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TO:	CHAIR AND MEMBERS PLANNING & ENVIRONMENT COMMITTEE
FROM:	JOHN M. FLEMING MANAGING DIRECTOR, PLANNING AND CITY PLANNER
SUBJECT:	URBAN FOREST STRATEGY AND IMPLEMENTATION PLAN- KEEPING THE FOREST IN THE FOREST CITY MEETING ON JUNE 3, 2014

RECOMMENDATION

That, on the recommendation of the Managing Director, Planning & City Planner, the following actions **BE TAKEN** regarding the Urban Forest Strategy and Implementation Plan, recognizing the importance of the urban forest to the quality of life in London:

- a) The Urban Forest Strategy, attached as Appendix 'A', **BE ADOPTED** for the long term sustainability of London's urban forest;
- b) The Urban Forest Strategy Implementation Plan, attached as Appendix 'B', **BE ENDORSED**, outlining the proposed actions to implement the Urban Forest Strategy, and;
- c) Civic Administration **BE DIRECTED** to submit a Business Case with respect to implementing the Urban Forest Strategy as part of the 2015 Budget process and future years as required. It being noted that Council has already supported enhanced community planting efforts through the 2014 budget process for action item 9.3 of the Strategy.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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- April 15, 2014 Trees and Forests Advisory Committee report
- February 12, 2013 Council Resolution regarding TFAC report and comments
- May 7, 2012 UFORE project summary and Urban Forest Strategy report to PEC
- June 21, 2010 UFORE project summary and Urban Forest Strategy report to ETC
- June 7, 2010 Forestry Services Strategic Review report to SRC

BACKGROUND

London is known as "The Forest City". City Council's strategic plan states that we "*value and protect our environment*" and that "*the decisions we make are environmentally responsible for today and sustainable for tomorrow. We are a community that is growing but understands it must take a careful and balanced approach to preserving and protecting our natural environment, knowing it is essential to our prosperity, sustainability and quality of life.*"

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Why is London’s Urban Forest Important?

The urban forest provides many environmental, social and economic benefits and services to our society. Some of these are shown below.

