
TO: GENERAL COMMITTEE

SUBJECT: URBAN FOREST STRATEGY

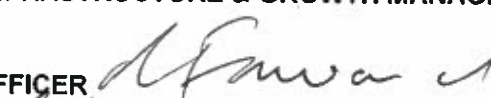

WARD: ALL

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RECOMMENDED MOTION

1. That the Urban Forest Strategy, as identified in Staff Report RPF0002-14, be adopted to guide the development of the City's Urban Forest Management Plan.

PURPOSE & BACKGROUND

2. The purpose of this Staff Report is to provide Council with an overview of an Urban Forest Strategy and the key objectives that are proposed to guide the future creation of an Urban Forest Management Plan for the City of Barrie.
3. Copies of the Urban Forest Strategy are available in the Councillor's Lounge.
4. An Urban Forest Strategy is a policy framework that sets broad direction for forest policy and makes forest sustainability the primary objective of forest management planning. The Urban Forest Strategy, if approved by Council, will:
 - a) Provide direction on all aspects of the Urban Forest Management Plan;
 - b) Set goals and objectives for the long term sustainability of the urban forest;
 - c) Set measurable targets for success;
 - d) Project short and long term resource requirements to meet those goals; and
 - e) Create operational efficiencies and/or reduce the long-term cost to the municipality to manage the urban forest.
5. On November 5, 2012, City Council adopted Motion 12-G-286 regarding the Urban Forest Strategy which included the following:
 - i) "That the concept of an Urban Forest Strategy be supported.
 - ii) That staff in the Engineering Department report back to the Environmental Advisory Committee when a draft Urban Forest Management Strategy is developed.
 - iii) That implementation for the Urban Forest Management Strategy be considered in the 2014 Business Plan process."

6. On November 4, 2013, City Council adopted Motion 13-G-264 regarding the Barrie FruitShare program as follows:
 - i) "That the Urban Forester work with the FruitShare Steering Committee to develop options to assist the FruitShare Program by integrating the planting of nut and fruit trees into the Urban Forest Strategy and report back to General Committee."
7. Staff presented background information on Barrie's urban forest, current policies, and draft objectives and strategies to the public on May 30, 2013 at a Public Information Centre. A questionnaire and comment sheet was provided to obtain input from residents. Approximately 30 residents attended the information centre and a summary of their comments can be found in Appendix "A" of the Urban Forest Strategy.
8. Staff presented the Draft Urban Forest Strategy to the Environmental Advisory Committee (EAC) on August 14, 2013. Comments from the EAC were reviewed and incorporated into the strategy.

ANALYSIS – URBAN FOREST STRATEGY

9. The proposed Urban Forest Strategy includes the following six Strategic Objectives:
 - a) Tree Inventory and Assessment;
 - b) Management of City Forests;
 - c) Level of Service;
 - d) Customer Service/Service Delivery;
 - e) Tree Protection and Management; and
 - f) Forest Health and Pest Management
10. Strategic Objective 3.1 "Tree Inventory and Assessment" includes an update to the tree inventory and assessment of the current forest canopy cover, setting targets for future forest canopy area, street and park tree diversity and age class distribution.
11. Strategic Objective 3.2 "Management of City Forests" includes objectives for the development of forest succession plans on city owned forested parcels, non-native invasive species management plans, mapping and education program for encroachment issues on city lands, and provision for opportunities to plant fruit and nut trees on city open space lands.
12. The Urban Forest Strategy Objective 3.2.4 proposes staff working with the FruitShare Steering Committee to develop options to assist the FruitShare Program by integrating the planting of nut and fruit trees on City open space lands. Staff would meet with the Fruitshare Steering Committee to discuss options, identify specific areas and develop a partnership with FruitShare Barrie early in 2014. The resulting program would be included in the Urban Forest Management Plan.
13. Strategic Objective 3.3 "Level of Service" is a review of the current maintenance practices (i.e. inspection program, maintenance cycle and protocols for prioritizing service requests). The inspection and maintenance programs would be reviewed and efficiencies developed to ensure that trees are inspected and pruned in a systematic manner, reducing the long term costs of tree maintenance for the city.

