
Photo credit: Dave Colvin

City of London Urban Forest Strategy

Enhancing The Forest City

June 2014

www.london.ca

B.A. Blackwell & Associates Ltd.

London CANADA

Vision

A healthy, diverse, and extensive urban forest for today and the future.
London is the Forest City.

Photo credit: Dave Colvin

Mission

Plant more, protect more, maintain better.

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1. Executive Summary

The Urban Forest Strategy is a plan that engages citizens and outlines the necessary steps the City of London must take to protect, enhance, and monitor the urban forest that defines London as the "Forest City." The urban forest refers to all trees within the municipal boundary, regardless of land use type or ownership. Trees in private yards, street boulevards, parks, woodlands, wetlands, ravines and fields are included in the urban forest.

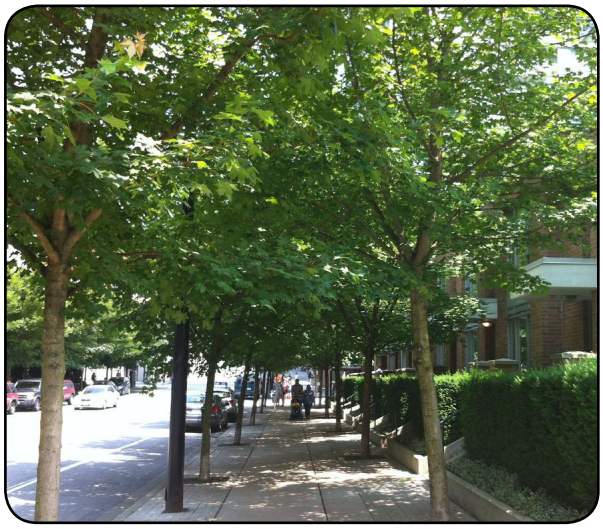
London has an extensive urban forest that provides many social, health, environmental and economic benefits to the community but it is under pressure from urban growth, economic challenges, forest health and climate change. A snapshot of the structure and benefits of London's urban forest within the Urban Growth Boundary (UGB) was provided in the recently completed Urban Forest Effects Model.[1,a] The community is supportive of trees and urban forestry principles. However trees are often taken for granted and not given sufficient priority in planning, urban design, operations, and construction practices.

The Urban Forest Strategy provides the vision and strategic direction for long-term education, planning, planting, protection and maintenance of trees, woodlands, green space and related resources in the City of London. The approach outlined in the strategy will provide for the protection and enhancement of London's treescape, recognizing that it is integral to building an attractive, well-designed and livable urban environment. The strategy offers a snapshot of the current program and of the pressures and opportunities available to the City of London to manage the urban forest into the future.

It incorporates a list of prioritized recommendations that reflect the values, goals and vision of Londoners.

The Urban Forest Strategy is intended to provide direction over the next 20 years and be reviewed every five years. The strategy is categorized into three time frames: short term (1-2 years); medium term (3-5 years) and long term (>5 years). The strategy is supported by a comprehensive Background Report[b] that summarizes the background review, stakeholder consultations, and performance assessment of London's current urban forestry program.

Elevating the importance of the urban forest in London will enhance its reputation as a place where people want to live, work and play, and create an environment that is resilient to change. There will be costs associated with creating suitable spaces for street trees, tree maintenance and urban forest management that will affect sectors of the community in different ways. The benefits of prioritizing the urban forest will outweigh the costs and will result in the creation of a legacy that benefits Londoners beyond our current lifetime.



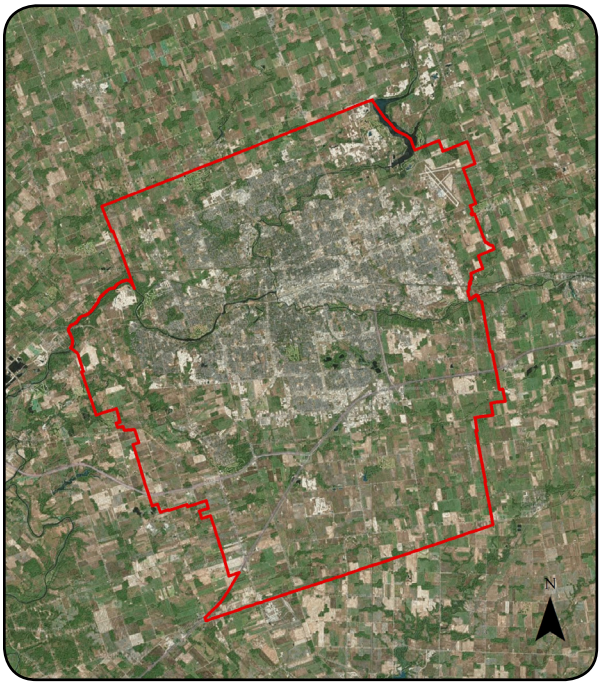
1 References indicated by superscript letter.

2. Introduction

The City of London has been known as "the Forest City" since 1855 when it was described literally as a city built in the middle of a forest. Today the landscape is dominated by agriculture and urbanized areas, with remnant woodlands generally scattered along corridors that in the past were unsuitable for agriculture or difficult to access such as river valleys and ravines. These areas now form the framework for London's Natural Heritage System which protects approximately 55% of London's vegetation.

Canadian towns and cities have historically been planned with parks and roadside plantings but it is really since the 1970s when the term 'urban forest' was first introduced, that urban areas across Canada started to develop formal urban forestry programs. The concept of urban forest management has now spread throughout the world and the value of trees as an asset in urban centres is increasingly being recognized because of the many ecological, economic, cultural and social benefits provided.

The goal of the Urban Forest Strategy is to provide direction and a framework for managing London's existing and future urban forest.[a]



3. What is the Urban Forest?

The urban forest refers to all trees within an urban area, regardless of land use type or ownership. Trees in private yards, street boulevards, parks, woodlands, wetlands, ravines and fields are included in this term. While "urban forest" is a collective term that encompasses all trees within a defined urban area, in this case London's municipal boundary, distinctions are made between two major types of urban forest:

- Trees in largely man-made environments include street trees, manicured park and yard trees, and trees in hard surface environments such as the downtown core and large parking lots. These trees grow in a significantly modified environment and management costs are relatively high. These urban forest ecosystems are often considered part of "green infrastructure".

- Trees in "natural" ecosystems include woodlands, wetlands, and other natural areas. These ecosystems generally include native tree and understory vegetation. Management costs are relatively low, while conservation values are high. These urban forest ecosystems are often considered "natural capital".

Figure 1. Example of a man-made forest ecosystem.

Figure 2. Example of a natural forest ecosystem.

4. Benefits of the Urban Forest

The benefits of urban forests are significant and well-documented in numerous studies. In fact, cities around the world now consider urban forests and related vegetation as an important component of urban infrastructure systems, with large healthy trees providing the greatest per-tree benefits. Figure 1 illustrates the range of benefits that urban forests contribute.

Benefits provided by the urban forest include food production, and the provision of habitat and food for pollinators.

