



SUBJECT: Tree planting initiatives

TO: Environment, Infrastructure & Community Services Cttee.

FROM: Roads, Parks and Forestry Department

Report Number: RPF-05-23

Wards Affected: All

File Numbers: 820-05

Date to Committee: June 1, 2023

Date to Council: June 13, 2023

Recommendation:

Direct the Director of Roads, Parks, and Forestry to amend Bylaw 55-2020 Tree Planting Initiatives Reserve Fund By-law in consultation with Legal Services and Finance to enhance the useability of the Tree Planting Reserves by including funding for tree establishment and enhancement initiatives; and

Authorize the Manager of Urban Forestry to develop a Community Tree Planting Grant Application and process for community supported tree planting and canopy enhancement initiatives.

PURPOSE:

This report provides an update on the Community supported tree planting initiatives funded by cash in lieu dollars received through the private tree bylaw administration. In addition, the report provides rationale for updating the existing tree Planting Initiatives Reserve Bylaw and details future opportunities related to community supported programming to support canopy establishment and enhancement.

Vision to Focus Alignment:

- Support sustainable infrastructure and a resilient environment
- Building more citizen engagement, community health and culture
- Deliver customer centric services with a focus on efficiency and technology transformation

Background and Discussion:

The City’s forestry section plants several thousand trees on an annual basis as part of a council-approved tree replacement program. This program can be organized into three discrete streams: non-emerald ash borer (EAB) replacements; EAB replacements; and Community supported planting initiatives. The latter will be the focus of this report; however, staff have included details regarding the other two planting streams for Council’s awareness and understanding that all three streams are administered by the same team. Both the non-EAB and EAB replacement tree programs are funded annually through the Operating budget, while the community supported tree planting initiatives are funded from cash in lieu revenue generated from the City’s Private Tree By-law, and from the Forestry operating budget.

Table 1: Tree Planting Programs at a Glance

Program Type	Annual Quantity (3 yr Avg)	Size	Location	Funding Source
Annual Tree Replacement Program (non-EAB)	1020	50 mm wire basket (12' height)	Streetside and manicured parks	Operating
EAB Replacement Program	750	50 mm wire basket (12' height)	Streetside and manicured parks	Operating
Community Supported planting Initiatives	2450	1 – 5 gal. pots (2-5' height)	Manicured parks; giveaways	Tree Planting Initiative Reserves and Operating

Program Successes to Date

Free Tree Giveaways

In 2022, the Cash in Lieu funding from the Private Tree Bylaw facilitated the distribution of 725 trees to residents. The goal of these initiatives is to grow the City of Burlington's tree canopy on private property and build awareness of urban forestry issues within the community.

In April 2022, 200 trees were given away as part of an Earth Day collaboration with Climate Resilient Burlington and Burlington Green. In September, an additional free tree giveaway event was held where 500 trees were given away to residents, and a raffle of 25 trees was held in collaboration with Burlington Green during National Forest Week.

In 2023, 500 trees were given away in April, and 500 trees are planned to be given away in September.

The spring and fall tree giveaways have been able to be administered in a cost-effective manner. For the spring giveaway, the total cost represented \$50 per tree. In contrast, the fall giveaway had substantially lower costs of approximately \$30 per tree, as more than double the number of trees were given away in the same amount of time, as a result of ongoing process improvements. (this includes all expenses associated with the event). It is important to note that approximately 72% of the combined total program cost is for the procurement of nursery stock. Specific information related to the spring and fall giveaways is noted in Figure 1 and 2 below. Procurement of trees is funded from the Tree Planting Initiatives Reserve. There are additional costs associated with administering these programs, including staff time, and equipment costs which are absorbed within the Forestry Operating budget rather than recovered from the tree planting initiatives reserve.

