansion are city-wide. Collaboration of Parks, Forestry and Recreation, City ABCs, agencies and partners to share information, exchange ideas and leverage resources will be critical to successfully achieving the goals of this Plan.

6. **Improve Monitoring:** In order to effectively manage the city's forest resource; a comprehensive and ongoing understanding of the current state of the forest is required. The urban forest is dynamic and subject to change. Therefore, measurement of its composition, structure, size and health must be routinely undertaken. Enhancing inventory practices and improving data management systems used to store information about the urban forest will enable forest managers to analyze and monitor change over time.

CURRENT GREEN CITY INITIATIVES

The following are current initiatives by the City to help secure additional funding, promote stewardship, and generate community engagement and participation in urban greening initiatives. Between 2004 and 2012, with the help of programs such as these, an average of 100,000 trees were planted per year.

Commemorative tributes

Through its Commemorative Trees and Benches program, the City of Toronto offers members of the public the opportunity to dedicate a tree or bench to individuals, special occasions and organizations.

Community Gardens

The Community Gardens Program is helping to cultivate a dynamic community gardening movement across the City. Allowing those who would otherwise not have access to a garden the opportunity to develop their green thumb is beneficial, as it creates a safe and healthy recreational activity within our parks system, and on other city-owned lands.

Trees Across Toronto

Formed as a response to the City's intention to grow the tree canopy, Trees Across Toronto is a volunteer planting program which aims to re-claim some of Toronto's underdeveloped and underused public space. By planting a variety of trees and shrubs throughout the city, Trees Across Toronto is increasing the accessibility and appeal of Toronto's public space.

Volunteer programs

The City has numerous programs available to individuals looking to get involved. Regardless of age, physical ability or urban forestry knowledge, the City can find a way to allow you to make your mark in the cultivation of Toronto's urban forest.

THREATS TO THE TREE CANOPY

The following are immediate threats to Toronto's urban tree canopy as noted in *Sustaining and Expanding the Urban Forest: Toronto's Strategic Forest Management Plan*.

Invasive Species

Threatening nearly 8.5% of Toronto's tree population or 860,000 trees, the Emerald Ash Borer is of tremendous concern to the future of Toronto's urban greenery. While there is no way to eradicate this pest, individual trees may be protected through the injection of TreeAzin™. In 2012, over 4,000 ash trees (in select parks and street trees) were injected. Thousands of additional candidate trees have been identified for potential injection as well.

The cost of losing such a large number of trees would have a significant environmental and economic impact on the city. The threatened tree population represents roughly \$570 million dollars in structural value. In addition, the City must also consider the amount of work required to remove and dispose of infected trees.

The City of Toronto is also challenged with the threat of the European Gypsy Moth— an introduced defoliating insect that is considered a widespread pest in North America. The caterpillar (larval stage of the insect), eats the leaves of trees making them more susceptible to disease and damage from other insects. In 2007 and 2008, the City of Toronto undertook an integrated pest management program to control the European Gypsy Moth outbreak. This included aerial and ground spray programs to control the outbreak levels in selected areas of the city. Other control measures such as tree banding and vacuuming of egg masses with portable vacuum cleaners were also used.

European Gypsy Moths will continue to be present in the urban forest at varying levels. Populations rise and fall in cycles, dependent on natural controls and weather. In 2012, levels of European Gypsy Moth were seen to rise in some areas of the city. Control measures, including ground based and aerial spraying of the biological control agent *Bacillus thuringiensis* subspecies *kurstaki* (Btk) have been implemented successfully in the past and will be utilized in the future to control high population levels of this insect.

Urbanization Impacts and Sustaining the Urban Forest

Urbanization continues to have impacts on trees and the natural environment. Briefly summarized, some of the impacts are as follows:

- increased development pressure results in fragmentation of available habitat for the growth of trees and other vegetation,
- increased density of development results in less soil volume for root growth and less aerial space for tree crown spread and development,
- salt levels in soils are increased as a result of de-icing salt use in winter months, causing dehydration in trees,
- conflicts with utilities and other service infrastructure result in less area for tree growth,
- increased urbanization also contributes to stream bed erosion and erosion of forest soils caused by increased volume and intensity of run-off, and
- expanding areas of development also limit permeability and soil moisture available to support the growth of trees

Efforts to grow trees along city streets as well as in new subdivisions can be hampered by the severely altered soils following site development. The typical result is site conditions that may limit the growth of large-stature shade trees and many sensitive native species that support biodiversity in the city.