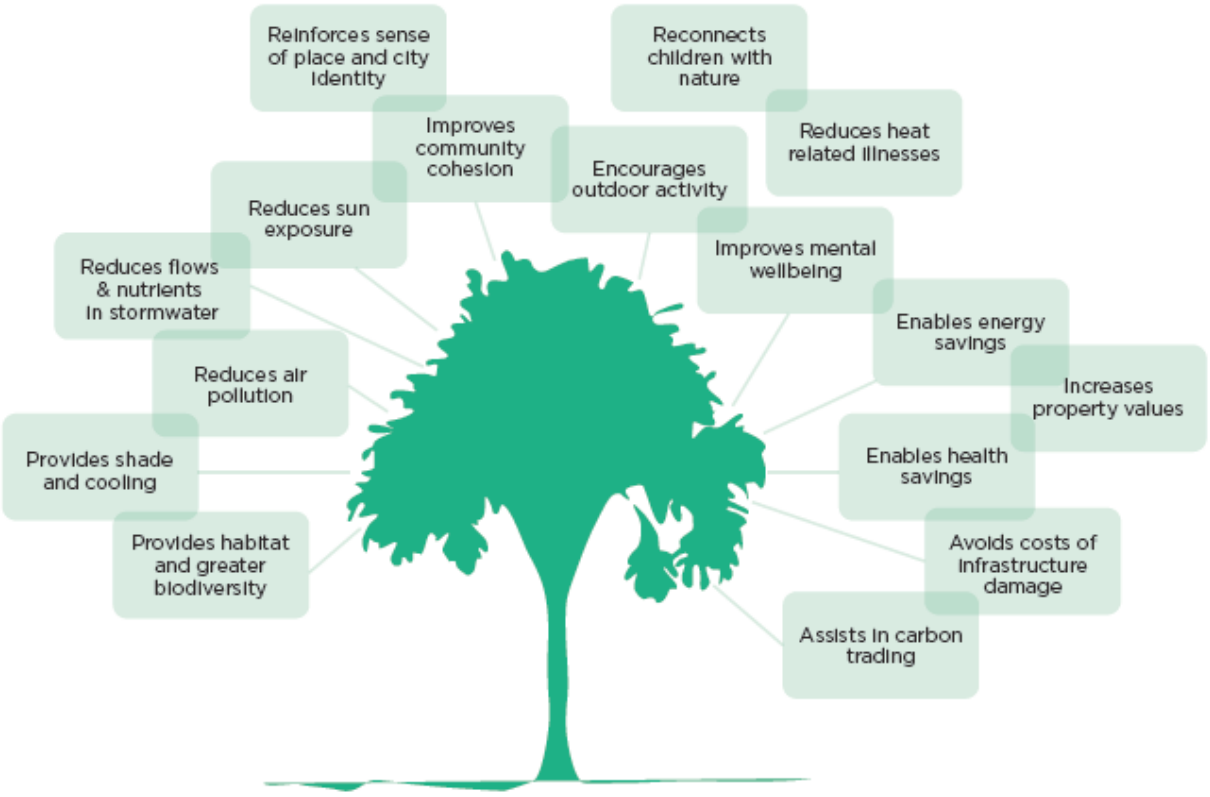


Figure 3. Overview of the benefits provided by urban forests.[c]

Environmental benefits[1]

Trees moderate temperatures: trees provide shade that can significantly reduce temperatures, and when strategically placed around buildings, can lower air conditioning requirements. Water vapour produced through transpiration also reduces ambient air temperature.

Trees moderate stormwater runoff: tree canopies and roots absorb heavy rainfall and reduce stormwater flows. This reduces runoff and pollutants entering creeks.

Trees reduce air pollution: trees absorb gaseous pollutants through their leaves such as ozone, nitrogen dioxides, and sulfur dioxide, while at the same time producing oxygen. They intercept fine particulate pollutants on leaf, branch, and trunk surfaces. Trees also sequester (remove), through the process of photosynthesis, significant amounts of atmospheric carbon that is stored in their tissues.

Trees are important to climate change mitigation considering their ability to remove carbon dioxide from the atmosphere and act as carbon sinks. By removing carbon from the environment trees reduce the effects of local and global climate change.

Trees provide habitat: urban forests provide a range of habitat for a wide variety of species. They contribute significantly to local biodiversity, and provide connecting networks for regional biodiversity.

1 Information summarized from several sources, including USDA Urban and Community Forestry, City of Melbourne Urban Forestry Strategy, and London UFORE Study.

Large trees produce substantially more benefits than small trees.

Community benefits

Trees improve social connection: urban forests and related green spaces offer a sense of place and provide a focal point for community interaction through events, festivals, picnics, etc. In general, urban forests give people places to recreate, experience nature, and feel a sense of well-being.

Trees enhance walkable communities: tree lined streets and natural areas encourage people to walk in their communities. Street trees have also been shown to calm traffic through neighbourhoods. Increased outdoor activity improves general physical and mental well-being and contributes to lower health care costs, particularly as lifestyle-related illnesses are prevalent.

Trees reduce sun exposure and heat related illness: shade provided by broad canopied trees significantly reduce UV exposure which reduces sun exposure illnesses such as skin cancer. Moderated temperatures during hot summer days significantly reduce heat stroke and heat-related mortality.

Trees improve mental well-being: trees and related green spaces have been shown to have positive effects on depression and well-being. Hospital recovery times are reduced where patients are in view of trees and green spaces.

Economic benefits

Trees lower energy costs: shade on buildings provided by trees significantly reduces air conditioning needs and thus energy costs.

Trees increase property values: a well-developed urban forest improves neighbourhood aesthetics and has been shown to increase property values by 10-20% (and property tax revenue) and attract more home buyers.

Trees improve retail business: studies have shown that shoppers will spend more time and money, come back more often, and travel greater distances to visit retail areas featuring high quality trees.

As of 2008, London has approximately 4.4 million trees representing 25% canopy cover within the Urban Growth Boundary and approximately 2 million treees in rural areas of the City (UFORE study).

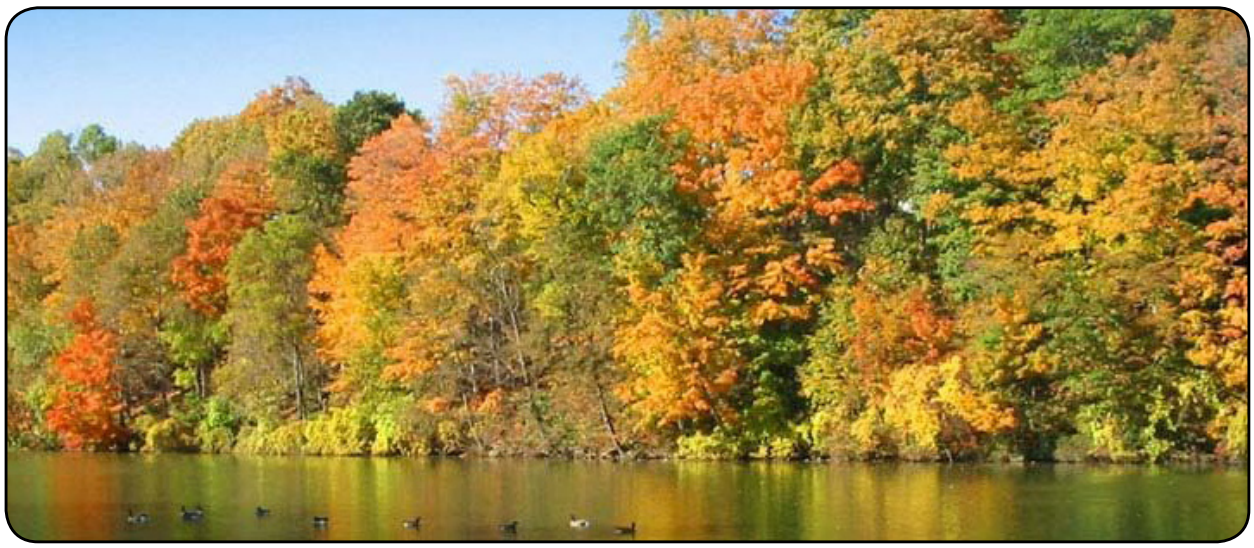
Trees lower health care costs: urban forests and green spaces offer a range of health benefits that translate into reduced burden on the health care system. A recent National Illness Cost of Air Pollution study estimates that in Middlesex County, air pollution alone represents an annual direct cost to the health care system of $23 million[a].

Trees market a City: tourism and city marketing can be enhanced by a well-developed urban forest that can serve as a city attraction, and provide settings for events. This is particularly true for London which uses The Forest City as a brand.

The recently completed UFORE study[a] calculated dollar value estimates for London's urban forest using standardized methods developed by the USDA Forest Service:

- The urban forest has a structural value of $1.5 billion.
- The urban forest removes 370 tonnes of pollutants each year, representing an annual saving of $4.5 million of reduced health care costs.
- The urban forest stores 360,000 tonnes of carbon.
- The urban forest removes 12,500 tonnes of carbon each year.
- The urban forest contributes to $1.7 million in energy use savings each year.

