

DRAFT: White Paper: ReForest Woolwich

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Executive Summary:

ReForest Woolwich is an initiative put forward by a group of concerned and driven residents and green industry professionals to realistically and methodically increase the tree canopy cover in all urban areas in the township of Woolwich from roughly 16.3 percent to 32 percent by 2070. This will mean a concentrated effort to plant extensively and quickly in the next 15 years to allow for tree maturity by 2070. This will be done by bringing together corporate, municipal, non-profit and citizen volunteer efforts in the same way that was spearheaded by the Roadside Tree Planting Project.

The project will see the establishment of a not-for-profit charity and governing board to manage and execute the program and administer funds. ReForest Woolwich already has firm commitments for \$1,250,000 of the estimated \$5M project costs, and another probable \$750,000 matching funds from the federal government.

The program will include three key components:

- Establishing a non-profit trust and board
- Each neighbourhood will have a dedicated Forest Caretaker who will be provided a stipend in order to support landowners, businesses and volunteers to properly plant and maintain trees.
- Establishing an incentive program to target landowners or managers of all land classes (residential, commercial and public) to plant trees.

The ReForest Woolwich project will build on the success of previous and ongoing restoration and ReForestation efforts in the township such as the Roadside Tree Planting Project and the Elmira Nature Reserve and will build on the cooperation and innovation pathways spearheaded by these projects to provide demonstrable and tangible results.

What is the problem?

Impervious surfaces -- like roads, sidewalks and buildings in urban spaces -- absorb heat during the day and release it slowly at night. Trees absorb heat, and release moisture in the air, creating a cooling effect, as well as blocking the sun and providing shade so that those concrete spaces absorb less sun.

Generally, urban forestry experts and best practices in the industry as well as Environment Canada, [suggest](#) a target of at least 30 percent tree canopy cover in urban settings.

According to a [study](#) conducted for the Township of Woolwich Environmental Enhancement Committee in 2018, from Natural Resource Solutions Inc., the town of Elmira has about 16.3 percent tree cover on average. For the purpose of this proposal, we extrapolate that assessment to assume an approximate 16.3 percent tree cover for all the urban areas in the township.

This is a low percentage tree cover, and a problem. Additionally, the presence of pests and diseases such as emerald ash borer or Dutch elm disease, means a significant portion of the existing tree cover is either declining or under threat and needs to be replaced.

A low percentage of urban tree cover means a warmer urban area, decreased biodiversity, increased water runoff -- wasted water running over impervious surfaces and into sewer systems or streams and increasing soil erosion rather than soaking into the ground and replenishing the groundwater supply.

Trees act as carbon sinks, taking CO₂ out of the atmosphere, manage water during high flow conditions and rain events, provide habitat and nourishment for biodiversity including pollinators, and support citizen well being and mental health.

Overall, tree cover increases the quality of life and climate resilience of a community, and the difference made by establishing tree cover is especially important in tree-poor urban areas.

What is the solution?

The goal of the ReForest Woolwich project is to increase the township's urban canopy cover from 16.3 to 32 percent by 2070. This will mean building on the work pioneered by Trees for Woolwich, which has been working on increasing canopy cover since 2011.

ReForest Woolwich will plan to plant extensively and quickly in the next 15 years so that trees have time to mature and fill in the canopy.

Through this project, Woolwich Township will meet and exceed its current commitment to increase the urban tree canopy. In 2018, council endorsed the Elmira Green Infrastructure

[Report](#), which included a 20-year plan to increase the canopy cover in Elmira. The ReForest Woolwich project will address council's commitments.

As well, this project provides a pathway to concrete action to address the climate emergency council declared in 2019 - which stated that emergency mobilization on an unprecedented scale is required. The project can also be synchronized with the Woolwich Climate Action Implementation Plan that township staff are drafting to reduce the township's GHG emissions.