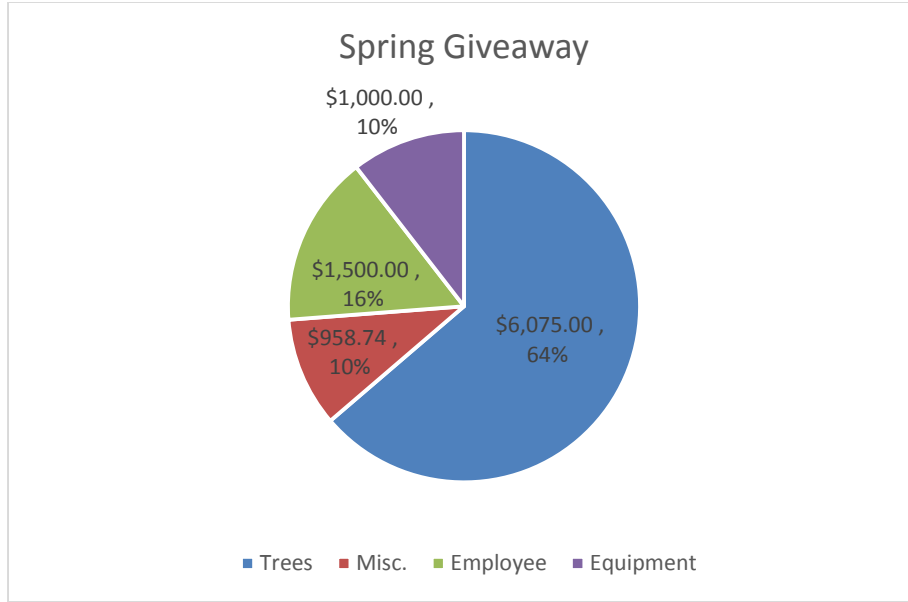


Figure 1: Average Tree Giveaway Cost Breakdown (Spring)



Figure 2: Average Tree Giveaway Cost Breakdown (Fall)

Spring Community Planting Event

As a continuation of Earth Day celebrations, Forestry staff, in collaboration with Burlington Green and 200 community volunteers, planted 500 trees at Millcroft Park. Forestry staff were responsible for site selection and preparation, and the procurement and delivery of all nursery stock. Burlington Green took the lead role of communicating and marketing the event, as well as registration of 200 volunteers. Costs associated with the Spring Community Planting Event are noted in Figure 3 below.

