BEAC Delegation
Tree Maintenance & Aftercare

Sept 8, 2021

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Brampton Environment Advisory Committee

Why are we here?

Are current tree planting and maintenance practices enough to ensure growth and sustainability of Brampton's urban forest cover?

- Lack of watering for newly planted trees.
- Perception that more than 10-15% of planted trees are not surviving the 2-year warranty period.
- Perception that many "surviving" trees are not thriving
- Perception that, despite the planting efforts of the City and other organizations, the % of urban forest cover is stagnating or declining due to events such as the 2013 ice storm, tree diseases including EAB, Beech bark disease and other stresses due to climate change.
- That invasive and non-native species are still being offered to the public as options for memorial tree plantings

Delegation Preparation

- **Reviewed City tree planting plans & maintenance policies**
- **Researched tree maintenance programs in other jurisdictions**
- **Reviewed recent research on tree maintenance impact**
- **Thanks to Zoe Milligan, Environmental Planner & Edward Hunwicks, Supervisor of Urban Forestry for providing additional background information**

BRAMPTON
brampton.ca Flower City

Date: August 12, 2021

Subject: City of Brampton Tree Maintenance Summary

Newly Planted Trees

- The City of Brampton contracts out the majority of new tree planting (trees planted on streets, boulevards, existing parks, and through the Valley and Parks Naturalization Program), which includes a 2 year warranty period.
- During these 2 years, the contractor conducts the maintenance of trees (see document "*Maintenance Excerpts from Tree Planting Contract*").
- City arborists conduct three inspections through the 2 year warranty period:
    1. When the tree is planted to confirm proper species was planted and is in good condition and properly planted.
    2. One year following the tree planting to insure the tree is growing and in good condition.
    3. Two years after the tree planting as a final inspection before the City assumes

(City of Brampton, Personal Communication August 12, 2021)

Invested Cost Value of Brampton's One Million Trees Program

- Are the taxpayers getting what they are paying for?
- Trees not watered have a higher mortality rate.
- Dead trees provide no value.

$50 Million

Performance benchmarking is key.

What metrics are being used to ensure that this growing asset is delivering the intended benefits?

Current methodology using "plant/die/ replace" every 2 years provides no guarantee of a timely successful tree canopy.

(Alexander & McDonald, 2014)

Cost/benefits impact of urban forest maintenance programs

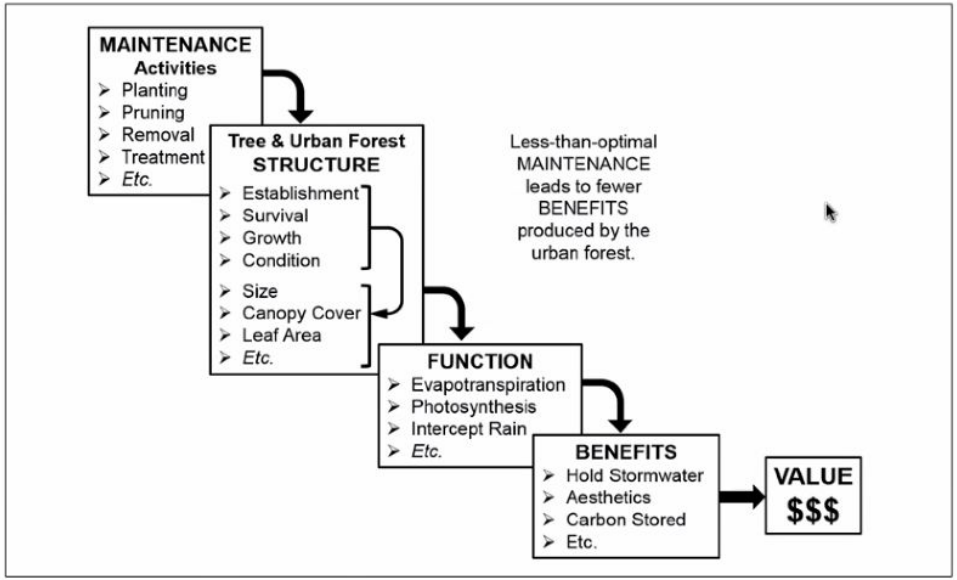
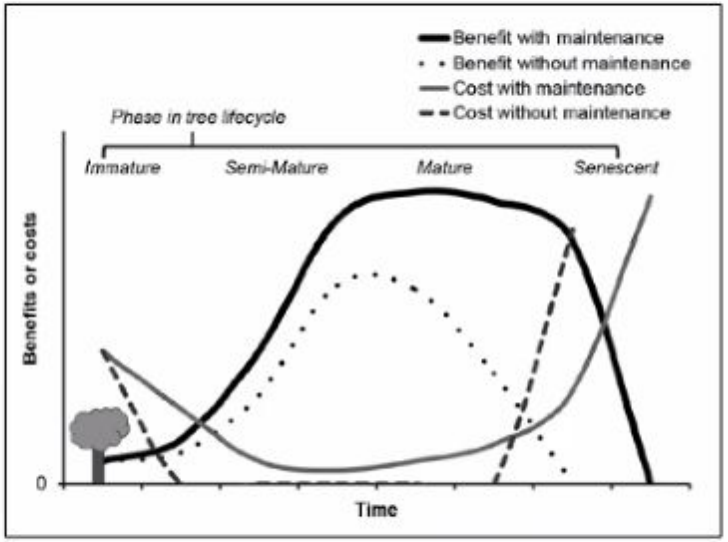