We believe the time is now for bold and aggressive action building on the excellent tree planting foundations already in place in Woolwich Township to position us for the coming [changes](#) to our climate and home. Planting trees is one of the most straightforward ways to tackle the dual issues of climate change and biodiversity loss, and has one of the highest returns on investment in terms of green infrastructure and environmental services provided for monetary outlay.

The ReForest Woolwich Project will build on the success of the Roadside Tree Planting Project and Elmira Nature Reserve projects, which developed repeatable ways to plant many trees at relatively low cost. We have the methodology; now let's scale it up.

The ReForest Woolwich Project - What is it?

This is an initiative put forward by a group of concerned and driven community members and green industry professionals to realistically and methodically increase the tree canopy cover in all urban areas in the township of Woolwich from roughly 16.3 percent to 32 percent by 2070, meaning trees are planted extensively and quickly in the next 15 years. This will be done by bringing together corporate, municipal, non-profit and citizen volunteer efforts in the same way that was spearheaded by the Roadside Tree Planting and Elmira Nature Reserve projects.

ReForest Woolwich will build on the success of previous and ongoing restoration and ReForestation efforts in the township such as the Roadside Tree Planting Project and the Elmira Nature Reserve, and will build on the cooperation and innovation pathways spearheaded by these projects to provide demonstrable and tangible results.

Project Breakdown:

The goal of the project is to increase the tree canopy from 16.3 percent to 32 percent by 2070. In real numbers, we estimate this means planting between 150,000 and 250,000 trees in the urban and peri-urban areas of the township over the next 15 years, which will allow the trees time to mature and fill in the canopy. We have chosen 225,000 trees as the most likely number required.

Annually, we estimate planting approximately 15,000 trees. Currently, the Roadside Tree Planting Program is on track to plant 8,000 to 9,000 trees per year, so this is an approachable objective within reach.

Another possible metric to use for success is the [3-30-300](#) guideline as introduced by the Nature Based Solutions Institute. This rule provides a reference for urban greening initiatives: everyone should be able to see at least three trees from their home, live in a neighbourhood with at least 30 per cent tree canopy (or vegetation cover) and be no more than 300 meters from the nearest green space that allows for multiple recreational activities.

Establishing a Not-for-profit Charity and Board

We propose the creation of a new non-profit organization, named ReForest Woolwich. This consists of a board which is responsible for overseeing a charitable trust, ensuring the timely and efficient execution of the project and will also take on responsibility for the Elmira Nature Reserve and the Roadside Tree Project. The charity structure will encourage private sector contributions, and the board will provide oversight and accountability.

We propose a board make up of:

- 1 to 3 - board members with science, forestry or green industry background
- 1 to 2 - professional member, lawyer and/or accountant
- 1 to 3 - community members
- 1- Woolwich Councillor
- 1- Liaison with Woolwich Parks (non-voting)

ReForest Woolwich will operate as a charity with a board similar to [ReForest London](#). The board will have five to eight members and represent the community and green industry.

The board will be responsible for the oversight and governance of the program as well as administration of funds.

The organization mandate will be narrow: to increase Woolwich Township's tree canopy to 32 percent by 2070 and to care for the trees planted.

Who is going to plant and how?

Planting and tree maintenance will be carried out by landowners, contract tree planting firms and volunteers. All planting will be voluntary (at landowners's request) and encouraged through incentive programs.

A large part of the plantings will occur on residential and industrial lands. Plantings in these land classes will be led by a volunteer neighbourhood Forest Caretaker. This will be under the oversight of ReForest Woolwich, which will provide training and oversight.

Each neighbourhood will have a volunteer Forest Caretaker who will be responsible for delivering trees to landowners, as well as assistance and training to landowners to plant trees on each land class including residential, industrial and public land.

This role will also be responsible to check up on trees in their designated coverage area, and provide positive encouragement and assistance to landowners for proper tree maintenance and care. This role will receive a stipend and typically run for ten year terms.

Trees for Woolwich already has a similar program in place with people volunteering as caretakers of trees in their local parks. The ReForest Woolwich program will expand these volunteers' mandate, increase recruiting efforts and give them support, and will work alongside Trees for Woolwich to achieve our joint goals.