London is located in the Carolinean forest region - one of the most diverse natural environments in Canada.



5. Guiding Principles of the Urban Forest Strategy

The following principles provide overall guidance in developing the strategy:

Plant More	Expand and manage the urban forest strategically to maximise the social, environmental and economic returns.
Protect More	Protect and maintain London's urban forest on public and private land where it is providing the benefits of the 'right tree in the right place' or is supporting the integrity of natural features.
Maintain Better	Maintain and monitor the urban forest over time and adjust management practices as needed using current information and research.
Engage the Community	Partner with the community to achieve urban forest goals.

5.1 Right Tree, Right Place

The concept of "right tree, right place" is fundamental to urban forest management. This focuses on making sure suitable tree species are selected to match their intended function and available growing space conditions. This applies to city street and park trees as well as natural woodlands. In the latter case, the emphasis is on making sure species are well-suited to soil conditions. Several important considerations when selecting suitable species include the following:[d]

Tree function – what major benefits are the trees expected to provide? This can include climate modification such as shade cooling or wind shelter, aesthetics, privacy screening, wildlife habitat, food production, air quality enhancement, etc. Tree species vary in their ability to provide these different benefits.

Form and size – understanding the space constraints trees will experience at maturity is critical to selecting the appropriate species. Tall, narrow crown forms are suitable for narrow spaces between buildings, low growing species are suitable for planting under utility wires, and large spreading canopies are suitable for open parks. In all cases, the amount of underground space required to accommodate healthy root systems of mature trees is important.

Site conditions – the key to making sure trees are healthy and resilient is selecting species that will thrive under a given set of site conditions. This includes:

- Soil conditions such as drainage, moisture, nutrition, density, and depth are critical determinants in species selection.
- Exposure to available sunlight is important as species vary in their ability to tolerate shady conditions; exposure to wind determines whether shallow rooted or large crowned species are suitable or not.
- Regional climate is important for matching tree species tolerance to frost, heat, and drought conditions.

Figure 4. Large healthy silver maple optimizing growing space and benefits.

Human activity – it is important that tree species are resilient to the forms of human activity that they will be exposed to. This can include road maintenance effects (i.e., salt, snow ploughing, foot traffic, vandalism, grass mowing, vehicular traffic, future development, etc).

Insects and disease – selecting species that are resilient to insects and disease anticipated in the area is critical to long-term health.

Figure 5. Ornamental trees providing visual screen and aesthetic benefits.

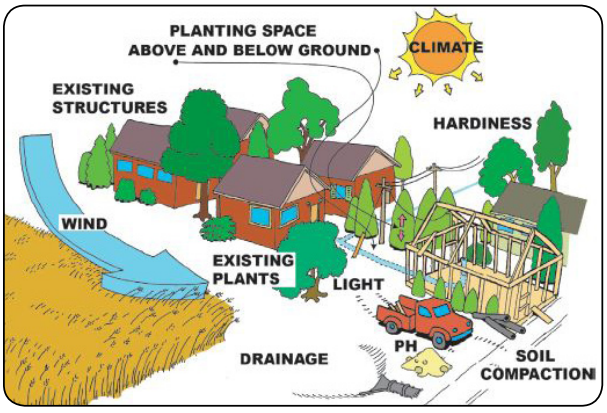


Figure 6. Important factors in determining suitable tree species.[d]

6. How the Strategy Was Developed

The development of the Urban Forest Strategy was initiated with a comprehensive background review of available reports, policy documents, and research. An extensive phase of consultation was undertaken to identify issues and concerns. This included interviews with City staff and external stakeholders, a questionnaire to a broad group of stakeholders with specific urban forest interests, and an online public survey to identify issues and concerns of the public. The details of this process are described in a Background Report[b] (available separately) that summarizes the background review, public and staff consultations, a review of current best practices for urban forest strategies, existing policy, and a performance assessment for London's current urban forestry program. This information was used to develop a comprehensive suite of ranked recommendations. Recommendations with low rankings were not included in the final strategy. The Background Report formed the foundation of the Urban Forest Strategy.

The City of London Urban Forest Strategy provides the vision and strategic direction for long-term education, planning, planting, protection and maintenance of trees, woodlands, green space and related resources in the City of London.

The approach outlined in the strategy will provide for the protection and enhancement of London's treescape, recognizing that it is integral to building an attractive, well-designed and functional urban environment.

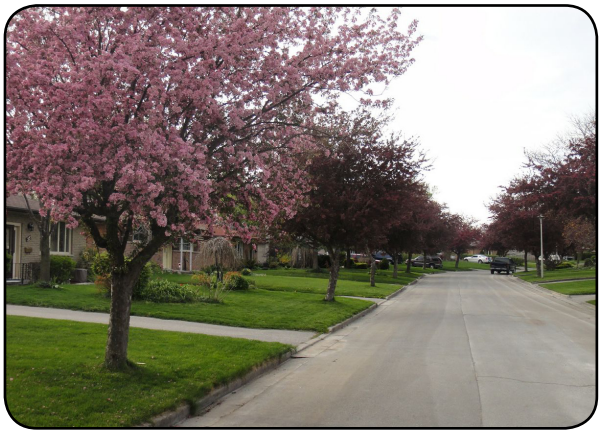
The strategy offers a current snapshot of the pressures and opportunities available to the City of London to manage the urban forest into the future, incorporating a list of priority recommendations that reflect the values, goals and vision of staff, key stakeholders and the general public.

London's urban forest within the Urban Growth Boundary has a replacement value of about $1.5 billion (UFORE study).

7. The Existing Urban Forest Program

The performance of London's current urban forestry program was assessed using a widely accepted framework[e,f] applied to other urban forests in Canada. This system includes a set of criteria and associated performance indicators that serve as a standardized measure for assessing urban forest programs. Indicators describe Low, Moderate, Good, and Optimal levels of performance that can be used for assessing a program and determining what is required for improvement. In addition to providing a "snapshot" of current programs, it can also be used for assessing progress over time as programs are implemented. The three main areas of performance measures include: 1) Vegetation, 2) Community Framework, and 3) Management. Overall London's current program is rated as Moderate to Good. More details can be found in the Background Report.

Low density residential neighbourhoods contribute about 41% to London's total canopy cover (UFORE study).



VEGETATION, PROTECTION AND ENHANCEMENT

Criteria	Performance Indicator*			
	Low	Moderate	Good	Optimal
Relative canopy cover			■	
Age distribution of trees in the community		■		
Species suitability			■	
Species distribution		■		
Information on condition of publicly owned trees			■	
Information on publicly owned natural areas			■	
Native vegetation			■	

*Refer to Background Report[b] for details of the performance assessment.

COMMUNITY FRAMEWORK

Criteria	Performance Indicator			
	Low	Moderate	Good	Optimal
Public agency cooperation			■	
Involvement of large land holders		■		
Green industry cooperation		■		
Neighbourhood action			■	
Citizen - municipality - business interaction				■
General awareness of trees as a community resource		■		
Regional cooperation	■			

MANAGEMENT PHILOSOPHY

Criteria	Performance Indicator			
	Low	Moderate	Good	Optimal
Tree inventory			■	
Leaf cover inventory			■	
City-wide management plan	■			
Municipality-wide funding	■			
City staffing			■	
Tree establishment planning and implementation		■		
Tree habitat suitability			■	
Maintenance of publicly owned street trees			■	
Tree risk management		■		
Tree protection policy and enforcement		■		
Publicly owned natural areas management			■	
Forest health management	■			
Recycling of green waste and water		■		

8. Londoners' Concerns & Vision for the Urban Forest

Public and stakeholder consultation was completed over five months (May to October, 2012) to identify and understand the concerns and vision the community has for the urban forest. This included interviews with 30 City staff from different Divisions, interviews and questionnaires with 15 external stakeholders, and an online public survey.

