An urban forest management plan is a functional document that provides regional context, outlines current resource attributes and management practices, identifies goals and sets future direction for achieving goals.
Sections within the Plan

Section 1
Defines the urban forest and its importance.

Section 2
Outlines the 4 pillars of urban forestry and identifies stakeholders consultation

Section 3
Our vision and goals

Section 4
Policy framework including legislation, history of forest development and biophysical conditions

Section 5
Current state of our urban forest

Section 6
Key challenges

Section 7
Monitoring progress and measuring success
The Management Plan is the road map to where we want to go.

The Service Plan is the financial engine that drives the Management Plan.

Table below is from Section 7 of the plan; monitoring progress and measuring success

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Tactical Objective</th>
<th>Indicator</th>
<th>Baseline Condition (2011)</th>
<th>Data Source / Methodology / Responsibility</th>
<th>Frequency of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Forest Management Plan</td>
<td>Maintain a publicly available strategic forest management plan</td>
<td>Current urban forest management plan for the city</td>
<td>First Plan completed in 2012</td>
<td>Various data sources: Urban Forestry database, i-Tree Eco, GIS.</td>
<td>Every 10 years</td>
</tr>
<tr>
<td>Operational Plan (Service Plan)</td>
<td>Annually updated operational plan (service plan)</td>
<td>Comprehensive operations plan with detailed components on all areas: Area Tree Maintenance, EAB, etc.</td>
<td>Updated each year with budget request</td>
<td>Approved Operating and Capital budgets</td>
<td>Annually</td>
</tr>
</tbody>
</table>
The urban forest is the population of trees, shrubs and other flora growing in an urban area.

- 10.2 million trees in Toronto with a structural asset value of $7 Billion
- 4.1 million trees along streets and in 8,200 hectares of parks, ravines and natural areas
- 6.1 million trees on private property
- Over 116 different species of trees
Toronto has a significant population of young trees

- 68% are less than 15.2 cm in diameter
- 18% are between 15.2 cm and 30.6 cm in diameter
- 14% are greater than 30.6 cm in diameter
Existing Urban Tree Canopy (UTC)

Average tree cover by neighbourhood
Trees in commercial areas are good for business

Economic Benefits

Cool streets and homes in the summer & protection from winds in the winter (Reduced heating/cooling costs)

Trees increase property values by up to 27%

Provides 28.2 million/year in ecological services including air pollution removal, energy savings and carbon sequestration
Help mitigate the effects of climate change

Trees protect soils from erosion

Provide shelter and food for a wide variety of wildlife at home in the city

Improve water quality
Community Benefits

- Contact with nature has been shown to lower blood pressure and cholesterol levels
  - Supports educational opportunities
- Protects us from the sun, blocking ultraviolet radiation
  - Trees improve air quality
- Trees help to promote physical activity
The 10-Year Vision:
A healthy and expanding urban forest, incorporating sound urban forestry practices and community partnership

- Fosters economic prosperity
- Enhances quality of life
The plan continues from Our Common Grounds - 2004

Informed by the results of the tree canopy study published in Every Tree Counts: A portrait of Toronto’s Urban Forest – 2010
The Strategic Urban Forest Management Plan supports council adopted environmental initiatives. Select initiatives are identified below with dates when council granted approval. Note that the shade policy and shade guidelines were approved by the board of health.

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Council Approval Date</th>
<th>Relevance (highlights)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official Plan</td>
<td>2002 (Council) 2006 (OMB approval)</td>
<td>Preserve and enhance the urban forest, protect natural systems, support biodiversity and increase canopy</td>
</tr>
<tr>
<td>PFR Strategic Plan: Our Common Ground</td>
<td>2004</td>
<td>Directed that an urban forest management plan be implemented to increase canopy cover to 30%-40%</td>
</tr>
<tr>
<td>Climate Change Clean Air And Sustainable Energy Action Plan</td>
<td>2007</td>
<td>Recommendations aimed at reducing green house gas and smog causing pollutants. Affirmed council's commitment to increase tree canopy</td>
</tr>
<tr>
<td>Climate Change Adaption Strategy</td>
<td>2008</td>
<td>Acknowledge that actions to expand and maintain tree canopy will lessen effects of climate change</td>
</tr>
<tr>
<td>Original Urban Forestry Service Plan</td>
<td>2008</td>
<td>Outlines financial resources required and activities to efficiently and effectively manage, protect and sustain Toronto's urban forest</td>
</tr>
<tr>
<td>City of Toronto Shade Policy &amp; Shade Guidelines</td>
<td>2007 policy 2010 guidelines (Board of Health)</td>
<td>Supports provision of shade which contributes to a healthier sustainable city</td>
</tr>
<tr>
<td>Toronto Green Standard</td>
<td>2010</td>
<td>Performance measures for new development that implements sustainability policies of the Official Plan</td>
</tr>
<tr>
<td>Tree By-laws (street trees, private trees &amp; ravines and natural features)</td>
<td>2011 (revisions approved)</td>
<td>Regulatory tools to implement Official Plan policies and protect the urban forest</td>
</tr>
<tr>
<td>Revised Urban Forestry Service Plan</td>
<td>2012</td>
<td>Revised financial strategy to achieve the City's Tree Canopy goals and implement the Emerald Ash Borer strategy which was adopted as a consolidated funding plan</td>
</tr>
</tbody>
</table>
1. Increase Canopy Cover