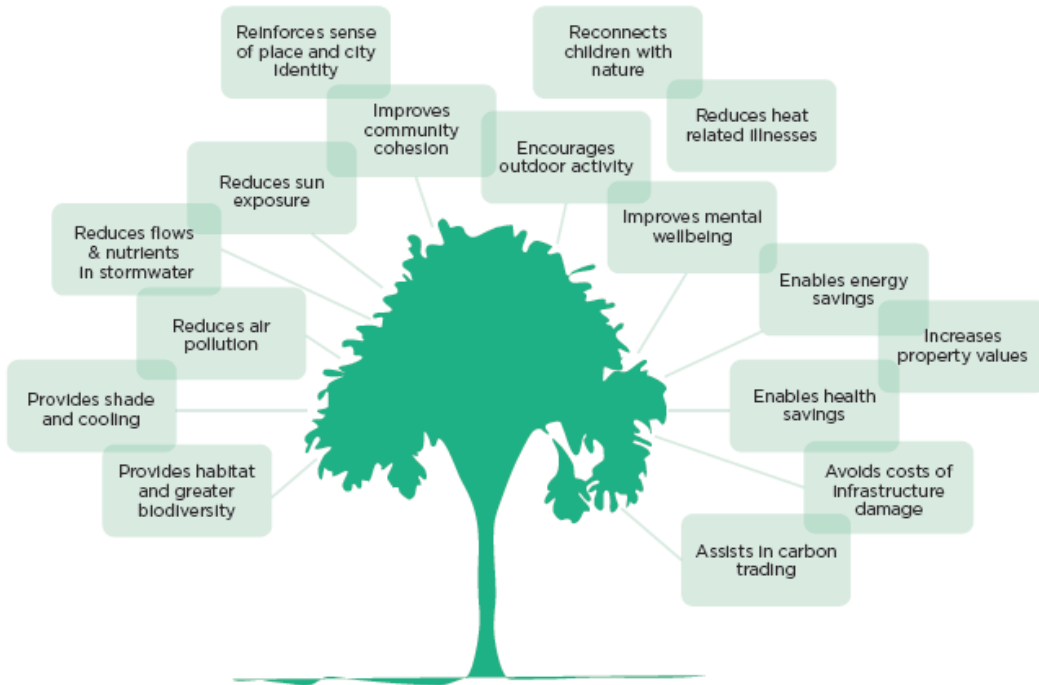


Figure 1. Overview of the benefits and services provided by urban forests (Culligan and Gye. 2012)

A monetary value can be calculated for the benefits and services. The value of trees is no longer calculated as lumber or just the cost to cut them down or replant with another tree. Trees are assets that increase in value with time and size and which can be further enhanced depending on their species, health and location. Two key concepts that influence the level of benefits are: 1) the right tree in the right place, and; 2) when it comes to trees, size does matter. Therefore the quality of trees and canopy cover can sometimes be more important than the quantity (Figure 2).

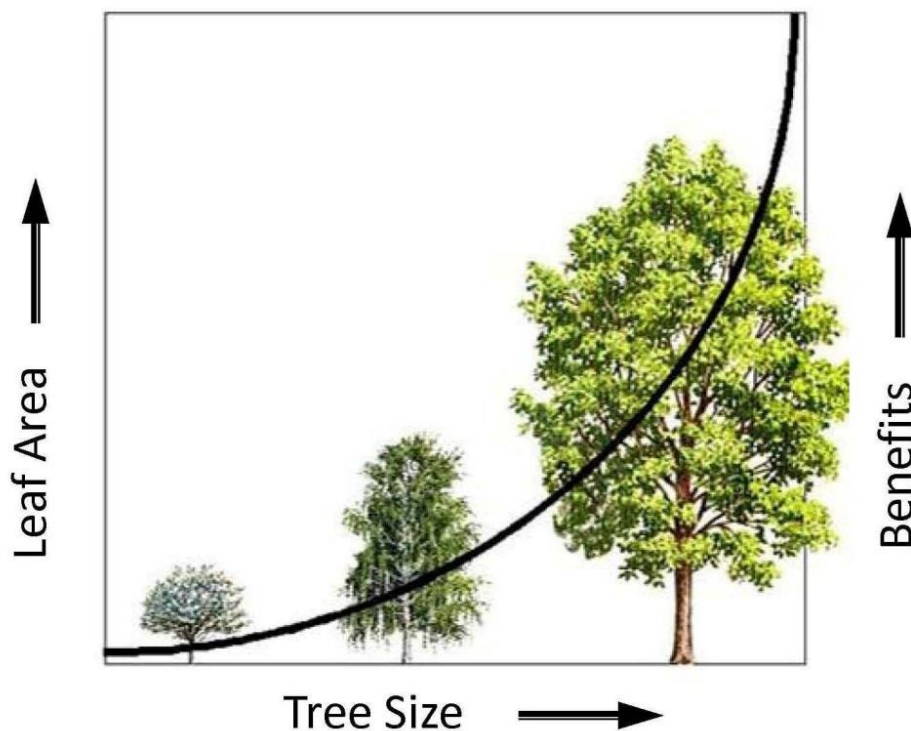


Figure 2. When it comes to trees, size does matter (W.A. Kenney graphic).

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In 2008 the City embarked upon its first comprehensive study of its urban forest through the implementation of an Urban Forest Effects (UFORE) analysis. It was a snapshot-in-time of the urban forest within the Urban Growth Boundary (UGB) portion of the city. The analysis did not seek to determine if past or current management practices were satisfactory or not. The analysis identified the structure, functions and value of one of London’s most vital assets and is the benchmark from which to measure current and future management performance. Highlights of the study include:

- 4.4 million private and public trees with a structural value of over \$1.6 billion;
- \$17 million+ of environmental benefits annually
- 24.7% tree canopy cover

The above estimates are conservative because the analysis only looked at trees within the UGB and there were approximately 2 million additional trees in the rural areas, mostly in private woodlands.