Some of the actions identified for addressing this challenge include: developing mapping systems that support planting activities; monitoring change in canopy coverage; identifying strategic planting areas; increasing compliance with tree protection requirements through enhanced monitoring; and working with green community organizations to realize canopy targets in communities and neighbourhoods.

Climate Change

Though the exact nature of the impacts of climate change on the city's urban forest are not clear, certain management implications and related effects on required resources can be anticipated. It is estimated that in the period between 2040- 2049 Toronto will experience:

- marked rainfall increase in July (80%) and August (50%)
- extreme rainstorm events will be fewer in number but more extreme
- average annual temperatures increase by 4.4°C
- average summer temperatures increase by 3.8°C

Actions to be taken for climate change adaptation include: increasing and adapting tree species planting lists to include more species; developing a database with mapping of robust populations of native species for seed collection; promoting new standards for tree planting in hard landscapes that accommodate adequate soil volume; and collaborating with Toronto Public Health on achieving common objectives such as reducing heat vulnerability in low canopy areas.

Extreme Weather: The Ice Storm

The December 2013 ice storm damaged trees city-wide indiscriminate of age, species, size or condition. The City has taken a phased approach in addressing the damage to the City's street and park tree populations. The City is now transitioning from cleaning up debris to assessing the structural integrity of damaged trees, and addressing issues which threaten public safety. The full impact of the storm is not known at this point. By conducting this assessment the City will have a better understanding of what the impact has been.⁴

Improving the overall health of the forest through actions such as increased community engagement and stewardship and promoting greater species diversity will increase resiliency to forest health threats such as exotic insect pest infestations and extreme weather events.

⁴ "Staff Presentation, Toronto Tree Canopy Roundtable Discussion" Toronto City Hall, April 29th 2014

IN SUMMARY

Toronto's tree canopy and urban forest provide the city with a wide array of environmental, ecological, psychological and economic resources. It is essential that the city work to support and spread understanding of stewardship best practices and emphasize the importance of growing Toronto's tree canopy into the future. This round table discussion was an important step in further strengthening relationships with individuals, organizations and communities to meet this end. The following recommendations will be put forward in the coming Parks, Forestry and Recreation Committee and then to City Council for further consideration.

RECOMMENDATIONS

1. Request the General Manager, Parks Forestry and Recreation to examine the division vernacular used to describe organic refuse, and the possibility of instituting a vernacular which could better describe the city's commitment to environmentally friendly practice and minimizing waste.
2. Request the General Manager; Parks Forestry and Recreation examine the benefit of partnering with not-for-profit organizations towards enhancing private tree planting.
3. Request the General Manager, Parks Forestry and Recreation continue to support volunteer-led community urban forest inventories for trees located on private property in an effort to increase recognition of the importance of private land stewardship
4. Request the General Manager, Parks Forestry engage the City Manager's Office, Strategic Communications in an effort to develop creative public outreach campaigns, such as New York's successful Million Trees campaign.
5. Request the General Manager, Parks Forestry and Recreation to examine how local academic urban forest research could be supported with funding either through direct funding from the City of Toronto or through charitable donations such as through the Toronto Parks and Trees Foundation.
6. Request the City Manager's Office, Corporate Intergovernmental and Agency Relations with the support of the General Manager, Parks Forestry and Recreation work with the Green Infrastructure Ontario Coalition to engage provincial and federal government agencies in an effort to gain increased policy recognition and protection of green infrastructure.
7. Request the General Manager, Parks Forestry and Recreation to begin collecting outcome measures for tree-by-law administration, including infractions and enforcement.
8. Request the General Manager, Parks Forestry and Recreation to explore working with other organizations like Scouts Canada on the feasibility of purchasing trees in bulk
9. Request the General Manager, Parks Forestry and Recreation to explore ways to more prominently feature and account for the protection of Toronto's heritage trees.

