

## Victoria's Urban Forest: Asset or Liability?



As evidenced by several major reports produced by the City since 1995, Victoria needs an action plan to address an increasingly vulnerable, hazardous, and ageing urban tree population. This discussion paper reviews these reports, as well as the benefits of investing in and managing healthy urban forests. It also makes key recommendations for improving the state of Victoria's forest in order to reduce significant liabilities and maximize social, economic and environmental benefits.

Without a strategic commitment to action the assets derived from Victoria's urban forest will continue to decline, while liabilities will only grow. Budgetary and planning commitments need to be made now the 1995 report foresaw that a lack of timely action would lead to the greater challenges facing Victoria at this time. Failure to take concrete action, then and now, has consequences.

There are ample reasons to act now beginning with public safety. More than that, trees in our urban forest are the only public investment that increases in value over time. As outlined in this paper, our forest provides social, ecological and economic benefits that far exceed the economic investment in its planting and care. In order to reduce liabilities and increase assets, this report makes 6 recommendations. They focus on replacement of hazardous trees, re-planting of all vacant sites, the adoption of a **comprehensive action plan**, as well as public advisory committees and an updating of the Tree Preservation Bylaw.

### 20 Years of Evidence:

In 1995 the City commissioned a sample inventory and program evaluation of its boulevard tree population, which was published in 1996. Based on this sampling the report established the condition of Victoria's ~16,000 boulevard trees and made some practical recommendations to address a number of concerns associated with the condition of street trees in the City. Recommendations focused on improving strategic planning of boulevard tree management through a master boulevard tree plan and increasing planting and professional management of trees in order to sufficiently replace an ageing street tree population. The report called for:

- the creation of a master boulevard tree plan based upon "a complete and up-to-date inventory";
- administering a "prioritized tree maintenance" strategy to address public safety issues;
- a multi-year tree replacement project that operates on "5-7 year cycles.";
- implementing a "public education program";
- increasing nursery stock from 150-200 to 500 per year to support replacement of old trees and;

- diversifying the urban tree population<sup>1</sup> to promote biodiversity and habitat enhancement.

There is no evidence that these recommendations have been effectively implemented.

Ten years later, in October of 2005, the City contracted a complete inventory of the street tree population. The report documents: 17,842 street trees with 190 species represented, 1417 vacant planting sites, 161 stumps, and 318 co-owned trees on the City's boulevards. The report also assesses the cumulative monetary value of Victoria's urban forest at \$39,139 for street trees alone, a sum that only increases once social health and environmental benefits are taken into account.

This 2005 report describes the prevailing tree maintenance strategy in the City of Victoria as one that tries to "put out fires" by responding to calls and complaints. The report highlights the City's increasing inability to keep up with replacing tree removals; it shows the ageing tree population is being lost much faster than it is being replanted. The 2005 report makes many of the same recommendation as the 1995 report: Victoria needs a street tree management plan; deferring this work will result in a need to invest more money in the future. The report recommends committing more resources to 1) help address urgent tree management and replacement needs and 2) complete a street tree management plan.

Following the 2005 report the City was expected to produce an action plan. However, in February of 2013, 8 years later, the City released a "roadmap" or "high level plan" for the urban forest (including boulevard and park trees, as well as trees on private land). It seems important to ask "why a *roadmap*?" when the 1995 and 2005 reports presented the case and laid the groundwork for the urgent development and implementation of an *action* plan. Failure to act promptly diminished the usefulness of previous reports.

Failure to develop and implement an effective action plan for managing and developing Victoria's urban forest has meant that previous inventories, and the funds and staff time invested in them, were not well used.

Despite a lack of strategic direction to address the pressing need for a concrete action plan, the 2013 report is useful as a vision for the future of Victoria's urban forest. With expert and community consultation, this Urban Forest Master Plan lays out broad recommendations, which the report itself suggests need to be followed up by a more strategic and focused Urban Forest Action Plan.

The report highlights 4 key goals for Victoria's urban forest: 1) develop and maintain community support for urban forest; 2) protect, enhance, and expand our urban forest; 3) design and manage our forest to maximize watershed health, biodiversity and conservation, and; 4) maximize community benefits. This report again highlights the significant number of "defective", "overage" and hazardous trees in the City, further highlighting the concern that we are losing tree density and abundance and increasing liability through inaction.