14. Strategic Objective 3.4 "Customer Service/Service Delivery" includes a review and optimization of the delivery of forestry services. Organization of forestry staff, and response protocols would optimize how staff receive and administer service requests, with the intention of streamlining programs to deliver better services. In addition, objectives to increase public education would include:
 - a) Expansion of the forestry information on the city's website;
 - b) Making residents aware of programs for public and private forestry enhancement; and
 - c) Encouraging people to plant and maintain healthy trees on their own properties.
15. Strategic Objective 3.5 "Tree Protection and Management" includes several objectives related to providing the best protection and management of Barrie's urban forest. Tree By-laws and associated protection policies would be regularly updated, staff would review processes related to tree protection on construction projects (from design to implementation), and investigate significant woodlot designations for trees on private and public lands.
16. Strategic Objective 3.6 "Forest Health and Pest Management" relates to the preparation and response to current and future forest health issues. Exotic species like Emerald Ash Borer pose a current threat to the urban forests of Ontario, while other species such as Asian Long-horned Beetle are a future threat. Current programs would be reviewed and updated regularly to be prepared for these threats. In addition, forest health would be impacted by future changes to the climate.

ANALYSIS – CURRENT FOREST CONDITION

17. The City of Barrie currently includes approximately 1,600 hectares of forested areas on private (62%) and public (38%) lands. Outside of the existing forested areas, an additional 140,000 individual trees are mapped, of which 33,000 are on City right of ways, 11,200 are in open space parkland and 95,800 are on private lands. Management of the urban forest within the City of Barrie is vital on both public and private lands to enhance our urban forest.
18. The City of Barrie responds to approximately 2,000 forestry work order requests for pruning, fertilizing and other arboriculture work each year. The City also plants approximately 1,000 large calliper trees in the Tree Planting Program (on streets and in parks). Developers are also responsible for planting trees in new subdivisions and on industrial and commercial properties as a result of legal agreements with the City of Barrie that are part of the development process.

ANALYSIS – PROPOSED IMPLEMENTATION

19. Upon approval of the Urban Forest Strategy, staff is proposing the initial step in the development of the Urban Forest Management Plan would be to complete a comprehensive tree inventory. Following a 2001 detailed inventory of city street trees and several high profile parks (Centennial, Heritage, Allandale Station, Sunnidale and Little Lake), data collection is still required for the majority of the parks and environmental protection areas. This data inventory, as collected, is updated annually by staff as new trees and replacement trees are installed.
20. The "gap" tree inventory data collection can be accomplished through a variety of work programs and these are described as follows:
 - a) Staff could retain a consultant to do the required update and/or create all of the tree inventory data. For a municipality the size of Barrie, the fees for such work have been estimated at approximately \$150,000 - \$200,000. This work could be completed over a one year period.

- b) Staff could hire additional forestry co-op students to complete the inventory collection in one year. These new student hires would result in a one-time cost increase in the Operating budget of an estimated \$55,000 for 2-four month positions and 2-eight month positions.
- c) Staff could collect the inventory data over a longer period of time through the hiring of forestry co-op students over a 2 or 3 year period using existing funding within the Operating Budget. Although this funding would be allocated from both the Urban Forestry and Parks Planning and Development positions, there would be no impact to the annual Operating budget. However, this would also focus resources away from other Park related activities such as the data collection of parks assets, and support with annual forestry projects and tree planting programs.
- d) With any of the above three alternatives, each requires the acquisition of "leaf-on" satellite imagery for the assessment of total canopy cover within city limits. This work has been estimated at \$5,000.

Staff intend to implement the above "alternative C" as there are no financial implications to the City's existing Operating Budget.

- 21. The collection of a tree inventory could be further enhanced through the development of partnerships with post-secondary educational institutions to have students collect and/or analyze tree inventory data as part of their 4th year thesis or post-graduate studies. For example, staff has developed a data sharing agreement with Lakehead University to facilitate a forestry graduate student project that involves the acquisition and assessment of tree data on private lands. These types of graduate student projects reduce the cost and workload for City staff to collect and analyze urban forestry data. Implementation of the Urban Forest Strategy would commence upon approval by Council.
- 22. In 2014, the collection of the detailed tree inventory data would commence using Urban Forestry and Parks Planning Co-op Student positions. This inventory collection would continue into 2015 with the completion of the written documentation portion of the strategy proposed in 2016. The Urban Forest Management Plan would then be drafted and presented to General Committee for consideration in 2017. A detailed timeline from the Urban Forest Strategy is included in Appendix "A" of this Report for reference.