The Urban Forest Strategy builds on the UFORE analysis and provides the vision and strategic direction for the long-term management of the urban forest. The Urban Forest Strategy identifies **what** we aim to achieve; it is complemented by an Implementation Plan which identifies **how** we will achieve it, the resources required and expected timeframe for various actions.

WHAT IS THE URBAN FOREST STRATEGY?

The “Urban Forest” refers to all trees and related features within our municipal boundary regardless of land use type or ownership. It includes individual trees on boulevards, trees in parks, in woodlands, in back yards, in wetlands and riparian areas, as well as landscaped areas on business, institutional or educational properties. It is an “ecosystem” that evolves over time and is highly influenced by external environmental factors such as climate change and invasive species, such as Emerald Ash Borer, and also by land use decisions.

The Urban Forest Strategy and its Implementation Plan answer the following questions:

- What have we got?
- What do we want?
- How do we get what we want?
- Are we getting what we want?

The strategy provides the guiding principles and management actions for the next twenty years to achieve the vision and goals that have been identified by our residents individually and collectively as stakeholder groups. It is intended to be reviewed every 5 years and may rely on adaptive management to ensure long term objectives are achieved. The Strategy is intended to support and implement the Official Plan policies and the direction to become one of the greenest cities in Canada.

How Was It Developed?

Public consultation was a key component in developing the Urban Forest Strategy. The Urban Forest Strategy attempts to capture our community’s vision for its urban forest, identify the values of different sectors of our community, and establish the correct trajectory within a 20-year timeframe, to achieve our community’s vision.

Public and stakeholder consultation was conducted over 6 months in 2012. During the launch of the new Official Plan (ReThink) over 300 residents provided their vision, priorities and issues to be addressed using a ‘dotmocracy’ process. From this, the consultant, BA Blackwell & Associates developed a range of questions and public on-line survey on the City’s *Focus on the Forest* web page. We received over 1,758 responses including 592 additional written comments from the respondents. Additionally 15 external stakeholders, including London Development Institute (LDI), and over 30 staff from different Divisions were interviewed and

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their concerns taken into consideration. The Trees and Forests Advisory Committee has played a key role in the development of this strategy throughout the process.

The messages were very clear that the City needed to do more and do better with respect to managing our urban forest. An overwhelming number of people strongly identify with our brand and London should continue to be called “The Forest City”. The top 3 concerns that were identified from the survey were:

- Overall tree preservation and protection;
- Lack of tree cover, and;
- Protection of heritage/historic trees

WHAT ARE WE TRYING TO ACHIEVE?

Residents recognize the value of the urban forest and have very high expectations for its management and an increase in benefits and services in the future. The Vision is a healthy, diverse, and extensive urban forest for today and the future and that London remains “The Forest City”. The urban forest will be resilient and will continue to provide environmental, social, economic and other values for future generations of Londoners.

From the public consultation process, the following four key themes or guiding principles were identified and form the cornerstones of the Strategy and Implementation Plan:

- **Protect** more trees on both public and private property where they are providing benefits or supporting the integrity of natural features. The trees that will provide the most services 40 years from now are already in the ground.
- **Maintain and Monitor** existing trees. Proper and regular maintenance will and improve the health and increase the life and value of the trees.
- **Plant more and Enhance** the urban forest canopy cover. All trees will die, but cannot be replaced naturally in many urban locations. Strategic planting can maximize the benefits, increase biodiversity and reduce long term risk from damaging agents.
- **Engage the Community** in the management of our urban forest. Approximately ¾ of all trees in urban areas are privately owned and this percentage is even higher in rural areas. The community can leverage resources and funds that are not available to the City Administration.

WHAT ARE THE ISSUES?