Current Canopy cover 26.6% - 28%

Target 40 %
2. Achieve Equitable Distribution

Legend

Tree Cover
Percent of total neighbourhood area

- 7.7% - 17.3%
- 17.4% - 26.4%
- 26.5% - 34.6%
- 34.7% - 42.7%
- 42.8% - 61.8%

Source: City of Toronto; Policy & Standards, Forest Management; Social Policy Analysis & Research
Copyright (c) 2010 City of Toronto. All Rights Reserved.
Published: December 2010
Prepared by: Social Policy Analysis & Research
Contact: spar@toronto.ca
Toronto Forest Canopy & Heat Vulnerability by Neighbourhood

Parks, Forestry & Recreation
Created by Urban Forestry, June 2012
3. Increase Biodiversity

- Healthy forests are diverse forests
- Ensuring diversity helps build up resilience to climate change and pests
4. Increase Awareness

Urban Forestry Services

Trees Need Water

One of the key elements trees need to survive is water. Water is used by trees to carry nutrients obtained from the soil throughout the tree. During periods of hot, dry weather there is often less moisture available. In response to the surrounding soil being dryer than normal, trees will slow their normal process of absorbing water through their roots and releasing it through their leaves in order to avoid drying out. This built-in survival mechanism allows trees to deal with hot, dry weather but this cannot be sustained for extended periods of time.

Learn More

What is the Urban Forest?

Toronto is a city of trees. More than four million trees dominate our ravines. Line our boulevards and beautify our parks. Six million more trees are located on private property.

Learn More

Toronto’s Urban Forest for now and forever!

The goal of Toronto’s Urban Forest is to improve the health, diversity and resilience of the trees and forests of the city. The City of Toronto and the Urban Forestry Community of Practice are working together to ensure that Toronto’s urban forest is maintained and enhanced for the benefit of all residents.

Learn More

Tree Protection Policy and Specifications for Construction Near Trees

Urban Forestry

Toronto Green Standard

Making a Sustainable City Happen

For New Low-Rise Non-Residential Development (Buildings 3 storeys or less)
5. Promote Stewardship

- The engagement of residents, neighbourhoods, community groups and landowners in tree and forest stewardship is key.
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.

- 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.
How we get it done – 4 pillars of Urban Forestry

1. Maintenance

2. Planting

3. Protection

4. Planning
Examples – Tree Maintenance

Area Maintenance

Street Tree Pruning

Street Trees
- Individual tree pruning – reactive based, less productive
- Area maintenance – proactive based, 150% increase in service delivery

Trees in Parks and Ravines
- Dead or broken branches overhanging playgrounds, benches, etc.

Ravine Maintenance

Emergency Response
Examples of Planting and Urban Forest Renewal Activities

- Large Tree Planting
- Community Tree Planting Events
- Natural Environment Trails Initiative
- Controlled Burning
- Parkland Stewardship
Examples of Tree Protection & By-law Infractions

a) Storage of materials within the tree protection zone

b) Piling excavated soil within the tree protection zone

c) Tree Protection/Hording

Most of the time people are unaware of the damage they are causing.
Forest Policy & Planning

“Fail to plan – you plan to fail”
Proactive planning is far more efficient than reactive mitigation

Maintain a multi year forest management plan

Develop forest policy and standards

Forestry Data Management Centre

- Receive calls, enters work into the work order management system
- Control/measure performance stats

Forestry website

Design new tree planting details
Planting
- 100,000 trees on average annually
- 82% survival rate
- Average cost to plant bare root $150/tree
- Average cost to plant large tree $285/tree

Protection
- Over 10,000 plan reviews in 2012 under 4 by-laws:
  - Private Tree by-law
  - City Tree by-law
  - Ravine and Natural Feature by-law
  - Parks by-law
- 75% application review rate
- Average cost per file $1068.00

Maintenance
- 438,306 Maintenance activities in 2012
- 31% increase in productivity from 2011
- Backlog for service reduced by 40% since 2007
- Average cost per tree maintained $139.00

Total Gross Budget - $55.2 million
326 FTE’s and 200 Contract Staff
## Service Deliverables

### Efficiencies/Operating budget

<table>
<thead>
<tr>
<th>Core Services</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare Root Planting</td>
<td></td>
<td></td>
<td>$150/Tree</td>
</tr>
<tr>
<td>Large Tree Planting</td>
<td></td>
<td></td>
<td>$285/Tree</td>
</tr>
<tr>
<td>Protection</td>
<td></td>
<td>$1,068/Plan Review</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive</td>
<td></td>
<td></td>
<td>$139/Tree</td>
</tr>
<tr>
<td>Reactive</td>
<td></td>
<td></td>
<td>$424/Tree</td>
</tr>
</tbody>
</table>