Incentive Program

An incentive program will be created in order to encourage landowners to plant trees on all land classes: residential, industrial and public land- with an emphasis on residential and industrial. Establishing this program will be one of the first tasks the board will tackle.

This program could also include corporate sponsorship, where local corporations purchase trees to give away to their employees who live in Woolwich. The give away would be coordinated by Reforest Woolwich.

Where will we get the trees?

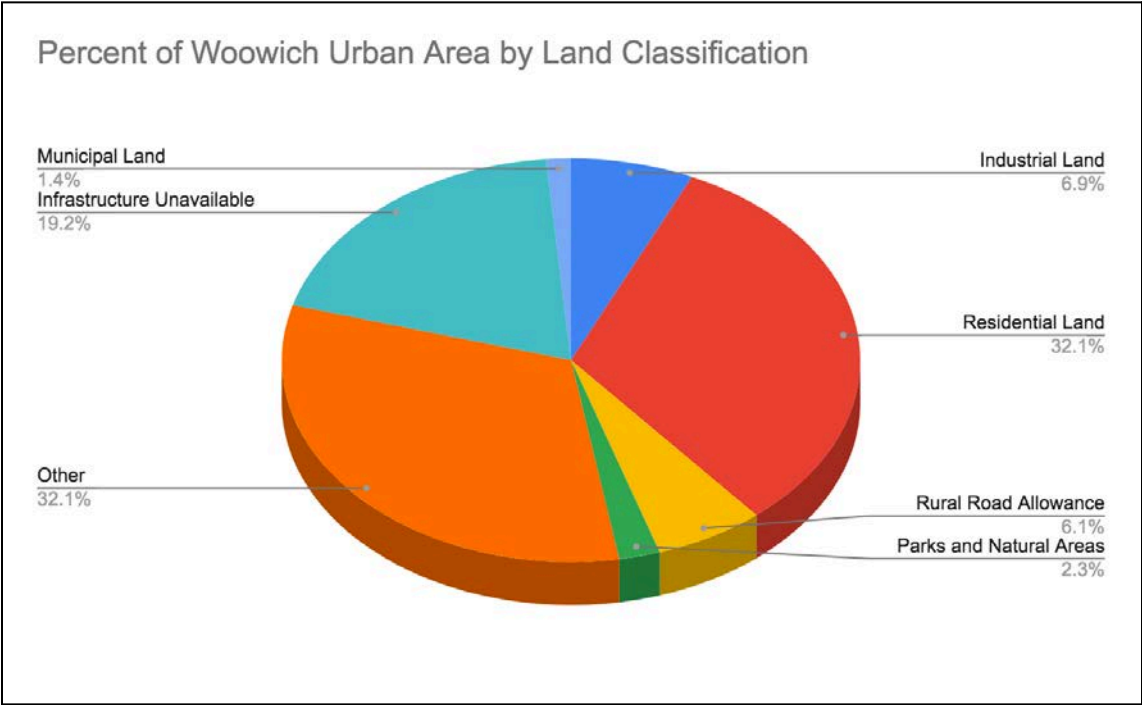
Trees will be supplied by commercial nurseries such as Verbinnens, Winklemolen's and the GRCA. Trees will also be supplied by the Trees for Woolwich and Reep Green Solutions tree nursery, according to their capacity.