The urban forest is a constantly evolving ecosystem that is affected by environmental factors and land use decisions. What was once a vast Carolinian forest has been transformed into a patchwork of farms, urban development and scattered woodlands. The existing vegetation can greatly change in less than a week due to storms or urban growth, however it takes up to 40 years for a tree to attain a size where it begins to provide a significant amount of benefits and services. On the positive side, development on poor or underutilized land can result in an increase in trees through landscaping. To be effective, the urban forest must be managed as a long term investment in the quality of life of our City. Some major issues with examples are identified in the following table. It is not meant to be an extensive list but serves to understand the complexity involved in managing the urban forest.

Management Issues	
Environmental Factors	Land Use Decisions
<ul style="list-style-type: none"> • Climate change (increased droughts) • Invasive species (buckthorn) • Insects (Emerald Ash Borer) • Diseases (Dutch elm disease) • Old age (Old North silver maples) • Extreme weather events (ice storm) • Compacted soils (new developments) • Animal damage (deer browsing) • Pollution (acid rain) • Geology (alkaline or acidic soils) • Biodiversity (reduced number of species due to invasive species) 	<ul style="list-style-type: none"> • Aging Infrastructure (sewer replacement) • Utilities (hydro line location) • Loss of plantable area (boulevard parking permits) • Development standards (grading results in loss of valuable soil and unsuitable growing conditions) • Past practices (hydro line pruning) • Environmental protection legislation vs. urban intensification pressure (large trees can still be removed) • Lack of tree protection standards (indiscriminate tree removals on private property) • Current staffing levels (lack of enforcement capacity of standards) • Current funding levels (infrastructure gap)

Historically, trees were not considered as infrastructure and renewal plans and funding were minimal. They were typically one of the last elements considered in the planning process. Many more trees could have been retained and planted over the years if more consideration for trees had occurred earlier in the process. Additionally, maintenance and woodland management funding has been inadequate resulting in a decline in the overall health, quality and quantity of the trees. Consideration of trees as infrastructure has been a major step forward in preserving this asset. Council took a very positive step towards reducing the infrastructure gap for trees. However, there is still an infrastructure gap for City trees (Figure 3) which remains a concern.