Figure 1. Maintenance directly impacts tree structure, which in turn impacts the functions and benefits provided by the urban forest.



(Vogt, Hauer, & Fischer, 2015)

Tree Care Matters...

Location: Dorchester Drive

Both planted same time: Approximately 2017

Date Picture Taken: Aug 13, 2021

- **Tree on left received no after care.**
- **Tree on right received annual mulching, fall composting and watering during drought.**

Mature Tree Pruning Maintenance

Honey Locust street tree pruning after ice storm damage, spring 2014.

D. Laing

Locations:

- Dorset Park
- Durham Park

Approximately 120 trees planted in 2014 in these parks.

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In the slide above to the right, the entire pathway was planted with trees. This is what remained prior to the recent planting on August 10-12th 2021.

Newly Planted Dead Trees

Location: Dorchester Park

Date planted: Winter 2019

7 Trees and shrubs planted, 6 Dead

Picture taken: August 2021

City plants only 15% of trees.

City Forest Department resourced to manage only city-planted trees at historical volumes.

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Example of dead trees planted more than 2 years ago

Location: Conservation Park

Memorial - Red Oak

Date planted: Fall 2015

Died ~ 2016

Replaced ~ 2019

Died Spring 2020

Not replaced

Tree Maintenance and Aftercare

Ivory Silk Lilac
Memorial Tree Planted in Dorchester Park June 2021
(Non-native species)

In 2009, Peel Region Urban Forest Strategy recommended:

- **Urban forest resource management plan**
- **Develop urban forest targets**
- **Implement monitoring & research programs**

In 2014 Brampton Environmental Master Plan recommended forest database and targets

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BEAC Recommendations

Short Term:

- TreeGator Bags and, truck to refill water for recently planted trees
- Pilot monitoring for recent plantings ie. tagging for tracking maintenance, survival and growth
- Enforce accountability for contractor obligations in aftercare and maintenance

Long Term

- Invest in adequate staffing and equipment resources to support the growth and establishment of a healthy urban forest
- Long term monitoring of after care practices and subsequent tree health, survival and actual growth rates
- Tracking of survival and growth metrics that show improvement to canopy and therefore ecosystem benefits

“ City tree planting initiatives aim to provide ecosystem services—the environmental, socioeconomic and human health benefits that have been attributed to urban forests (Nowak and Dwyer, 2007).

Many of the anticipated benefits materialize decades after planting, as trees reach mature size (Maco and McPherson, 2003), therefore it is critical to understand tree survival and growth in urban landscapes **(Roman et al. 2005, P 1174).”**

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