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<sup>1</sup> The report states that, "no one [tree] species should account for more than 10% of the population and no single genus should comprise more than 30% of the population" (1995 6).

The 2013 report makes 26 recommendations for the management of Victoria's urban forest. Key among these are:

- Create a comprehensive 5 year plan for maintenance/development of urban forest
- Plant more trees
- Revise the Tree Preservation Bylaw to address removal of young protected trees, increase replacement ratios and increase multi-functionality of trees – “piggy-backing” services
- Promote/support tree planting and stewardship on private land
- Continue a vigorous street tree replacement program
- Map, measure, and ID new places for planting trees
- Let residents “host” trees on public land (i.e. boulevards)

Key investments that the City can make to support the achievement of these recommendations are prioritized in the report. The 5 areas requiring immediate attention are: staff time/resources, technology and training, maintenance, enhancement, and community outreach and communication.

While the Urban Forest Master Plan was being developed, Most recently, the City commissioned an inventory of all City owned trees (2013) that was accompanied by a tactical plan for managing all trees on public land (2014). While the inventory and tactical plan document the existing condition of trees on City land and recommend immediate attention to hazardous trees, they do not set out budgetary action items. The question here is what actions the City proposes to reduce liabilities and increase the assets associated with our urban forest? This discussion paper uses the information in these reports and recommends clear action that urgently needs to be taken.

In summary, City reports highlight that over the past 20 years, considerable work has been done and resources expended to document the condition and make recommendations for the management of Victoria's urban forest. The reports document that Victoria's urban forest is ageing and includes a significant number of hazardous and structurally unsound trees that need to be dealt with very soon. Beyond broad strategies to replace an increasingly aged tree population, Victoria needs a comprehensive, forward thinking approach to maintaining and developing its urban forest now and into the future, one that manages on the basis of the whole forest while taking into account distinct conditions of specific streets and neighbourhoods.

## **A Smart Investment**

Conservative estimates show that for every \$1 invested in Victoria's urban forest, about \$4.00 is returned in quantifiable economic benefits. This records nothing of the qualitative worth of our urban tree population. A recent report by TD Economics written on the economic benefits of Toronto's urban forest suggest that each tree in Toronto provides \$700/year in annual benefit, which amounts to \$7 billion dollars across the entire urban forest. Victoria invests \$39/tree currently, so at the rate of return suggested by the TD report, we accrue almost \$18 for every dollar spent.

Trees are the only public infrastructure investment that appreciates in value over time. Investing to preserve and enhance our urban forest reduces the need for more costly maintenance and removal down the road, a situation now confronting the City. Having understood this fact, many urban municipalities are investing significantly in sustainable, forward thinking approaches to *increasing* the diversity, density and value of their urban forest.

The literature makes clear the many benefits of investment in Victoria's urban forest:

#### Community Health

- Increase community engagement/involvement
- Increase privacy and buffering of sound
- Improve community character and aesthetic beauty

#### Individual Health

- Reduce stress levels
- Lower blood pressure
- Access to nature provides multiple physical and psychological benefits
- Potential to increase access to healthy local food

#### Environmental Health

- Clean air
- Sequester carbon
  - 110,000 tons of air pollutants removed/year, valued at \$273,000
- Provide habitat
- Filter and clean groundwater
- Soil retention and development

#### The Local Economy

- Reduce energy use (heating and cooling)
  - 5,430 GJ reduction in electric energy consumption
  - 15,107 GJ natural gas consumption
- Reduce demand on and need for municipal storm water infrastructure
  - In Victoria trees provide \$2 million of service/year
  - Capture 93,638 cubic meters of rainfall annually
- Preserve road surface
  - Tree shading extends asphalt life 10-25 years
- Increase tourism
- Increase property values
  - Residential increase 3-15%
  - Commercial increase 7%
- Increase consumer activity

### **A Forward Looking Approach**

It is time for Victoria to take action immediately to ensure unsound, trees are replaced, risks from hazardous trees are eliminated and our urban forest does not decline below

its current density, distribution and value. A longer-term strategy should increase both the overall density as well as the services provided by the urban forest, which will provide significant long-term benefits to the City and its residents. Only 18% of Victoria is covered by tree canopy, a significant portion of which is coming towards the end of its life. Without a committed tree replacement strategy and an active, ongoing tree-planting program, we can expect our canopy to continue to decline, increasing liability and reducing assets.