The survey was available to the general public through a link posted on the City's *Focus on Our Forest* web page. A total of 1,758 individuals completed the online survey and 592 of these respondents provided additional written comments. Details of the survey questions and responses are found in the Background Report. The following summarizes the overall feedback from this consultation process:

- City of London residents generally believe the urban forest encompasses all trees, including both public and private.
- The City does not have enough trees to be referred to as "The Forest City".
- It was clearly articulated that the brand "The Forest City" is important to the community and should be the slogan guiding urban forestry into the future.
- Overall, Londoners would like to see more extensive urban forest (greater canopy cover) with healthy large stature trees.
- Londoners prefer to see more trees in their neighbourhoods and would also plant a tree on their property if provided with incentives or discounts (e.g., tax breaks and trees discounts).

86% support a tree protection by-law for trees on private property (public survey).

Parking lots, shopping streets, recently developed residential streets, and commercial/industrial areas were identified as areas that require more trees. In particular, there is a general consensus that not enough trees are being preserved or established throughout new developments. The urban forest message resonates with the business community and needs to be related to business and development progress. Business leaders suggested that the City should consult with the development community and identify an equitable approach to managing the urban forest. More collaboration and cooperation with the business community would be beneficial. Furthermore, the results of the public survey show support for a tree protection by-law on private property – specifically to protect rare or unusual specimens, to protect "heritage trees", or to protect trees of a certain size.

It was also felt that the City needs to improve tree maintenance practices (i.e., pruning and watering) to increase tree survival.

84% think London should continue to be called The Forest City (public survey).

Additionally, pruning practices around powerlines needs to be modified to improve the aesthetic quality of trees.

Public response suggests that the community needs to do more to enhance and improve the city's urban forest, and that there is a need to increase public involvement in decisions affecting the management of the urban forest.

Londoners understand that the urban forest is a significant asset for the health and wellness of their community. The values of these benefits are well-documented in the literature and it is important to understand that the health benefits of the urban forest becomes increasingly important as London's population ages over the coming decades.

Key issues raised in public consultation include:

Canopy Cover Targets

Stakeholders understand the importance of canopy cover targets (see section 11) and support the concept that the City needs to meet a minimum target. Many also believe that the quality of the cover is more important than the quantity, with larger trees providing most of the environmental benefits.

Natural Areas

The gradual erosion of woodland edges and the encroachment of private yards into woodlands are a general concern of stakeholders with respect to the maintenance and preservation of natural areas. There are approximately 1,100 homes that back onto Environmentally Significant Areas (ESAs) and it is estimated that approximately 10% of these homes encroach on public property. Additionally, various stakeholders suggested that some local woodlands outside of ESA's were poorly managed, including no formal trail designation, no hazard tree management, no signage, and unclear legal access. The current woodland management budget (2014) for woodlands and Parks (outside of ESA's) is only $150,000 which is inadequate given the size and scale of management issues.

"There is general recognition that in spite of best intentions, trees are often the last thing to be considered in planning and through the construction process which results in limited or poor quality plantable space that compromises a healthy urban forest"

(City staff interviews).

Organizations such as the Upper Thames River Conservation Authority and the Kettle Creek Conservation Authority indicated a willingness to partner more broadly with the City to address some of the natural area issues identified by stakeholders.

"Re-establishing trees on formerly cultivated agricultural land with new developments contributes positively to the urban forest"

(London Development Institute)

By-laws

Another key area of feedback included tree by-laws, specifically for tree protection. It was suggested that current by-laws (i.e., the Tree Conservation By-law, Parks and Recreation By-law, Boulevard Tree Protection By-law and Site Plan Control Area By-law) could be improved with upgraded wording, additional enforcement resources and increased fines. Some stakeholder groups felt that management of the City's urban forest was constrained by a lack of a tree protection by-law, specifically for mature trees on private property. Education and partnerships are preferred by most staff rather than tree by-laws or regulations, although there is more support for protection of heritage or "special" trees in regulation. There was public support for increased taxes to cover additional costs for enforcement of a tree protection by-law.

In general, comments suggested that more attention be focused on protection or preservation of large trees for as long as possible, and that more staff and additional training were required to enforce tree by-laws in natural areas, parks and boulevards.

"I know maintaining and expanding our urban forest is costly but the benefits are enormous and span generations. Please work to expand and improve our City's urban forest"
(public survey comment).

Urban Forest Management

The Chamber of Commerce is supportive of the City's efforts to improve the management of the Urban Forest. Interviews with various businesses identified their interest in discussing expansion of the urban forest and support of a higher proportion of trees planted to account for trees lost in development. Stakeholders suggested that the ratio of replacement trees to dead or removed trees is too low. Stakeholders emphasized the importance of planting the right number of quality trees in the right place. Additional concerns included pruning practices, protection of trees /roots during road construction and prioritizing protection of older trees.

Volunteer Tree Planting

Volunteer tree planting has typically used whips and saplings with the occasional use of large caliper trees by select organizations. Although volunteer programs are viewed as valuable and educational, and have created collaborative efforts that unite members of the community, their success has also been described as a "plant and hope" strategy.

There was great interest in community tree planting and various suggestions on how to improve the success of volunteer programs. The most consistent and common suggestion included improved planning, identification, and management of planting areas by City staff. Volunteer programs emphasized the limited window available for planting in the spring and fall; hence organization is imperative to the success of planting programs. A long-term vision of planting opportunities and increased certainty would increase success. It was emphasized that a five-year planting plan, outlining specific areas, species requirements and an estimated number of trees to be planted, will greatly benefit volunteer groups. A longer-term vision for planting opportunities will improve coordination and efficiency of projects, and better utilize limited funds. Furthermore, planning will likely reduce conflicts that exist between volunteer groups for funding, duplication of service and targeting the same areas.

Overall, volunteer groups would benefit from increased funding considering many depend on City funding to leverage funds from other sources. Increased funding would enable the expansion of existing planting programs and reduce competition between groups. Volunteer planting programs can also be improved through changes in nursery acquisition and stock quality improvement through certainty in the number, size and species of trees.

"Policy does exist to protect trees; however, processes often do not work effectively to protect trees. Retained woodlands can be critically degraded and devalued by construction practices that alter hydrology or create modified edges.

Zoning, urban design, engineering standards, and site planning processes do not currently provide incentives for developers to adjust their plans to retain mature trees or incorporate green infrastructure features. Sites have been cleared of trees before a development application is made."

- (City staff interviews)

Education

Stakeholders recognized that public education can be challenging (with limited City staff capacity and budget), however it was suggested that more public education is required. Stakeholders believe education needs to be more focused on the benefits of trees around the home, including reduced energy costs (i.e., lower air conditioning and heating requirements), and the aesthetic value that trees have (i.e., values of homes with trees are typically 10 – 20% higher). In addition, education needs to focus on competing and complementary interests. The value of education in tree care (i.e., poor tree survival attributed to neglect) and drought alerts were also concerns identified by various stakeholders.

Education provides a great opportunity to demonstrate and celebrate successful models such as the Veterans Memorial Parkway Project. This Project highlights collaboration among City, businesses, and non-profit groups. City Staff also view education and partnerships on private land as an opportunity to improve tree management instead of setting performance goals or standards. Private land planting programs managed by conservation authorities can also be used as educational opportunities.

"Time and effort needs to be spent on teaching and nurturing 'stewardship'. People need to be instructed in the care of trees in front of their property."
(Public survey comment)

9. Synopsis of Key Threats

An important focus of this strategy will be to improve understanding, benefits, and management of the City of London's urban forest, and the need to improve plans, budgets and operations to provide protection from key threats and to achieve long term objectives and targets.

Based on feedback and the results of the performance review, key threats include 1) urban intensification, 2) insects and diseases, and 3) climate change and severe weather events.