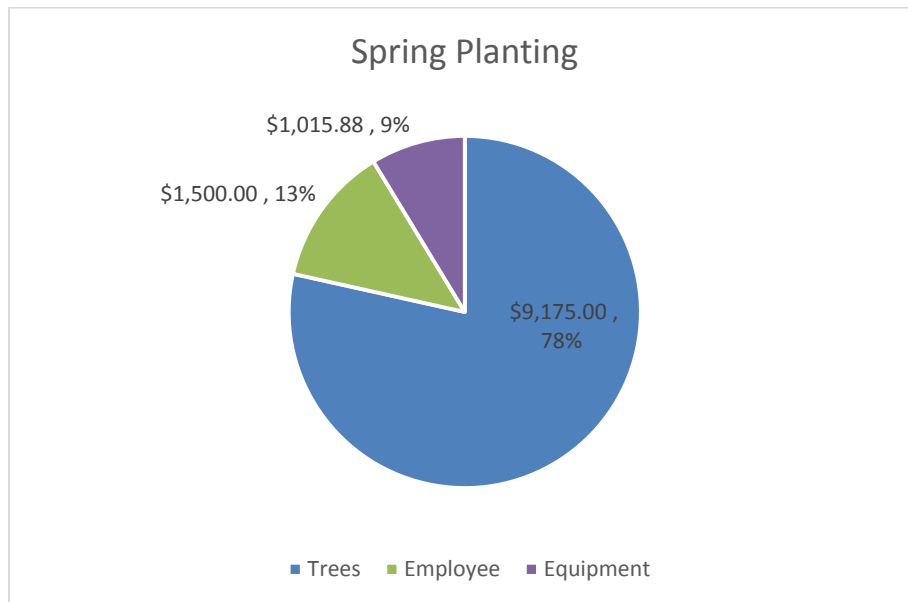


Figure 3: Spring Tree Planting Cost Breakdown

Research and Innovation

Greening the Landscape Research Consortium

Forestry has actively pursued research opportunities with a focus on reducing tree mortality rates immediately after planting, as well as maximizing survivorship for trees 5-years post-planting, which is considered established. The City has been actively involved in the Greening the Landscape Research Consortium which is an interdisciplinary group of industry professionals ranging from nursery growers, landscape contractors, conservation authorities, and other municipalities, led by the Vineland Research and Innovation Center (Vineland). This research focusses on developing solutions associated with the tree value chain from grower to end user, to ensure long-term survivability.

Colin Alton Parkette Soil Study

This project, in partnership with Vineland, is meant to evaluate how soil health influences tree performance. Currently, trees are planted in heavily compacted soils which are of low quality, making it difficult for trees to become established.

The Colin Alton Parkette project has allowed Forestry the opportunity to compare different quality levels of soil and their relationship to newly planted trees. Preliminary results have shown that soil quality is just as important as tree stock in new tree establishment, and that investment in improved soil will pay dividends in growing the City's tree canopy faster, while minimizing new tree problems and service requests related to young tree dieback.

Juniper Ave & Tremineer Ave Canopy Recovery Project

Both Juniper Ave and Tremineer Ave were heavily impacted by EAB infestation because these streets were monocultured with ash.

In an effort to replace the significant loss in tree canopy and to demonstrate the importance of biodiversity, through evidence-based practice, Forestry teamed up with Vineland to conduct an experiment on whether the addition of various soil inoculants (beneficial bacteria and fungi) support improved tree establishment in urban areas, as well as highlight the positive impact that regular watering and assessment of trees has in the years following planting, yielding significantly less incidences of young tree mortality. Due to current resource limitations, this level of attention and due diligence is not present throughout the rest of the City of Burlington's planting programs.

If successful in the Juniper Ave and Tremineer Ave neighbourhoods, Forestry staff intend to expand this program on a wider scale across the city, leading to bigger, healthier trees, less young tree mortality, and faster establishment after planting.

Current Program Limitations

- Both the free tree giveaways and community planting event programs are well received by the residents, and there is significant interest in increasing the scope of either of the programs with the help of our community partners. However, these programs require an extensive number of resources to perform well, and often operate successfully at the expense of other programs given current staffing resources. Other municipalities that run tree giveaway programs of this scope are successful because they are run by full time, dedicated staff.
- The concept of 'tree planting' should be reframed to 'tree establishment'. Through this reframe, proper attention to site and soil preparation, as well as after-care and maintenance are integral parts to ensure long term tree establishment. The existing wording within the Tree Planting Initiatives Reserve

is rigid in its utility, and there is an opportunity to improve long term program objectives by modifying the wording to address the pre- and post-planting activities.

- There is currently no method of tracking trees once they have been given away as part of the tree giveaway events. Although residents must register, there are no resources to follow up to ensure trees have survived the first year. This means there are minimal metrics to report on program success
- Maintenance after planting is critical for both public support and tree establishment. At this point due to resourcing issues there is *no* maintenance of newly planted trees after warranty. Trees planted within the City's right of way are presently absorbed within Forestry's grid maintenance program, which could mean new trees are not maintained for another 6-8 years after warranty. Trees planted as part of a community supported initiative do not have a formal maintenance program, which can lead to high levels of mortality.