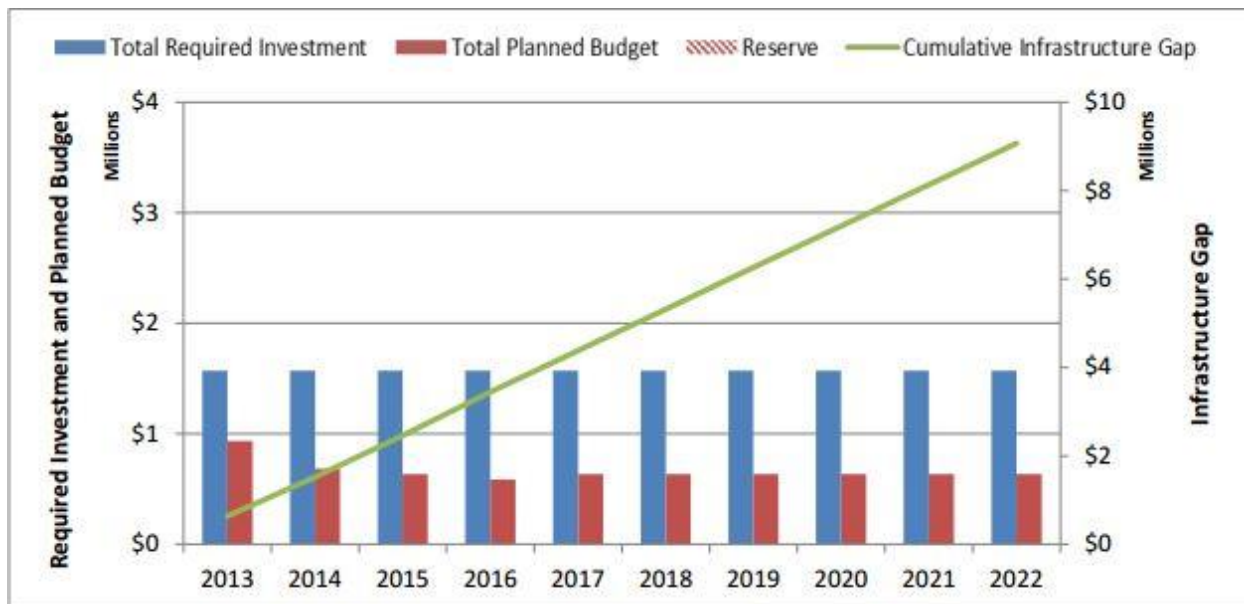


Figure 3. Forestry Infrastructure Gap. The current \$0.6m gap will increase to \$9 million by 2022 with current level of funding (Corporate Asset Management Draft State of Infrastructure Report, 2013). This budget does not reflect the additional \$200K allocation in 2014 to replace the provincial EAB funding that expired at the end of 2013.

If current management practices (both on private and public land) continue our future urban

forest will have fewer and smaller trees. The forest will be more susceptible to catastrophic losses due to a variety of factors from which it may not be able to recover, even if we increase the level of funding at that time. There may not even be sufficient funding available to deal with environmental catastrophes when they occur. Future environmental and other benefits and services will be reduced and the overall quality of life for future generations will be lower.

Figure 4 shows the trends and impacts of potential management scenarios on the urban forest. The value and associated benefits have already been reduced from 2008 levels based on the impacts of Emerald Ash Borer (EAB) and urban growth. EAB impacts (e.g. reduction of tree canopy cover from 24.7% to 22.9%) will still continue to for years.

- This is the worst case scenario with status quo management by both the public and private sectors and potential catastrophic events such as an ice storm, Asian Longhorn Beetle (which alone attacks over 40% of our species), flooding, tornado, etc.
- This represents status quo levels of management and assumes that there will not be any catastrophic environmental events. This is an optimistic estimate as there have been periodic impacts (Dutch elm disease in the 60's, Hickory borer and EAB in the last 15 years).
- This represents the impact of filling the infrastructure gap in both the public and private realm. It assumes that existing trees will be maintained better and replanted as they die (i.e. 1:1 replacement ratio). It does not account for the trees that have already been lost and not replaced. This scenario assumes that the level of management by the private sector is similar to that of the City.
- This represents the potential gains in cover and benefits associated with implementing the Urban Forest Strategy across the public and private realms. The Strategy has a short term goal of recovering the tree canopy lost due to EAB by 2035. The Strategy sets the foundation to be able to enhance the urban forest and achieve a potential canopy target of 32% by 2065. The success of this scenario depends on the level of commitment of all sectors of community.