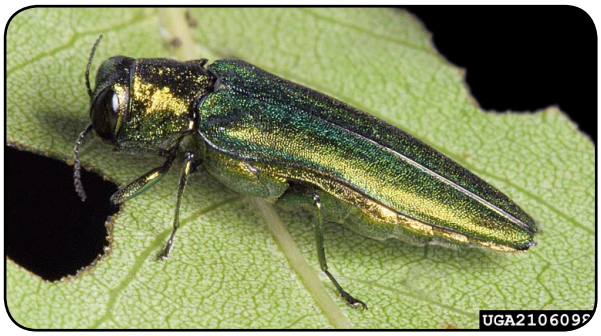
Managing urban intensification in the City of London requires integration of urban forest goals and targets at the onset of planning and construction. This will require more cooperation from both the private and public sector in designing future growth strategies for the City. Additionally, City departments must improve inter-departmental procedures and practices to improve urban forest performance in both the short and long term. Proper growing space and soil conditions are required for good tree survival and growth which in turn, contribute to achieving canopy cover goals. Subdivision developments have historically contributed to a significant portion of London's urban forest, particularly older low and medium density neighbourhoods. Protecting this legacy is a key part of managing London's urban forest. Modern high density developments can continue to support important tree cover, provided design, construction, and plantings allow healthy, large stature trees to grow.

The top 3 most important urban forest concerns identified through a public survey were:

1. *Tree preservation & protection*
2. *Lack of tree cover*
3. *Protection of heritage/historic trees*

London's urban forest is affected by a range of insects, diseases, and invasive species. By far the most significant current threat is the Emerald Ash Borer (EAB). The EAB was first identified in London in 2006 and has been responsible for killing large numbers of trees. Ash comprises an estimated 7% of the tree canopy in London[a]. It is projected that the majority of this will be lost to the EAB over the next decade. Because of this high level of threat, a separate strategy has been developed for managing the EAB[g] . The other potentially significant threat is the Asian Longhorned Beetle. This insect has not been found in the London area although it does occur in the GTA. It kills a range of hardwood species, with maples being one of its preferred targets. An aggressive detection, containment, and eradication program is currently underway to limit the spread of this potentially devastating pest.

Climate change also poses a significant threat to the city's urban forest. While there is general consensus that climate is changing, there is a great deal of uncertainty around the nature and extent of these changes. The general predicted trends for southern Ontario are warmer, longer summers with little or no increase in precipitation resulting in more droughts, and warmer, shorter winters with more snowfall – generally a milder climate. Extreme weather events such as windstorms, intense rainfall, snow storms and very high temperatures are expected to occur more frequently[h,i]. In the case of London's urban forests, the most important potential impacts include drought stress, storm damage, insects and disease, and invasive species.



Emerald Ash Borer is expected to kill most of London's ash trees, reducing canopy cover from 25% to about 23% (EAB Strategy)

A sound climate change mitigation and adaptation strategy requires two fundamental components: 1) a proactive program that influences day to day operations and activities improving the resilience of the urban forest, and 2) a reactive program that can respond to extreme events such as ice storms, drought, wind, and insect and disease outbreaks. A significant focus of the Urban Forest Strategy is to improve the current level of tree care and tree management within the urban forest. As the standards and best management practices within the City improve it is expected that these changes will improve the overall health and resilience of the urban forest which will provide a significant buffer to future climate change impacts.

10. Achieving the Vision

10.1 Framing the Strategy

The City of London has an extensive urban forest that provides many social, environmental and economic benefits to the community but it is under pressure from urban growth, economic challenges, forest health and climate change. Prioritizing the urban forest in the community will create a place where people want to live, work and play, and an environment that is resilient to change. There will be costs associated with creating suitable spaces for street trees, tree maintenance and urban forest management that will affect different sectors of the community in different ways. The benefits of an enhanced urban forest will outweigh the costs and will result in the creation of a legacy that benefits Londoners beyond our current lifetime.

10.2 Canopy Cover Targets

Canopy cover is an important concept of urban forest management as it is a measure of the amount of forest that grows in an area. It is relatively easy to monitor, and serves as a good indicator of the general health and value of the urban forest. It is also useful as a performance measure to track how well the urban forest management program is doing in relation to planned objectives. Finally, it provides a means of strategically targeting new plantings so maximum benefits can be realized. Canopy cover is the proportion of an area covered by the vertical projection of tree crowns (Figures 5, 6).

Suggested canopy cover targets for London are shown in Table 1.

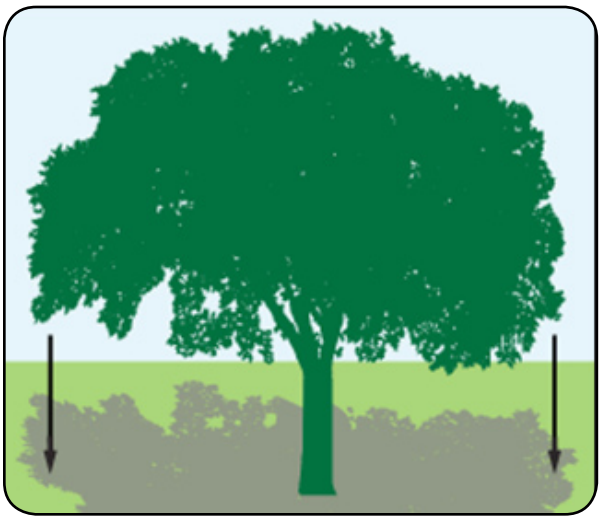


Figure 7. Canopy cover as the area covered by a vertical projection of tree's crowns.[i]

These apply to the area contained within the UGB which is consistent with the UFORE baseline analysis. If the UGB were to expand, canopy cover values would decrease as most lands outside the UGB are agricultural with limited tree cover.

Targets are based on American Forests[1] recommendations, current canopy cover data from the UFORE study, anticipated future trends, distribution of land use types in London, and canopy cover targets of other communities. These should only be considered provisional as additional data is required to establish final targets. This includes a comprehensive plantable space analysis, canopy growth models and a completed inventory database.

1 A leading urban forest management, conservation, and research organization.

Figure 8. Examples of canopy cover differences in two neighbourhoods. Old North neighbourhood on the left is a mature canopy with 39% cover; Sunningdale neighbourhood on the right is a young canopy with 5% cover.

Table 1. Suggested canopy cover goals by current land use types.

Land Use Type	Target Canopy Cover by 2035	Target Canopy Cover by 2065
Agriculture	13%	15%
Commercial	10%	15%
Institutional	18%	20%
Industrial	12%	15%
Low density residential	27%	35%
Medium and high density residential	19%	25%
Natural area and open space	55%	60%
City-wide	25%	32%

"Target Canopy Cover by 2035" values reflect the 2008 canopy cover figures from the UFORE study. There has been significant loss of canopy since 2008 due to the Emerald Ash Borer. The focus for the first 20 years of the strategy is to restore tree cover to circa 2008 levels. Only then can efforts shift to enhancing the longer term canopy to meet the 2065 targets.

The carrying capacity of the land in the City is believed to currently be sufficient to support up to 32% overall canopy cover potential within the UGB. However, this optimum provisional target is based on the assumption that in implementing the recommendations of this strategy, the City will provide complementary policies and regulations that facilitate sufficient growing space (above and below ground) for additional trees.

Canopy cover targets by land use type will be adjusted to be consistent with land use designations of the new Official Plan once it comes into effect.

Studies show that residential property values are higher for homes that have trees than comparable homes lacking trees.

Studies show that the value of land in new development areas is increased with forest cover and trees.

11. Synopsis of the Strategy

The Urban Forest Strategy consists of 18 Strategic Goals and their associated Actions, with priority, time frame, and indication where additional resources are required for implementation. Strategic Goals are organized according to the Guiding Principles and are not limited to the Guiding Principle which they are listed below (many Strategic Goals apply to more than one guiding principle and have been grouped for presentation).

Specific Actions and related information are presented in Section 11.1.