Program Plans 2024 and beyond

- As part of the Designing and Evolving the Organization, a dedicated resource has been identified within Forestry as a Community Outreach and Engagement Coordinator. Their role will include all engagement as it relates to community supported tree planting programs, including but not limited to the planning of free tree giveaways, community planting events, and long-term, the review and approval of grant applications.
- Staff are investigating the feasibility of a backyard tree planting program with a third-party non-profit organization that will assist in the replacement tree program by installing trees and monitoring them overtime. This will allow us the ability to track the success of the plantings and to better manage the canopy over time, and ensure those trees are maintained and not removed. The establishment of a backyard tree planting program can also assist customers in planting new trees to ensure the right tree is planted in the right place; ensuring long-term success.
- There is great interest from the community to plant more trees on private property, including residential, commercial, and institutional lands. Forestry staff are investigating the feasibility of a grant application program whereby community groups can apply for financial and technical support ranging in size and scope that is suited to their unique and specific interests and skill sets.
- Continue to build on key relations with larger-sized community partners (e.g. Conservation Halton, Burlington Green, Tree Canada) through the development of formalized agreements.
- Develop a tree establishment program for streetside planting, and community planting events to demonstrate to the public Forestry's commitment to tree

establishment. Leverage Tree Equity Scores and other insights from the Urban Forest Master Plan (UFMP) to strategically pursue planting opportunities in areas with low canopy scores

- Pursue relationship building with other Non-Government Organizations (NGO's) such as the Tree Trust, which helps to maintain large urban trees on private land – an avenue which solves several complex problems for canopy maintenance on private property. Future use of the reserve funds may include fixed maintenance subsidies to offset costs of pruning, cabling, fertilizing, and other practices related to tree maintenance.

Strategy/process/risk

The research that Forestry staff have participated in, as well as a growing body of industry research, supports the need for greater resource inputs in the pre- and post-planting activities to support long term tree survivorship. In addition, there is a demonstrated interest from the Burlington community to actively participate and contribute to growing the City's urban forest.

Proposed Tree Planting Initiative Reserve Bylaw Amendments:

The tree planting initiatives reserve bylaw is regulated by bylaw 55-2020. The current wording within the bylaw restricts the use of the funds to *“tree planting and/or replacement on city and privately owned properties”*. In addition, there is no direct route for staff to access these funds outside of the normal budget process. Through the review and revision of the bylaw, it is recommended the wording is revised to encompass a greater range of tree establishment and enhancement activities, such as pre- and post-planting activities in the interest of improving long-term tree survivorship as well as fixed cost maintenance subsidies to support significant tree retention. Finally, the revised wording within the bylaw will provide the Director of Finance and the Executive Director of EICS, or their designate, the ability to in year commitments against the reserve fund. Consultation with both Finance and Legal is required as part of this process.

Risk

Since the launch of community supported tree planting initiatives, there have been significant improvements made in community engagement, general awareness of urban forestry issues, as well as positive contributions to canopy growth on both public and private property. At this point, the Forestry section is over capacity with respect to the ongoing administration of these programs, which presents a number of risks:

- 1) Without adequate access to funds, newly planted trees from community planting events are not sufficiently maintained, which leads to increased likelihood of tree mortality due to lack of water and other care.

- 2) Additional growth potential for future community partnerships across the City is limited due to lack of staffing resources.
- 3) Increasing workload of staff creates the potential for burnout and if left unremedied will lead to retention issues of technical staff.

Options Considered

Third Party Giveaways and Planting Programs

Through collaboration with local environmental NGOs, Forestry staff could outsource all or a portion of tree giveaways and community supported tree planting programs. This is not recommended by staff as there would be little to no oversight to manage critical urban forestry metrics such as biodiversity, location, quality and survivorship. Further, tree planting events would still require staff coordination of site selection and application pre-planting preparation. Costs for this program framework are unknown at this time.

Financial Matters:

The Tree Planting Initiatives Reserve is funded primarily from cash in lieu dollars received through both the Public and Private Tree By-laws. At present, the account has a total \$689,603. In 2022, \$69,870 was transferred from the reserve to cover costs of tree giveaways, community planting events, third party planting on City lands, and research projects.