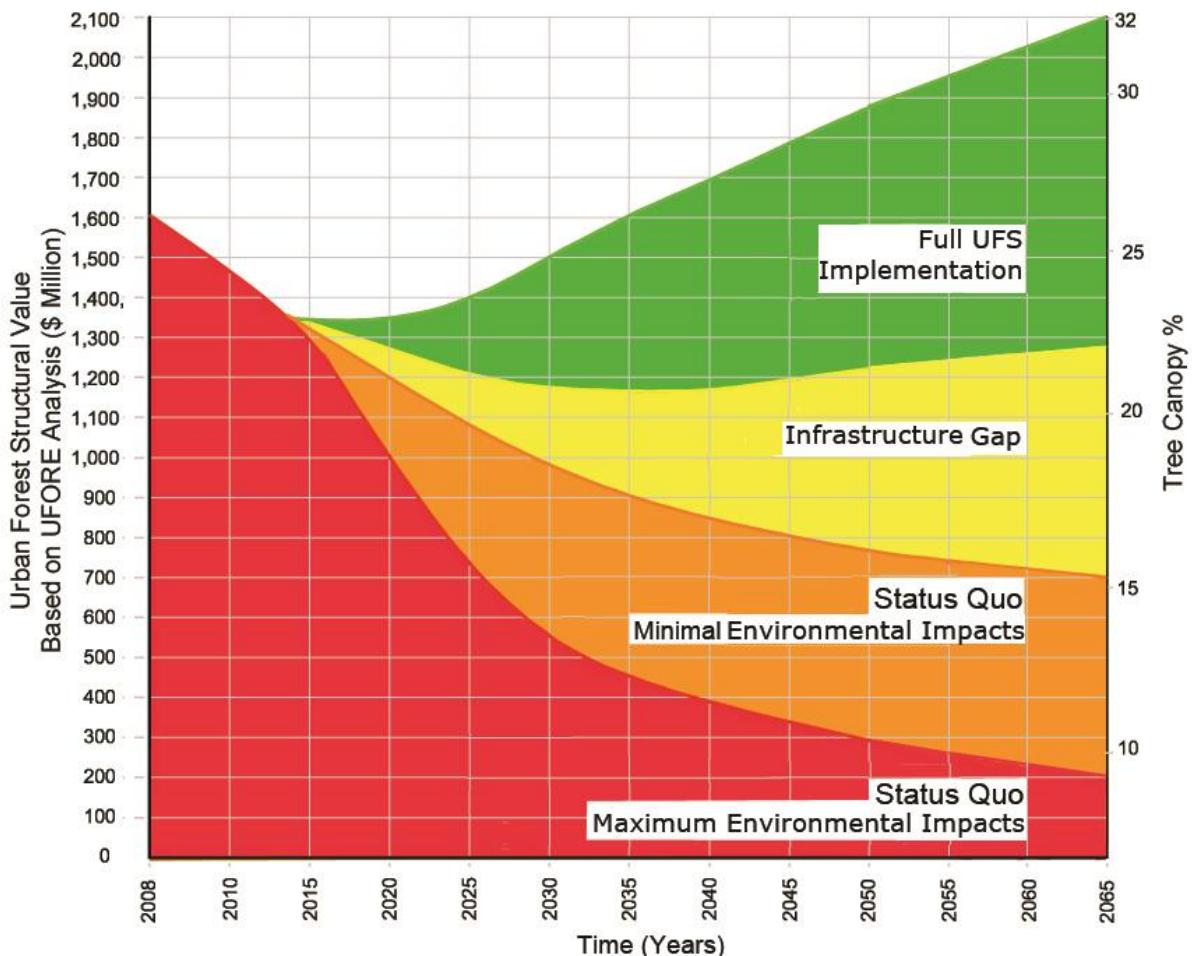


Figure 4. Impacts of various management scenarios on urban forest value and tree canopy cover.

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WHAT ARE OUR SOLUTIONS – HOW ARE WE GOING TO MAKE IT HAPPEN?

We now have a very good understanding of the structure, function and value of our urban forest. Residents and stakeholders have told us what other values they consider to be important to them both through the Rethink process and this consultation process. This Strategy and Implementation Plan is a **Call To Action** to remain the “The Forest City”. Council and staff cannot achieve the Vision on City property alone because most of the land and trees are on private property. It requires a commitment from Council, all residents and all stakeholders to all work together to achieve our Vision for both London and our urban forest.

The Strategy has identified issues and management solutions. **Consider the four guiding principles as links in a chain.** The chain is only as strong as its weakest link. They must **all** be supported or the chain will break. Planting more trees without protecting or maintaining existing trees throughout their life cycle will not achieve our Vision.

The Implementation Plan identifies how the Vision can be achieved. It is divided in to 3 distinct time frames: Short-term (2015 and 2016 for funding but recognizing that some actions may occur in 2014); Medium term (2017-2020), and; Long-term (2021-2035). The overall cost is approximately \$26 million and could vary depending on when some of the actions within these broad time frames are implemented. This funding of an average of \$1.3 million by per year by Council represents an investment of 0.06% of the final urban forest value of a \$2 billion asset with the City owning approximately \$660 million of that. In order to achieve the Vision, residents and stakeholders will also have to invest in our urban forest directly or indirectly.