Below is a summary of the four Guiding Principles and their associated Strategic Goals:

The Urban Forest Strategy consists of 18 Strategic Goals and their associated Actions, with priority and time frame.

PLANT MORE

1. Achieve appropriate canopy cover across the community.
2. Develop a tree establishment program driven by canopy cover targets, maintenance capacity, and "right tree, right place" principles.
3. Establish a diverse tree population city-wide as well as at the neighbourhood level.

PROTECT MORE

4. Preserve and enhance local natural biodiversity.
5. Enhance and enforce municipal policies.
6. Improve urban forest health.

MAINTAIN BETTER

7. Ensure City departments operate with common goals and objectives and adequate staffing.
8. Maintain publicly owned trees to maximize current and future benefits provided to the site.
9. Increase funding to support and sustain urban forest management.
10. Complete a comprehensive urban forest inventory and apply to management decision-making.
11. Monitor existing and potential canopy cover.
12. Undertake research to improve urban forest performance and encourage adaptive management.

ENGAGE THE COMMUNITY

13. Consult and cooperate with large private landholders to embrace city-wide urban forest goals and objectives.
14. Consult and cooperate with local nurseries, arborists, landscapers, etc. (urban forestry services) to embrace city-wide urban forest goals and objectives.
15. Consult and cooperate with citizens at the neighbourhood level to embrace city-wide urban forest goals and objectives.
16. Consult and cooperate with the business community to embrace city-wide urban forest goals and objectives.
17. Facilitate public understanding of urban forest management.
18. Consult and cooperate with neighbouring communities on regional urban forest management issues.

11.1 The Strategy

The Urban Forest Strategy is presented in the following tables. These specify a series of Strategic Goals and their associated Actions, with priority and time frame. The three time frame categories include:

- Short term (1-2 years);
- Medium Term (3-5 years); and
- Long Term (>5 years).

The Strategic Goals and Actions were developed based on the information obtained through review of existing documentation, and feedback from City staff, stakeholders, and the public, and are organized according to the four defined Guiding Principles.

Studies show that shoppers are willing to travel further, stay longer, and spend more in retail districts featuring tree-lined streets.

PLANT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
1 Achieve appropriate canopy cover across the community.	**1.1** Establish canopy cover targets by place type and implement them through a framework of planting strategy, Planning District, Site Plan Control Area By-law and other policies, guidelines or regulations to be developed, and with community engagement (see Table 1).	High	Short-term 1-2 years
	1.2 Increase the requirement for parking lot shade trees in industrial and commercial areas (using canopy cover targets as a percentage of parking surface, or target tree densities).	High	Short-term 1-2 years
	1.3 Following the adoption of the new Official Plan, prepare a planting strategy for the City.	High	Short-term 1-2 years
	1.4 Implement a policy of no net loss of tree canopy cover as a fundamental principle or baseline from which to determine and project tree canopy cover targets.	Medium	Short-term 1-2 years
	1.5 Revise existing policies so there are incentives for developments to protect treed areas (including tree plantings, enhanced landscaping, or other "green infrastructure" features).	High	Medium-term 3-5 years
	1.6 Develop creative design solutions to better accommodate trees with cooperation of planners, developers, and engineers. Some examples include: • In new subdivisions, place services under double driveways to leave more plantable space for boulevard trees • Consider designs for some situations with sidewalks on one side of the street only. • Establish prototypical right-of-way specifications that accommodate trees, utilities and road widths (considering both above and below ground).	High	Medium-term 3-5 years

PLANT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
1 Achieve appropriate canopy cover across the community.	**1.7** Consider the creation of policies that support a system where it would provide greater flexibility for creativity in site planning to meet urban forest and other city objectives including stormwater management. Develop a range of specifications for different types of site plans and different planning districts that would diversify the currently uniform outcomes seen due to specifications such as "zero set-back" and "3 m planting strip".	Medium	Medium-term 3-5 years
	1.8 Consider using zoning bonuses as incentives for developments to protect treed areas (including tree plantings, enhanced landscaping, or other "green infrastructure" features).	Medium	Medium-term 3-5 years
	1.9 Conduct research, and measure woodland canopy, with the aim of developing a woodland canopy target for the City which integrates with the regional Natural Heritage System.	Medium	Long-term >5 years
2 Develop a tree establishment program driven by canopy cover targets, maintenance capacity, and "right tree, right place" principles.	**2.1** Identify plantable space opportunities that are currently underutilized such as the edges of sports facilities, passive use turf grass (including City parks), public walkways, transportation corridors, vacant City lands, pumphouses, City owned farmland outside the UGB, cul-de-sac bulbs and make these areas available for volunteer planting projects.	High	Short-term 1-2 years
	2.2 Develop standards and include species-appropriate minimum soil volumes, planting medium (mixture), and watering in all tree planting specifications.	High	Short-term 1-2 years
	2.3 Apply "right tree, right place" best practices to select trees most suitable for the site, emphasizing large stature trees and native species where possible. The goal is to grow high quality, healthy trees.	High	Short-term 1-2 years

PLANT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
2 Develop a tree establishment program driven by canopy cover targets, maintenance capacity, and "right tree, right place" principles.	**2.4** Prepare a 5-year planting plan that identifies areas and objectives for community planting projects on City-owned property.	High	Short-term 1-2 years
	2.5 Identify and create improved plantable space through City infrastructure projects.	High	Medium-term 3-5 years
	2.6 Prioritize the enhancement of plantable space in areas that are "hot spots" where tree planting could mitigate the urban heat island effect.	High	Medium-term 3-5 years
	2.7 Increase tree planting to meet canopy cover targets.	High	Medium-term
	2.8 Apply existing guidelines to plant new subdivisions in phases prior to assumption so that tree planting can occur in a timelier manner before the last phase of development is finished..	Medium	Ongoing
3 Establish a diverse tree population city-wide as well as at the neighbourhood level.	**3.1** Improve control over planting stock through a multi-year tree growing contract with specifications for shape, size, and provenance. This will lower costs and improve quality.	High	Medium-term 3-5 years
	3.2 Take an adaptive management approach to species selection to help diversify the species profile.	High	Medium-term 3-5 years
	3.3 Develop a native tree seed project to promote use of locally adapted seed of native species for new tree plantings.	Medium	Medium-term 3-5 years
	3.4 Encourage community gardens to consider the use of food producing tree species (e.g., fruit and nut bearing trees) and provide education on the required maintenance and management of food producing tree species.	Medium	Medium-term 3-5 years
	3.5 Manage woodlands to improve opportunities for species diversity (thinning and enrichment planting).	Medium	Long-term >5 years

PLANT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
3 Establish a diverse tree population city-wide as well as at the neighbourhood level.	**3.6** Encourage the planting of more tree species that rank low on the OPALS scale (Ogren Plant Allergy Scale) and reducing reliance on species that have a high OPALS rating.	Medium	Long-term >5 years
	3.7 Support phased tree planting/replacement initiatives to develop a more balanced age distribution in the long-term. Once the baseline urban forest population has been established and the canopy cover goals are on track, more emphasis can then be placed on phased timing for new plantings to help diversify the overall age class distribution in the long-term.	Medium	Long-term >5 years
	3.8 Analyze the tree inventory to identify those species that have required a high level of maintenance over their life cycle to determine whether those trees should be removed from the species list. Identify tree species that have not required a high level of maintenance and consider whether they could be more widely-used.	High	Ongoing
	3.9 Ensure that a range of species that are capable of withstanding harsh environmental conditions (wind, asphalt, snow dumping and salt) are available for selection for planting in tree-unfriendly locations such as downtown, industrial areas and busy transportation routes. In some circumstances non-native plantings may be required to address harsh environmental conditions (e.g. Veterans Memorial Parkway only two native species are suitable).	Medium	Ongoing
	3.10 Focus on species selection for long-lived, climatically adapted and low maintenance species in manicured parks and boulevards to reduce the cumulative maintenance burden from new plantings over time.	Medium	Ongoing