APPENDIX

Community Volunteer Contacts

Community Gardens	Solomon Boyé Phone: 416-392-7800 Email: sboye@toronto.ca	
Commemorative Tributes	Ruby Goulart Phone: 416-395-6028 E-mail: commemorativeprogram@toronto.ca	
Trees Across Toronto	General Information	General Information Phone: 311 311@toronto.ca
	Donations	info@torontoparksandtrees.org
	Sponsorship	Phone: 416-392-1018 partnerships@toronto.ca
Volunteering	General Information	Phone: 311 311@toronto.ca
	Youth and Leadership Programs	Phone: 311 311@toronto.ca
	Tree Planting Programs	greentoronto@toronto.ca
	Natural Environment Trail Programs	trails@toronto.ca
	High Park Children's Program	kidsgrow@toronto.ca
	High Park Stewardship Program	stewards@highparknature.org
	Riverdale Farm	farm@toronto.ca

Not-For-Profit Organizations

LEAF	http://www.yourleaf.org/
Ontario Urban Forest Council	http://www.oufc.org/
Toronto Parks and Tree Foundation	https://torontoparksandtrees.org/
Toronto Park People	http://www.parkpeople.ca/
Urban Forestry Stewardship Network	http://ufsn.ca/
University of Toronto Faculty of Forestry	http://www.forestry.utoronto.ca/
Forests Ontario	http://www.forestsontario.ca/
Landscape Ontario	http://www.horttrades.com/
Toronto and Region Conservation Authority	http://www.trca.on.ca/
Tree Canada	https://treecanada.ca/en/
Trees for Life Canada	http://www.trees4life.ca/about-us/

Reports for further information

Urban Park Naturalization: Building Resilience & Sustainability for Toronto's Green Space	https://torontoparksandtrees.org/urban-park-naturalization
Natural Environment Trail Strategy	https://www1.toronto.ca/city_of_toronto/parks_forestry__recreation/community_involvement/files/pdf/trail_strategy.pdf
Toronto's Strategic Forest Management Plan	https://www1.toronto.ca/City%20Of%20Toronto/Parks%20Forestry%20&%20Recreation/Community%20Involvement/Files/pdf/S/forestry_management_plan.pdf
Parks Plan 2013-2017	https://www1.toronto.ca/city_of_toronto/parks_forestry__recreation/community_involvement/files/pdf/parksplan.pdf
Recreation Service Plan 2013-2017	https://www1.toronto.ca/city_of_toronto/parks_forestry__recreation/community_involvement/files/pdf/rsp.pdf

Ways to make an impact through donation

<p>"Recover the Canopy" is an initiative by the Toronto Parks and Trees Foundation, which is meant to give residents and others an opportunity to make a tax-deductible donation to help rebuild Toronto's damaged tree canopy.</p>	Online	https://torontoparksandtrees.org/recover-the-canopy
	Mail	157 Adelaide Street West Suite 123 Toronto, ON M5H 4E7
	Email	info@torontoparksandtrees.org to
<p>"Help Save Toronto's trees from Gypsy Moth Infestation" is an initiative by the Toronto Parks and Trees Foundation, which is meant to give individuals the opportunity to help prevent further destruction and potential costs from the Gypsy Moth infestation.</p>	Online	https://torontoparksandtrees.org/gypsy-moth
	Mail in form	https://torontoparksandtrees.org/uploads/Image/Gypsy_Moth_Donor_Form_1_.pdf
<p>"Give to plant more trees in memory of the Maple Leaf Forever Tree" is an initiative by the Toronto Parks and Trees Foundation, which is meant to give individuals the opportunity to help Toronto commemorate the famed Maple Leaf Forever Tree – the tree which inspired the song 'Maple Leaf Forever' by Alexander Muir.</p>	Online	https://torontoparksandtrees.org/maple-leaf-forever
<p>"Friends of Allan Garden" is a volunteer group of neighbours and citizens who are committed to re-imagining the beauty and cultural prominence of Allan Gardens.</p>	Online	https://torontoparksandtrees.org/friends-of-allan-gardens
	Mail in form	https://torontoparksandtrees.org/friends-of-allan-gardens
<p>"Adopt a Bale" is an initiative by the Toronto Parks and Trees Foundation, which is meant to give individuals the opportunity to help children with food preparation and diet</p>	Online	https://torontoparksandtrees.org/adopt-a-bale
	Mail in Form	https://torontoparksandtrees.org/adopt-a-bale