Despite a significantly denser human population and with fewer places to plant large canopy trees, Vancouver currently equals Victoria's 18% canopy cover. Yet Vancouver has taken a pro-active approach and plans to plant 150,000 new trees by 2020 and increase its overall urban forest canopy to 22% by 2055. Seattle already has an urban forest canopy that covers 23% of its city and has developed a detailed action plan to plant more trees to increase this canopy to 30% by 2037.

In Victoria a minority (14%) of the City is well treed, while 86% of our neighborhoods are minimally or lightly treed. Therefore there is a pressing need to develop and implement a serious Urban Forest Action Plan that commits to action with corresponding budgetary commitments on a reasonable timeline. To date this has not been done, not even for the 846 boulevard trees that the 2014 report on Tactics for Tree Management recommends for immediate removal and replacement. The inventory estimated a similar number of immediate removals in parks and green spaces.

Below are 6 recommendations that, if acted upon immediately, can set Victoria on a proactive, results-oriented path to effectively managing its urban forest. These action items can be efficiently realized in part through more effective management and staff collaboration with community groups and residents who have the knowledge, experience and expertise to support tree planning, planting and maintenance. Professional arborists can support and advise on tree health and planting, while groups like LifeCycles, the Greater Victoria Compost Education Centre and the Horticulture Centre of the Pacific have the networks, skills, and expertise to support community engagement in developing and maintaining Victoria's urban forest. At the same time partnerships such as the one with BC Hydro need to be more effectively managed or they may be lost. These action items are based on common guiding principles, which should be adopted as a foundation for continuing to develop a comprehensive urban forest action plan in the coming years. These guiding principles should include:

- **Diversity of Species and Age** – Healthy forests are diverse in their species and age and emphasize trees suitable for our climate and planting sites
- **Right Tree Right Place** – Consideration of the physical, ecological and social context so that the right tree is planted in each specific place
- **Multi-Functionality & Piggy-Backing Services** – City trees can provide multiple services, urban forest should be managed to maximize these benefits
- **Neighbourhood Approach & Consultation** – Trees impact and belong to entire neighborhoods making appropriate consultation essential
- **Whole City** - The urban forest consists of the entire urban landscape and should be managed accordingly, artificial separation of public and private land is counter-productive

- **Public Engagement** – All people in Victoria should be encouraged to participate in the planning, development and on-going management of their urban forest

## **Recommendations**

### **1. Immediate Removal and Replacement of Hazardous Trees**

The 2014(2013) Tactics for Tree Inventory Management report recommends 846 trees for immediate removal from boulevards due to liability risk. Another 74 urgently need to be pruned. With the removal of these liabilities, we must also ensure that these trees are replaced within one year of removal. Again, the cost of replacing hazardous trees is far less than the liability that currently exists.

The City estimates ~ \$ 400 for each removal and ~ \$1200 for each planting, which includes site preparation, tree purchase and planting, and maintenance over a 5 year period. It will cost ~\$1.3 million for the City to remove the 846 dangerous street trees and replace them with safe, healthy trees.

### **2. Planting Vacant Sites as a Priority**

The 2013 inventory of street trees indicates there are 1111 vacant tree planting sites on City streets and boulevards. We recommend these be planted immediately. This will cost ~\$1.4 million.

However, it is important to note that with resident assistance with tree maintenance, such as regular watering and seasonal care, the above-mentioned costs can be appreciably reduced. More than that, as noted above, the cost of the proposed planting and replacement campaigns will produce benefits of nearly \$4 for each \$1 invested.