ENVIRONMENTAL MATTERS

- 23. Proper selection of tree species and planting location, good maintenance practices and protection standards will improve the health of public trees, prolonging their lifespan and improving the environmental benefits to the City of Barrie.
- 24. Trees are a vital component of the urban landscape. They provide many important roles within the City of Barrie, including but not limited to:
 - a) Water conservation;
 - b) Energy conservation;
 - i. Reducing summer air temperature by providing shade
 - ii. Reducing cold winter winds by acting as a wind break
 - c) Economic benefits;
 - i. Increasing tourism opportunities
 - ii. Increasing property values
 - iii. Increasing community profile (e.g. Communities in Bloom)

- d) Improving community health;
 - i. Reducing air pollution
 - ii. Reducing harmful ultra-violet light exposure
 - iii. Reducing noise pollution
 - iv. Reducing greenhouse gases
- e) Reducing soil erosion;
- f) Providing wildlife habitat; and
- g) Increasing the beauty of the urban landscape.

ALTERNATIVES

25. The following alternatives are available for consideration by General Committee:

Alternative #1

General Committee could choose not to approve the Urban Forest Strategy and maintain status quo (i.e. to continue with Staff's annual work program without overall guiding policy).

This alternative is not recommended as it does not position Barrie at the forefront of environmental issues. Urban Forest Strategy links with Council's Strategic Priorities and provides for a long term plan to enhance Urban Forest Management Plan at the City of Barrie.

Alternative #2

General Committee could alter the proposed recommendation by directing staff to make changes to the proposed Urban Forest Strategy.

This alternative is not recommended as the proposed Strategy and associated strategic objectives were developed through consultation with the public and the Environmental Advisory Committee.

Alternative #3

General Committee could choose to direct staff to request Operating budget funds to address the "gap" in the tree inventory data.

This alternative is not recommended as the process proposed utilizing forestry coop students will address the "gap" in the tree inventory data at a lower overall cost to the City.

FINANCIAL

26. There are no financial implications for the Corporation resulting from the proposed recommendation. The proposed Strategy is intended as a guiding document to develop an Urban Forest Management Plan with an anticipated completion in 2017-18. The Urban Forest Management Plan would be presented to Council for approval once complete and any future service level changes or budget requests resulting from the implementation of the future Urban Forest Management Plan would be considered in subsequent future Business Plans. Work plans for 2014 are proposed to include staff time to develop components of the strategy but there will be no additional financial resources required for 2014. The cost for satellite imagery used in the tree canopy assessment identified in this staff report will be included for consideration in future Business Plans.

LINKAGE TO COUNCIL STRATEGIC PRIORITIES

27. The recommendations included in this Staff Report support the following goals identified in the 2010-2014 City Council's Strategic Priorities:
- Position Barrie at the Forefront of Environmental Issues
 - Enhance Public Spaces throughout the City
28. The Urban Forest Strategy ensures the appropriate direction for City staff to protect and enhance the City's "green infrastructure".
29. In addition to the environmental benefits of sustainable forest management (tree planting and maintenance in parks, streets and open spaces), healthy trees and forests enhance the beauty and overall aesthetics of the City of Barrie.

APPENDIX "A"

