
DATE: September 1, 2011

REPORT TITLE: **PEEL REGION URBAN FOREST STRATEGY**

FROM: Norma Trim, Chief Financial Officer and Commissioner of Corporate Services

RECOMMENDATION

That the 'Peel Region Urban Forest Strategy', attached as Appendix I of the report dated September 1, 2011, titled "Peel Region Urban Forest Strategy", be endorsed;

And further, that the cities of Mississauga and Brampton, Town of Caledon, Credit Valley Conservation Authority (CVC) and Toronto Region Conservation Authority (TRCA) be encouraged to endorse the 'Peel Region Urban Forest Strategy';

And further, that Regional staff be directed to begin implementation of the actions in partnership with the area municipalities and conservation authorities;

And further, that the Region and its partners work towards development of urban forest targets for Peel Region.

REPORT HIGHLIGHTS

- The urban forest is a dynamic system that includes trees, shrubs and understory plants, as well as the soils that sustain them.
- Peel Region Urban Forest Strategy provides the framework and strategic direction for the protection and enhancement of the urban forest.
- Some characteristics of the urban forest are 45 per cent of the urban canopy cover is located on residential property, over 70 per cent of all trees measured are small, and maple and ash species dominate.
- The urban forest provides a number of environmental benefits or services including cooling through shade, pollutant removal, and storing carbon from greenhouse gas emissions.
- A workshop with representatives from community groups, various government departments, institutions, and businesses was held in November 2010.
- Of the 24 actions identified to maintain and grow the urban forest, three short term actions are:
 - to form an Urban Forest Working Group to work towards achieving the urban forest vision,
 - develop regional and area municipal urban forest targets, and
 - develop and implement area municipal urban forest management plans.

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DISCUSSION

1. Background

In 2007, the TRCA, Region of Peel, City of Mississauga, City of Brampton, Town of Caledon, and CVC collaboratively initiated a study of the urban forest. The urban forest was studied across the jurisdictional boundaries of the cities of Brampton and Mississauga and for Town of Caledon's most urban settlements: Bolton and Caledon East. Peel Region's urban forest, located on public and private property, is a dynamic system that includes all trees, shrubs and understory plants, as well as the soils that sustain them. It is a diverse mix of intensively managed individual trees found in areas such as parks, road right-of-ways, and private yards; as well as extensively managed natural areas stretching along valley corridors and upland woodlots in the urban area.

The study has technical and strategy components. The technical component documented and assessed the structure of Peel Region's urban forest and its capacity to mitigate climate change, reduce air pollution, and curb energy use. The strategy component provides direction on managing the urban forest to address climate change and sustainability within Peel Region. As part of Climate Change funding to the TRCA, the TRCA has managed the project and prepared the final 'Peel Region Urban Forest Strategy' attached as Appendix I.

The technical analysis was carried out at the area municipal scale and documented in 'Technical Reports' for each area municipality (copies can be obtained from the Integrated Planning Division). The technical analysis was undertaken by the United States Department of Agriculture (USDA) Forestry Service using the 'iTree' suite of tools. 'iTree' has been used by other Greater Toronto Area (GTA) municipalities including City of Toronto, three area municipalities within the Region of York, Town of Ajax, and Town of Oakville to assess the structure of their urban forests, thereby providing a sound basis for comparing the state of the urban forest in the GTA. 'iTree' (formerly known as UFORE) was created by the USDA Forestry Service and was recommended as the best available modeling software for the purposes of the study. 'iTree' is a computer model that calculates the structure, environmental effects and values of urban forests. The results of the analysis can be used for a variety of urban forest management purposes as well as education about the value of the economic, social and environmental benefits of an urban forest.

The 'Peel Region Urban Forest Strategy' provides the framework and strategic direction for the protection and enhancement of the urban forest, as natural infrastructure. The 'Peel Region Urban Forest Strategy' presents the vision, goals and actions required to guide and engage individuals and organizations in urban forest management, and to ultimately contribute to a healthier, more sustainable Peel Region. This is directly related to Regional Council's Strategic Plan Vision and achieves environment Goal 1.3 to improve air quality as well as mitigate and adapt to climate change. Term of Council Priority number 1, is to reduce greenhouse gas emissions to manage the impacts associated with climate change. Urban forestry has been identified as one means to mitigate and adapt to climate change in the Peel Climate Change Strategy (Action Item 2.4).