Table 2: Summary of Reserve Fund Allocation

Activity	Recovery from Reserve
Spring Giveaway	\$6,075
Spring Community Planting Event (Millcroft Park)	\$9,175
Fall Giveaway	\$12,110
Third Party Planting (Conservation Halton / Tree Canada)	\$15,850
Maintenance (Tree Loving Care event with Burlington Green)	\$3,050
Colin Alton Parkette	\$16,180
Juniper Ave / Tremineer Ave	\$7,430
Total:	\$69,870

Total Financial Impact

Average Tree giveaways cost approximately \$15,000 for 500 trees (\$30 per tree). On average, 72% of the total program costs are recovered through the Tree Planting Initiatives Reserve with the remaining funded by the Forestry Operating budget.

Average tree planting events cost approximately \$10,000 to \$15,000 per event (Approximately \$25 per tree in 2 gallon pots). This includes the supply and delivery of tree stock, site preparation, and applicable human resources and equipment costs. Approximately 50% of the costs are recovered through the Tree Planting Initiatives Reserve with the remaining funded by the Forestry Operating Budget.

All human resource costs and equipment allocation costs are absorbed within the existing Forest Health operating budget.

There is currently no established level of service or budget allocation for maintenance of any newly planted trees for both community supported and city administered programs (streetside replacements).

Source of Funding

The Tree Planting Initiatives Reserve Fund Bylaw is the primary source of funding for community supported planting initiatives. The current fund balance is \$689,603.

Other Resource Impacts

Due to the current reserve fund bylaw, the Tree planting initiatives reserve account only covers the cost for site preparation and procurement of trees for the events. Costs for internal staffing, program administration and other operational needs to support these events are all borne through the Forest Health operating budget.

Climate Implications

The climate implications surrounding canopy growth are extensive. The majority of land within the City of Burlington is privately owned and having the opportunity to have trees planted on private land allows us an even greater opportunity to grow the canopy of the city overall.

Our planting events also help to improve the resilience of our cities in the face of significant wet weather events. As well, our woodlots and parks play a critical role in reducing the impact of stormwater runoff through infiltration and retention.

Residents have also recognized the ability of trees to sequester carbon.

Engagement Matters:

Forestry has been working with community partners to facilitate planting events and collaborate on volunteer resourcing as noted below and in Figure 3:

- Burlington Green has been a regular partner for the City’s Earth Day planting events in 2022 and 2023. Earth day 2022 was the first planting event since 2019 due to the pandemic.
- Conservation Halton has been a regular partner for canopy growth and has facilitated the relationship between Burlington Forestry and Tree Canada. Conservation Halton helped plant 1,000 trees with the city of Burlington in 2022 and have organized planting events for 2000 trees in 2023.
- Field and Stream Rescue Team has taken part in creek cleanups across Burlington and are working with other departments in the City. In 2022, they planted over 750 trees in creeks. They are uniquely suited for stream cleanup, and replanting.

Table 3: 2022 Community Supported Planting Events

Date	Number of Trees	Location	Partner
April	500	Millcroft Park	Burlington Green
September	100	Thorpe Park	Ikea and Tree Canada
October	1000	Millcroft Park	Conservation Halton, Boehringer Ingelheim, and Tree Canada
November	125	Lowville Park	Ontario Federation of Anglers and Hunters
Total	1725		

Conclusion:

Community supported tree planting programs are integral to the growth and long-term success of the Urban Forest. These programs foster a sense of ownership, raise awareness to Urban Forestry issues that face the City, as well as contribute to net canopy growth on both public and private land.

By modifying the use of the Tree Planting Initiatives Reserve Bylaw to encompass Tree Establishment and Enhancement, Forestry staff will be better able to address challenges associated with tree planting to improve the health and survival of newly planted trees, and more effectively engage with members of the public to grow the Urban Forest.

Respectfully submitted,

Steve Robinson

Manager, Urban Forestry / City Arborist

(905) 335-7777 x. 6167

Kyle McLoughlin

Supervisor, Forest Planning & Health

(905) 335-7777 x. 6145

Appendices:

A. Bylaw 55-2020 Tree Planting Initiative Reserve Fund (Reference)

Report Approval:

All reports are reviewed and/or approved by Department Director, the Chief Financial Officer and the Executive Director of Legal Services & Corporation Counsel.