### **3. Adoption of a Long-Term Tree Planting Program**

**Re-planting on vacant sites and replacing hazardous trees is not enough to meet the City's goals and needs.** A planting plan must be developed immediately so that over the next 4 years the City makes significant progress towards the restoration of Victoria's urban forest. This long-term planting campaign should seek public participation in the planning, planting and maintenance of trees on both public and private land. By involving local residents in the management of our urban forest, the City can significantly reduce the costs of planting and maintaining individual trees and greatly increase public support. This planting campaign should:

- a) identify priority planting sites on public land –streets, parks and green spaces
- b) engage the public in the funding, planting and maintenance of trees on private and public land<sup>2</sup>.
- c) identify and meet targets for tree planting on both public and private lands.

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<sup>2</sup> See Vancouver's Tree Keeper program as a possible model: <http://www.treekeepers.ca/>

Funds budgeted by the City can be supplemented by various campaigns for example a voluntary check-off on tax assessments, a voluntary or compulsory hotel room contribution, and/or establishment of a Re-Tree Victoria Fund.

While the cost of the proposed planting and replacement campaigns is significant, it is still estimated to be far less than the liability that currently exists from known hazardous trees and will produce significant social, economic and environmental benefits.

It is recommended, based on successful models elsewhere, to create an ongoing public advisory board to work with staff, elected officials and the public to maximize the benefits and ensure the sound management of Victoria's urban forest. Whether or not this "Tree Board" is established, the following actions need to be taken as soon as possible.

#### **4. Establish Committee to Recommend Updates to Tree Preservation Bylaw**

Immediately convene a committee to make recommendations on changing the Tree Preservation Bylaw to ensure that trees are not removed on public or private land without due cause.<sup>3</sup> Further strengthen existing protection by increasing the number of protected species and reducing size to qualify for protection. Current loopholes are allowing too many healthy, productive trees to be lost. Furthermore, the decision to approve or deny a permit currently fails to consider the value of the tree to adjacent properties, the neighbourhood and the overall forest, with too much emphasis placed on a single property or site. A fairer and more effective approach needs to be found.

Most of the species comprising the City's forest are unprotected and the dimensions currently required restrict protection to only the largest trees. Healthy, productive trees are being unnecessarily lost. Moreover, this committee should be asked to develop and help implement a neighborhood consultation program to ensure community members are invited to participate and support the process of Bylaw amendment.

There are too many instances where healthy trees could have been preserved and that's not happening because the recommendations given haven't been implemented and trees are being fatally damaged or removed because homeowners and builders don't take the proper measures to protect them. And requiring them to just stick replacement trees in the somewhere in the ground without anyone taking responsibility for their maintenance isn't a successful strategy.

#### **5. Establish Committee to Recommend How to Increase Services Provided by Urban Forest**

The LifeCycles Project Society is well-respected for its knowledge and experience with food-bearing trees. LifeCycles should be invited to convene and chair a committee to make recommendations on how the City can fully involve citizens in developing and managing its urban forest while increasing the services provided by City trees.

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<sup>3</sup> See the recently amended Vancouver Tree Bylaw as a model: <http://vancouver.ca/your-government/protection-of-trees-bylaw.aspx>

Recommendations should focus on public engagement about: 1) the planting and maintenance of food-bearing trees and 2) the planting and maintenance of mini neighborhood forests that can provide ecological, social and economic returns.

## **6. Develop a Comprehensive Urban Forest Action Plan**

With due haste, develop a request for proposals and select a contractor as soon as possible to research and develop a comprehensive action plan for Victoria's urban forest that builds upon the Urban Forest Master Plan's recommendations while maintaining a strong commitment to the guiding principles and recommendations outlined in this document.

## **Conclusion**

The past 20 years have seen a decline in Victoria's urban forest. We are losing valuable assets and facing increasing liabilities due to unsound and hazardous trees. The social, economic and environmental benefits of our urban forest, as well as strong public support for its development, further encourage action now. The City needs to act now to implement a program that addresses hazardous trees, (re)plants vacant sites, includes a long-term tree planting program and engages the public in preserving, maintaining and increasing the long-term benefits of a healthy urban forest. By creating effective community partnerships and demonstrating committed leadership to develop our urban forest the City can reduce liabilities and greatly increase assets for current and future generations.

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