2. Peel Region's Urban Forest Today

a) Vegetation Resource Assessment

Assessing the urban forest was undertaken through a combination of field work and the use of satellite imagery. The field work documented the characteristics of the vegetation in random sample plots throughout the urban area. Some of the characteristics included

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the type of vegetation, species, and size. This provided statistically reliable information to estimate tree composition, leaf area and environmental benefits. The canopy cover was assessed by interpreting satellite imagery. Understanding canopy cover provides information on the spatial extent of the urban forest. Combined with field plot data the composition of the urban forest is obtained leading to a better understanding of the health and functions of the urban forest. The results of the urban forest technical analysis conducted in the municipalities of Mississauga, Brampton and Caledon are summarized here at a regional scale.

MEASURE	RESULT	COMMENT
Canopy Cover	<ul style="list-style-type: none"> • Brampton: 11 % • Caledon East: 29 % • Bolton: 17 % • Mississauga: 15 % 	45% of Peel Region's urban canopy cover is located on residential property; residents are therefore the most influential stewards of urban forest.
Leaf Area Density (m2/m2)	<ul style="list-style-type: none"> • Mississauga: 0.78 • Brampton: 0.54 • Caledon East: 2.7 • Bolton: 0.8 	There is a positive relationship between leaf area density and the volume of benefits provided to residents (more leaves = more benefits).
Tree Size	Over 70 percent of all trees measured are small (less than 15 cm in stem diameter).	Environmental, social and economic benefits increase with tree size.
Species Composition	Maple and ash species dominate the urban forest; a number of exotic invasive plant species are also common.	Greater species diversity will decrease the risk of large scale forest loss in the event of disease and pest outbreaks.

As a comparison, the Town of Oakville has a canopy cover of about 29 per cent, the City of Toronto has about 28 per cent, and New York, New York has about 24 per cent.

MEASURE	RESULT	COMMENT
Energy Savings	Energy savings of over \$2.5 million annually to residents through shading in summer and acting as wind breaks in winter.	A greater number of mature trees and proper tree placement around residential buildings will provide even greater energy savings.
Carbon	19,000 tonnes of carbon sequestered and 400,000 tonnes of carbon stored annually by urban trees in Peel Region.	The urban forest plays an important role in both local and global climate change mitigation and adaptation.
Pollution	855 tonnes of air pollution removed annually by urban trees in Peel Region; total removal value is approximately \$9.1 million.	The urban forest provides human health benefits and health care savings by reducing local air pollution.

b) Resource Management and Community Framework Assessment

Managing the urban forest sustainably requires an understanding of the current resource management approach and engagement of the community. The resource management approach includes policies, programs, staff and budgets that affect or are affected by the urban forest at all levels of government and by academic institutions. It

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is recognized that management of the urban forest is primarily an area municipal responsibility. However support for a healthy urban forest is needed from upper levels of government. There is limited involvement by Provincial and Federal governments to recognize and support the management of the urban forest. The Region has supported the urban forest through its Official Plan long-term policy direction for protecting the environment as well as recognizing the contribution of the urban forest to climate change mitigation and adaptation, air quality, urban heat island reduction, and community health and well-being. Specifically, section 2.5.2.9 of the Regional Official Plan states "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". As large, mature trees are underrepresented in the urban forest, one policy gap is to provide additional tools that will allow trees to reach maturity and provide greater benefits to the community.

The people who live and work in the community also have a role in the planning and caring for the urban forest. The care and management of the urban forest, especially as most of the existing tree cover is provided on residential lands, needs the involvement of landowners and tenants; adults and children; corporations and institutions; as well as businesses in the tree industry. A specific focus on urban forest appreciation and conservation is missing from education programs.

3. Peel Region's Urban Forest Tomorrow

With the information on the physical characteristics and institutional framework of the urban forest, a workshop was held in November 2010 with 38 representatives from community groups, various government departments, institutions, and businesses to develop a framework for the 'Peel Region Urban Forest Strategy'. The workshop participants identified the key elements of a vision for a sustainable urban forest as well as identified and prioritized actions needed in the short-term to build the foundation for management of the urban forest over the next 30 years and beyond. The suggestions, ideas and discussion at the workshop provided the foundation for the specific actions in the 'Peel Region Urban Forest Strategy'. The strategic vision describes the future urban forest that the Region and its partners are striving to achieve:

"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."