PROTECT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
4 Preserve and enhance local natural biodiversity.	**4.1** Investigate the potential to expand the Upper Thames River Conservation Authority management contract to include city owned woodlands as well as ESAs. Alternatively, establish a Natural Areas Crew that manages naturalization and ecosystem restoration in woodlands and has by-law enforcement powers.	High	Short-term 1-2 years
	4.2 Manage natural areas to enhance biodiversity (i.e., enrichment planting, retention of wildlife trees and coarse woody debris, uneven distribution of plantings, proactive management of invasive species to enhance native species, etc.	High	Medium-term 3-5 years
	4.3 Collate and synthesize data from existing reports and studies on natural areas and link it to a standardized spatial database.	High	Medium-term 3-5 years
	4.4 Develop a City owned woodland restoration and expansion master plan that prioritizes restoration activities across woodlands and includes required budgets and measurable targets for implementation.	High	Long-term >5 years
	4.5 Require a water balance study to be completed where warranted when developments are planned adjacent to vulnerable Natural Heritage System features to identify potential impacts from altered hydrology, and identify mitigation requirements. The Toronto and Region Conservation Authority has recently drafted stormwater management criteria for protection of natural features that could serve as a model.	High	Long-term >5 years
	4.6 Reintroduce, where appropriate, “lost” or rare native species in natural areas.	Medium	Long-term 3-5 years

PROTECT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
4 Preserve and enhance local natural biodiversity.	**4.7** Review the buffer required between developments and retained woodlands to assess whether current buffers are adequate.	High	Ongoing
	4.8 Educate the public about the benefits of controlled access and require controlled access be established at the time of woodland acquisitions.	Medium	Ongoing
5 Enhance and enforce municipal policies.	**5.1** Enforce the penalties for cutting trees in woodlands without a permit as required by the Tree Conservation By-law.	High	Short-term 1-2 years
	5.2 Strengthen the Parks By-law by linking encroachment to the Ontario Trespassing Act and enabling the City to charge for the restoration of encroachment, including planting.	High	Short-term 1-2 years
	5.3 Increase staff and resources for enforcement of tree protection related by-laws and site plan implementation to protect City assets.	High	Short-term 1-2 years
	5.4 Inspect development sites throughout all phases to ensure objectives and standards are met in the protection of urban forest assets.	High	Medium-term 3-5 years
	5.5 Consider new policies and review/enhance existing policies around tree retention for subdivision developments, including the retention of shelterbelts and hedgerows as desirable features between developments.	High	Medium-term 3-5 years
	5.6 Develop and enforce a Heritage Tree By-law that protects trees identified as heritage trees due to their size, age, rarity, cultural value or other significant feature.	Medium	Medium-term 3-5 years
	5.7 Review and revise the current Boulevard Tree Protection By-law to set fines consistent with other by-laws, and to strengthen tree protection.	High	Ongoing

PROTECT MORE			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
6 Improve urban forest health	**6.1** Revise policies to support opportunities to either retain native topsoil or redistribute more topsoil on-site post development to improve the quality of tree planting sites.	High	Short-term 1-2 years
	6.2 Hire dedicated forest health staff to monitor and manage insect and disease outbreaks and support the Forestry program and urban forest education.	High	Short-term 1-2 years
	6.3 To improve tree health along transportation corridors, consider implementing road, median and boulevard designs that will protect trees and their root zones from salt inputs and snow dumping.	High	Medium-term 3-5 years
	6.4 Develop and implement an integrated pest management plan encompassing insects, disease, and invasive species. The plan should address prevention, control and restoration within City-owned natural areas, and identify budgets and measurable targets for implementation. The plan should address pests on private property and provide the authority and empower the City to control pests on private property as required to ensure the overall health of the urban forest.	High	Medium-term 3-5 years

MAINTAIN BETTER			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
7 Ensure City departments operate with common goals, objectives and adequate staffing.	**7.1** Undertake inter-departmental staff workshops to promote trees and tree-friendly design concepts, solve tree issues and demonstrate new technology and techniques.	High	Short-term 1-2 years
	7.2 Establish an inter-divisional implementation team for the urban forest strategy that includes individuals from across departments.	High	Short-term 1-2 years
	7.3 Establish a city-wide, consistent, inter-departmental policy approach that encourages landowners to retain trees or include enhanced tree planting in landscape plans at the site planning stage.	Medium	Short-term 1-2 years
	7.4 Increase the City's emphasis on using trees for place making such as creating neighbourhood "themes", using seasonal colours, canopy shapes, etc.	High	Medium-term 3-5 years
	7.5 Fund a second urban forest technician/forest health coordinator position to help with specific implementation projects, management of insect and diseases, and enforcement of site plans.	High	Medium-term 3-5 years
	7.6 Deliver a state of the forest report to Council on a 4 year cycle and an annual departmental performance review on the urban forest program.	High	Medium-term 3-5 years
	7.7 Establish a corporate philosophy whereby trees are managed as infrastructure assets using consistent concepts of "green infrastructure" and related terminology.	High	Ongoing

MAINTAIN BETTER			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
8 Maintain publicly owned trees to maximize current and future benefits provided to the site.	**8.1** Establish quality specifications for London Hydro tree maintenance crews to use.	Medium	Short-term 1-2 years
	8.2 Establish a scheduled life cycle and area based tree maintenance cycle that includes rural areas.	High	Long-term >5 years
	8.3 Identify pruning dependant and high failure potential species within the street tree population, and consider for phased replacement with more reliable species.	High	Ongoing
9 Increase funding to support and sustain urban forest management.	**9.1** Raise public awareness of the SPARKS Neighbourhood Matching Fund for neighbourhood initiated projects and community project funds.	High	Short-term 1-2 years
	9.2 Develop a business case analysis to support a "tree infrastructure budget" for designing and building trees into selected capital projects. For example, the addition of trees and medians to the Horton Street project involved approximately 10% of the total project budget.	High	Medium-term 3-5 years
	9.3 Provide annual funding to support Community/not-for-profit planting initiatives. These organizations are currently able to leverage additional funding at approximately 5:1.	High	Medium-term 3-5 years
	9.4 Reduce the area of turf grass in the City through tree planting, with more selective mowing, to reduce costs. Areas with modified mowing require monitoring for invasive plants.	High	Medium-term 3-5 years
	9.5 Increase the annual maintenance budget proportionally to new boulevard tree plantings. The selection of site appropriate tree species, improved soil quality and control of nursery stock should mean that new trees have a lower maintenance requirement than the current street tree population over the long-term. Allocate a portion of the new planting budget toward future maintenance.	High	Medium-term 3-5 years

MAINTAIN BETTER			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
9 Increase funding to support and sustain urban forest management.	**9.6** The City should develop a mechanism to build a contingency disaster fund for responding to significant damaging events to the urban forest.	High	Medium-term 3-5 years
	9.7 Investigate options for funding restoration and maintenance of new woodlands.	High	Long-term >5 years
10 Complete a comprehensive urban forest inventory and apply to management decision-making.	**10.1** Prioritize the new Computerized Maintenance Management System (CMMS) and complete the tree inventory as currently planned.	High	Short-term 1-2 years
	10.2 Develop procedures/approach to include London Hydro maintenance activities in the CMMS to minimize redundancies.	High	Short-term 1-2 years
	10.3 Monitor the performance of newly planted species and assess their performance. Adaptively manage future species selection based on monitoring outcomes.	Medium	Short-term 1-2 years
	10.4 Identify the age distribution and projected life expectancy of trees within the current inventory.	Medium	Medium-term 3-5 years
	10.5 Estimate mortality rates within the current tree population and model the projected effects of natural mortality and losses due to pests and disease.	Medium	Medium-term 3-5 years
	10.6 Monitor budgets over time to refine the cost per tree establishment estimates and actual costs associated with the strategy in order to improve the accuracy of estimates to achieve the canopy cover targets.	Medium	Long-term >5 years