- Resources are maximized with respect to budget capability
- 40-45% of service delivery is currently outsourced

### Service Outputs per Standard (Legislated/Council Mandated/Industry)

<table>
<thead>
<tr>
<th>Core Services</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planting</td>
<td>Currently at 26-28%</td>
<td>Target 40%</td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>Currently at 75%</td>
<td>Target 90-100%</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive</td>
<td>Currently at 20 yr cycle</td>
<td></td>
<td>Target 7 year cycle</td>
</tr>
<tr>
<td>Reactive</td>
<td>Currently at 6 Months</td>
<td></td>
<td>Target 3 month backlog</td>
</tr>
</tbody>
</table>
• Area maintenance increases operational efficiency
• Wait times for tree service requests reduced by 25-40%
## Urban Forestry Performance Measures

<table>
<thead>
<tr>
<th>Performance Measure - General</th>
<th>2010</th>
<th>2011</th>
<th>2012 Target</th>
<th>2012 Actual as a % of 2012 target</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Months Tree Service Backlog</td>
<td>6-9 mths</td>
<td>6-9 mths</td>
<td>3-6 mths</td>
<td>6 mths  n/a</td>
</tr>
<tr>
<td>Total # of Service Requests</td>
<td>79,125</td>
<td>90,954</td>
<td>88,470</td>
<td>118,581  134%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Measure - Consolidated</th>
<th>2010</th>
<th>2011</th>
<th>2012 Target</th>
<th>2012 Actual as a % of 2012 target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Tree Removals</td>
<td>15,193</td>
<td>13,903</td>
<td>7,150</td>
<td>20,600  288%</td>
</tr>
<tr>
<td>Total # of Trees Inspected</td>
<td>92,888</td>
<td>127,519</td>
<td>153,771</td>
<td>144,594  94%</td>
</tr>
<tr>
<td>Total # of Trees Pruned</td>
<td>74,572</td>
<td>77,065</td>
<td>75,492</td>
<td>94,499  125%</td>
</tr>
<tr>
<td>Total # of Storm Clean Ups</td>
<td>5,966</td>
<td>6,800</td>
<td>7,000</td>
<td>6,936   99%</td>
</tr>
<tr>
<td>Total # of Stumps Removed</td>
<td>6,229</td>
<td>7,240</td>
<td>7,240</td>
<td>9,279   128%</td>
</tr>
<tr>
<td>Total # of Other Removal Activities</td>
<td>13,889</td>
<td>13,494</td>
<td>13,494</td>
<td>16,867  125%</td>
</tr>
<tr>
<td>Total # of General Maintenance Activities</td>
<td>19,320</td>
<td>13,204</td>
<td>13,204</td>
<td>23,181  176%</td>
</tr>
<tr>
<td>Total # of Other Core Program Activities</td>
<td>204</td>
<td>404</td>
<td>404</td>
<td>376     93%</td>
</tr>
<tr>
<td>Total # of Forest Health Care Activities</td>
<td>0</td>
<td>506</td>
<td>14,500</td>
<td>18,289  126%</td>
</tr>
<tr>
<td>Total # of Trees Permitted</td>
<td>5,096</td>
<td>4,814</td>
<td>4,820</td>
<td>5,188   108%</td>
</tr>
<tr>
<td>Total # of Trees Planted</td>
<td>68,526</td>
<td>69,135</td>
<td>93,678</td>
<td>98,497  105%</td>
</tr>
<tr>
<td>Total Consolidated</td>
<td>301,883</td>
<td>334,084</td>
<td>390,753</td>
<td>438,306 112%</td>
</tr>
<tr>
<td>Increase (%) per year - Consolidated</td>
<td></td>
<td></td>
<td></td>
<td>10.7%   17.0%  31.2%</td>
</tr>
</tbody>
</table>
Urban Forest Challenges

- The Management Plan outlines 6 key challenges which require specific attention to meet our objectives.
1. Major Forest Health Threats

- Emerald Ash Borer (EAB)
- Asian Long-horned Beetle (ALHB)
- Gypsy Moth
2. Tree Maintenance Requirements & Expectations

Example: Area Tree Maintenance

Before

After
3. Balancing Urbanization Impacts and Sustaining the Urban Forest

Roncesvalles Boulevard during sidewalk reconstruction and after

Land clearing removes good quality parent soil

Trees help stabilize slopes and reduce erosion
5. Recreational Pressures on the Urban Forest

Biking on unsanctioned path

Erosion on unsanctioned path
6. Increasing Public Awareness of the Value & Sensitivity of the Urban Forest
The objective of maintaining a balanced and efficient approach to urban forest management is the strategic application of resources with respect to budget and defined performance measures.

The full and effective implementation of this plan requires support and cooperation of all stakeholders.