The 'Peel Region Urban Forest Strategy' is intended to be a living document that is revisited, refined and updated at regular five year intervals to track progress towards achieving the strategic vision. The principles to guide future actions focus on:

- a) recognizing that a sustainable urban forest promotes quality of life,
- b) residents not only are influential stewards but must benefit equally from the ecosystem service provided by the urban forest,
- c) coordinated action and stable funding will be necessary for urban forest management, and
- d) municipal governments should lead by example.

The eight goals identified to achieve the vision are:

1. Facilitate partnerships and coordinate action across Peel Region
2. Develop urban forest targets
3. Develop and implement urban forest management plans

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4. Create a comprehensive urban forest policy framework
5. Implement effective monitoring and research programs
6. Gain formal support from upper level government for sustainable management of the urban forest as natural infrastructure
7. Secure long-term funding for urban forest management
8. Provide comprehensive training, education, and support for residents and members of the public and private sectors

There are 24 actions identified to achieve these goals. Within the first two years, three key actions are to develop an interagency Urban Forest Working Group to work together to achieve the vision; develop regional and area municipal urban forest targets; and develop and implement area municipal urban forest management plans. The work undertaken to assess the existing urban forest for this strategy provides the initial step towards developing urban forest targets. However, in order to set targets, the area for potential forest cover requires a more refined assessment that considers the existing and future use of land. That assessment was beyond the scope of the project. As well, forest targets could include not only tree canopy cover but also other factors such as species composition, age distribution as well as considering neighbourhood characteristics to provide an equitable distribution of benefits.

Two other short term actions are to encourage the Association of Municipalities of Ontario and the Federation of Canadian Municipalities to approach provincial and federal agencies to become involved in urban forestry; and to identify critical research and information gaps such that the management of the urban forest can be carried out effectively and to mitigate the threats and impact to this resource.

4. Next Steps

The implementation of the 'Peel Region Urban Forest Strategy' will require continued cooperation and coordination with area municipalities, CVC, and TRCA as well as the wider community. Management of the urban forest will principally remain an area municipal responsibility. The boards and councils of the organizations who played a key role in developing this document are encouraged to endorse the 'Peel Region Urban Forest Strategy' and participate in the urban forest working group. The Urban Forest Working Group should be initiated with an immediate task to develop an implementation plan.

As a corporation, there is opportunity to implement recommended actions through the activities and programs of the Regional departments of Health Services, Public Works and Employee and Business Services to address reductions in green house gas emissions and urban heat island effects. Urban forest targets are needed to measure success in these areas. As a next step, urban forest targets should be identified for regional properties as well as at the regional scale as an interim measure until area municipal targets are developed.


FINANCIAL IMPLICATIONS

There are no direct financial implications. Indirectly, Regional staff time will be allocated towards participation on the Urban Forest Working Group. Future new programs will be budgeted for through the annual budget process. The Region's Urban Forest Strategy will be incorporated into future budgets and may result in changes in how the Region's investment in conservation authorities is spent.

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PEEL REGION URBAN FOREST STRATEGY**CONCLUSION**

The TRCA prepared the 'Peel Urban Forest Strategy' as part of climate change work being undertaken in the Region. Working with the Area Municipalities and CVC, technical studies were completed to assess the form and functions of the urban forest in the cities of Mississauga and Brampton and communities of Bolton and Caledon East. These technical studies along with the involvement of interested stakeholders informed the vision, principles, goals and actions of the 'Peel Urban Forest Strategy'. The Region and partners will continue to work in the spirit of collaboration to implement the 'Peel Urban Forest Strategy' to collectively manage the urban forest so that it will be resilient and healthy into the future to provide the range of benefits that contribute towards a healthy, livable community.




Norma Trim
Chief Financial Officer
and Commissioner of Corporate Services

Approved for Submission:

D. Szwarc, Chief Administrative Officer

For further information regarding this report, please contact Arvin Prasad, Director of Integrated Planning at extension 4251 or via email at arvin.prasad@peelregion.ca

Authored By: Janet Wong 

c. Legislative Services

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