MAINTAIN BETTER			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
11 Monitor existing and potential canopy cover.	**11.1** Conduct an analysis of plantable space across different land use types within London in order to estimate canopy potential.	High	Short-term 1-2 years
	11.2 Monitor canopy cover change over time by land use types to measure strategy performance. An inexpensive, accurate and repeatable method such as the USFS iTree Canopy[j] program is recommended. This should be based on up-to-date summer aerial photography, and repeated at 5 year intervals, prior to or in conjunction with Official Plan reviews.	High	Short-term 1-2 years
	11.3 Monitor urban forest structure, function, and values over time using the USFS iTree Eco program. This should be repeated at 10 year intervals. The 2012 UFORE study can be used as a baseline and results updated with new iTree Eco local inputs. The iTree Eco re-analysis is to be completed and reported no later than 2018. iTree Eco is a new adaptation of the UFORE model.	High	Medium-term 3-5 years
	11.4 Model the projected canopy gain from the current and planned urban forest in order to refine estimates for the number of new plantings required and time to reach canopy cover targets.	Medium	Medium-term 3-5 years
	11.5 Establish long term monitoring plots in forest woodlands.	Medium	Long-term >5 years

MAINTAIN BETTER			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
12 Undertake research to improve urban forest performance and encourage adaptive management.	**12.1** Expand the testing and use of innovative methods of accommodating trees in locations with limited rooting capacity that will allow air and water to reach the roots and prevent soil compaction (e.g., Silva cells, structural soil, etc.).	High	Short-term 1-2 years
	12.2 Form research partnerships with local institutions to study different aspects of the urban forest such as forest health, the urban heat island effect and rain water interception as the canopy changes over time.	High	Long-term >5 years

ENGAGE THE COMMUNITY			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
13 Consult and cooperate with large private landholders to embrace citywide urban forest goals and objectives.	**13.1** Initiate discussion forums with stakeholders to promote the benefits of mature tree retention, provision of suitable plantable space and build recognition that trees will make a project better.	High	Short-term 1-2 years
	13.2 Initiate discussion forums with large land owners or managers to encourage stewardship and to ensure understanding and buy-in to strategic objectives. Consider partnering with other agencies to coordinate this initiative.	High	Long-term >5 years
	13.3 Provide education and support for stewardship management planning in rural areas and publicly acknowledge rural stewardship efforts. Consider partnering with other agencies to coordinate this initiative.	High	Long-term >5 years
14 Consult and cooperate with local nurseries, arborists, landscapers, etc. (urban forestry services) to embrace citywide urban forest goals and objectives.	**14.1** Establish a nursery growing contract to supply trees for city plantings and trees used in public planting initiatives. Investigate the potential for a partnership or knowledge sharing with other agencies who already have growing contracts with two nurseries in the region.	High	Medium-term 3-5 years
	14.2 Facilitate training and education workshops to communicate and obtain feedback on regulatory changes, professional report standards, canopy cover goals, tree retention techniques, best management practices and City expectations for supervision and tree management plans on development sites.	High	Medium-term 3-5 years

ENGAGE THE COMMUNITY			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
15 Consult and cooperate with citizens at the neighbourhood level to embrace citywide urban forest goals and objectives.	**15.1** Develop incentive programs such as an annual tree voucher or tree giveaway program, to promote tree planting on private property.	Medium	Short-term 1-2 years
	15.2 Prepare tree care or tree information cards for species-specific practices like tree watering and species identification, and identifications of their locations using the tree inventory. Send cards out at seasonally appropriate times to residents who have those trees on the boulevard in front of their house.	Medium	Short-term 1-2 years
	15.3 Work with neighbourhoods to develop neighbourhood tree plans that will guide implementation of this strategy; neighbourhood plans should define prototypical street tree applications and canopy cover targets for different land use types within that neighbourhood. Plans should also build a sense of shared responsibility for achieving canopy cover targets.	Medium	Medium-term 3-5 years
	15.4 Continue/expand the adopt-a-park program and partner with UTRCA and/or Community and neighbourhood organizations to facilitate neighbourhood workshops to encourage stewardship activities in these parks.	Medium	Medium-term 3-5 years
16 Consult and cooperate with the business community to embrace citywide urban forest goals and objectives.	**16.1** Facilitate stakeholder workshops with the local business community, coordinated with the London Chamber of Commerce and the London Development Institute, to discuss with business representatives the implementation of practices that will alter the canopy cover around commercial developments (i.e., malls, sidewalk cafes, car parks). Presentations to the Chamber of Commerce about the value of trees and opportunities for businesses to participate in new plantings through sponsorship or volunteerism will build a greater understanding of the value of the urban forest and reduce potential conflicts now and in the future.	High	Medium-term 3-5 years

ENGAGE THE COMMUNITY			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
16 Cooperate with the business community to embrace city-wide urban forest goals and objectives.	**16.2** Build on partnerships with business owners to increase tree cover and improve tree health and tree care in commercial and industrial zones.	High	Medium-term 3-5 years
	16.3 Provide an avenue for public recognition of outstanding contributions by businesses or institutions to urban forestry in London. The Veterans Memorial Parkway project is a successful model that could be duplicated in other areas of the city.	Medium	Long-term >5 years
17 Facilitate public understanding of urban forest management.	**17.1** Maintain an urban forestry website that provides more focus on customer service, is updated with seasonally appropriate information about the urban forest, provides information about upcoming urban forestry events and provides updates related to urban forest strategy objectives.	Medium	Short-term 1-2 years
	17.2 Continue to use opportunities such as National Forest Week, World Forestry Day, Earth Day and National Tree Day to promote urban forestry and raise the profile of London's urban forest.	Medium	Short-term 1-2 years
	17.3 Develop and fund an education campaign for stakeholder groups about the benefits of trees, to encourage tree planting, and to foster proper tree care.	Medium	Short-term 1-2 years
	17.4 Provide a synopsis of legislation, policy, and By-laws that apply to tree removals. This can be included in educational materials on urban forest management in London.	Medium	Short-term 1-2 years

ENGAGE THE COMMUNITY			
Strategic Goals	**Actions**	**Priority**	**Timeframe**
17 Facilitate public understanding of urban forest management.	**17.5** Develop and implement a comprehensive communication strategy. Ensure that the strategy is coordinated by Corporate Communications and all City departments participate in its development so that initiatives are coordinated and can be rolled out smoothly in the appropriate season (e.g., green-waste recycling in the fall, water conservation during the summer months, tree cutting permit to avoid the bird nesting season, etc.).	Medium	Short-term 1-2 years
	17.6 Make the City website and staff directory more accessible/navigable to make it easier for the public to contact staff with questions or concerns about the urban forest.	Medium	Medium-term 3-5 years
18 Consult and cooperate with neighbouring communities on regional urban forest management issues.	**18.1** Establish and facilitate an inter-jurisdictional working group to identify common objectives, build collaborative working relationships, explore greening opportunities, and address funding challenges across the region. A range of regional issues are relevant to implementation and the focus of this working group including canopy cover targets, forest health management, biodiversity management, tree waste management and watershed management and conservation.	High	Long-term >5 years

12. Conclusion

The City of London has a well developed urban forest that provides many tangible benefits to the community. The objective of the Urban Forest Strategy is to provide direction and a framework for managing London's urban forest to ensure these benefits continue. The vision of the Strategy is a healthy, diverse, and extensive urban forest for today and the future, defining London as the "Forest City". The strategy is supported by two companion documents. The Background Report (City of London Urban Forest Strategy: Part 1 – Background. B.A. Blackwell & Associates, 2012) includes a comprehensive review of relevant policy and current best practices, results of interviews with City staff and external stakeholders, the online public survey and results, a performance assessment of London's current program, and a suite of recommendations. This report formed the foundation of the Strategy. The Implementation Plan (City of London Urban Forest Strategy: Implementation Plan. B.A. Blackwell & Associates, 2014) sets out how the actions identified in the Strategy will be carried out and the resources required to do so. Both documents can be obtained from the City of London, Planning Department.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