Some of the Short term critical action items are highlighted below. A more comprehensive list of action items by time period is detailed in the Implementation Plan (Appendix B).

Short Term Priorities			
Plant more and Enhance	Protect	Maintain and Monitor	Engage the Community
Establish tree canopy targets for Place Types	Hire 2 additional staff for forest health and enforcement	Establish inter-divisional Implementation Team	Develop comprehensive communications strategy
Develop overall planting strategy	Strengthen tree protection by-laws	Remeasure tree canopy to determine change since 2008	Initiate public and stakeholder information and discussion forums
Apply right tree-right place practices	No ‘net loss’ of tree canopy cover	Complete CMMS and update inventory information	Promote London’s urban forest

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5-Year Projected Investments					
INVESTMENTS	2015	2016	2017	2018	2019
CAPITAL	137	258	663	663	663
OPERATING	201	22	330	365	0
TOTAL	338	280	993	1028	663

Note: This table reflects a staged implementation of action items which defers some carryover operating costs into the second and future years.

To support the Strategy and Implementation Plan, a Business Case will be submitted to address, initially, additional staff and capital costs will be required to kick-start the implementation of the strategy and better address the protection of our existing urban forest. Future Business Cases will be submitted to support the actions items as required. Additionally, as previously directed by Council, Staff will be updating the Tree Conservation By-law in the summer of 2014.

The cost of not implementing the strategy has significant impacts for London. Some of these include:

- London’s brand as “The Forest City” may be jeopardized
- Failure to achieve the Vision and goals of the Strategy and Official Plan
- Loss of confidence of the public
- Through reactive management, we are very susceptible to natural catastrophes and human caused impacts that will cost much more to mitigate than we could afford if we invested regularly and proactively
- Our City’s forestry infrastructure gap is currently \$637K and expected to increase to \$9M by 2024 without additional funding
- Climate change impacts will increase, affecting all trees and result in the overall decline and resiliency of the urban forest health
- Future environmental, social, economic and other benefits provided by our urban forests will be lower than what we have today

SUMMARY

London is “The Forest City”. We are currently enjoying the urban forest benefits that we have inherited from previous generations and we value both our brand and our current quality of life.

We are at a pivotal point in time in the management of this multi-billion dollar asset and resource. In this time of climate change, increasing pest and disease infestations and evolving urban growth pressures, status quo practices and funding to maintain our urban forest will result in fewer trees, smaller trees, reduced benefits and value that will negatively impact all of us and future generations of Londoners.

The Urban Forest Strategy and Implementation Plan will determine how our urban forest will be managed for the next twenty years. This in turn will determine the structure, functions and value in the future as it takes many years for trees to maximize the benefits they can provide. The Strategy is an **investment in the future** quality of life and a **Call to Action** to achieve the public Vision and maintain and improve on our brand as “The Forest City”, which our residents and stakeholders have strongly told us are important to them. All four guiding principles (Plant and Enhance, Protect, Maintain and Monitor, and Engage the Community) must be supported by both municipal government and the public because they are all links in management chain. The success of the Urban Forest Strategy depends on the level of municipal funding and support and engagement of our residents and stakeholders.

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Acknowledgements: Sara Rowland, Urban Forestry Planner, B.A. Blackwell and Associates Ltd in the development of the strategy. Trees and Forests Advisory Committee for their ongoing support and all the residents and stakeholder group who have provided their input into this strategy. Sara Rowland, Urban Forestry Planner, and Lisa McNiven, Parks Project Coordinator, in the development of this report.

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Appendix A

Urban Forest Strategy

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Appendix B

Urban Forest Strategy Implementation Plan