Urban Forest Strategy – Proposed Implementation Schedule

Target Year(s)	#	Objective	Financial	Anticipated Financial Impacts and Sources
annual	3.5.5	Recommend the inclusion of an environmental planning skill set into the existing Planning Department staff complement	-	- existing staff training / conference budgets
annual	3.6.1	Continuation and regular update of the Pest Preparedness Program	-	- proactive management planning reduces impact and costs over long-term (e.g. EAB Program)
annual	3.6.2	Implementation and monitoring of the Emerald Ash Borer Program	\$70-289K / year, 2011-2026	- long term operating budget projections from EAB Program approved in 2011. To be reviewed and adjusted annually, including external funding sources investigations.
annual	3.6.3	Assessment of the Watering Program/Policy for newly planted trees	-	- efficient watering program reduces long-term tree planting budget costs
annual	3.6.4	Identification and planning for future forest health issues and climate change	-	- proactive management planning reduces impact and costs over long-term (e.g. EAB Program)
2014	3.2.4	Provide opportunities for the planting of fruit and nut trees on City open space lands	-	- volunteer program through FruitShare Barrie.
2014	3.3.1	Inspection Program	-	- staff time efficiencies created through proactive inspection program (reduces future service requests and related response). Liabilities reduced as issues are addressed prior to tree failures.
2014	3.3.2	Maintenance (Pruning) Cycle	-	- staff time efficiencies created through proactive maintenance pruning program (reduces future service requests and related response)
2014	3.3.1	Protocol for Prioritizing Service Requests	-	- staff time efficiencies created through implementing standard protocols for workload assignment. Improved relations with residents regarding how priorities are assigned to workloads

Target Years	#	Objective	Financial	Anticipated Financial Impacts and Sources
2014	3.4.1	Organization of Forestry Section	-	- efficiencies gained in staff time by reducing workload overlap, bundling maintenance contracts into larger projects with reduced unit rates
2014	3.4.2	Response Protocols	-	- staff time efficiencies created through implementing standard protocols for workload assignment. Improved relations with residents regarding how priorities are assigned to workloads
2014	3.4.3	Public Education and Information Availability	-	- reduced staff time responding to public inquiries as a result of greater information availability and transparency
2014	3.4.4	Expand and improve the urban forestry information on the city's website to offer more information and resources	-	- reduced staff time responding to public inquiries related to City programs and general urban forestry information
2014	3.5.2	Review and update Tree By-laws every five years to ensure they remain up-to-date with current needs	-	- reduced administrative costs associated with By-law enforcement
2014	3.5.3	Formalize the review process for all city capital projects with tree impacts and perform regular and documented site inspections	-	- clarification of review process reduces time associated with reviews and design revisions for projects
2014	3.5.4	Increase resources for city inspection and oversight of tree protection requirements on all project types, and provide training for city staff inspectors	-	- information availability and training reduces future issues, resulting in long-term cost reductions
2015	3.2.2	Non-native invasive species management	-	- partnerships, external funding sources (e.g. Trees Canada), federal and provincial grants
2015	3.2.3	Mapping of encroachments and education program for residents	-	- existing data set, partnerships, external funding sources and staff time
2015	3.4.5	Increase opportunities for public education on the benefits of protecting and managing trees on private property	-	- increased knowledge base of general public anticipated to increase the quality and quantity of the urban forest on private lands.

Target Years	#	Objective	Financial	Anticipated Financial Impacts and Sources
2016	3.1.1	Tree Inventory and Forest Canopy Assessment		- partnerships, external funding opportunities, Coop student data collection, staff time.
		<i>Satellite Imagery Acquisition</i>	\$5,000	
		<i>Finalize Street tree inventory update Parkland / Open Space trees</i>	-	
		<i>Forested area inventory</i>		
		<i>Private Land tree inventory</i>		- partnerships, volunteers
2017	3.1.2	Forest Cover and Canopy Area Objectives	-	- future reduction in operating costs due to focused planting and maintenance efforts in areas with declining canopy cover
2017	3.2.1	Forest Succession Plans	-	- management of city forests creates a minor source of potential revenue to be used to offset forestry operating costs. Reduction in future maintenance costs for dead and declining trees in natural areas (trails, forest edges)
2017	3.5.1	Investigate Significant Woodlot Designation for Forests on Private and Public Lands	-	- function of identifying and planning for future management/improvements of the urban forest.
2034	3.1.3	Street and Park Tree Diversity Objectives	-	- future reduction in operating costs due to a healthier, more diverse tree inventory being less susceptible to the impacts of forest pests. It is anticipated to take at least 20 years to achieve this goal.
2064	3.1.4	Age Class Distribution Objectives	-	- normalization of annual maintenance/operating costs as tree inventory becomes more even aged (rate of mortality, removal and replacement evens out over time). It is anticipated to take approximately 50 years to normalize the age class distribution of street and park trees.

Development of a comprehensive Urban Forest Management Plan is targeted for completion in 2017 following the completion of a detailed tree inventory and other components of the Urban Forest Strategy that will be integral to the development of the Plan.