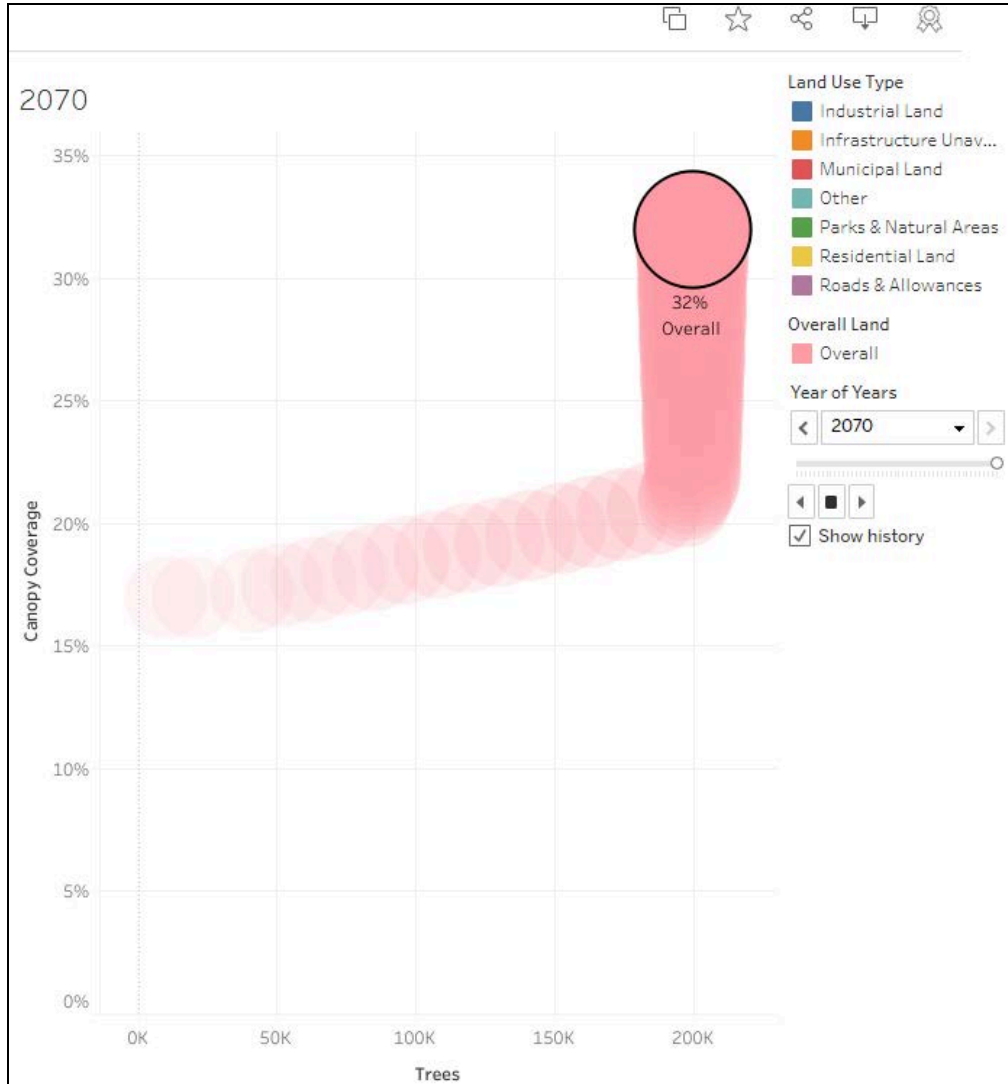
Where will these trees go?

ReForest Woolwich targets all urban and peri-urban (mixed urban and rural characteristic land) in Woolwich. For instance: rural roadsides, rural residential properties on agricultural lands, rail trails, rural cemeteries and churchyards, golf courses, settlements such as Crowsfoot Corner, Our target is land not currently covered by rural tree planting organizations such as GRCA.

The below pie chart illustrates seven main categories of land and how it is currently divided in the township. From this chart, it's clear the land classifications with the most capacity of trees is residential. This is followed by industrial land, rural roads allowances and parks and natural areas. Of note, there is already a tree planting program underway in the rural road allowances in

the township, with the aim to plant approximately 22,000 trees along every major road in the township by 2026.





This is a screenshot of an animated graphic which displays the current tree cover by land class in the township, and what it could be by 2070 if trees are planted within the next 15 years. Here is the [link](#) to the animated data graphic.

To begin the tree planting process, we estimate there is space for approximately 45,000 plantings considered 'low-hanging fruit' or attainable plantings across the township within various land classifications - locations for trees that are accessible and fairly easily attainable.

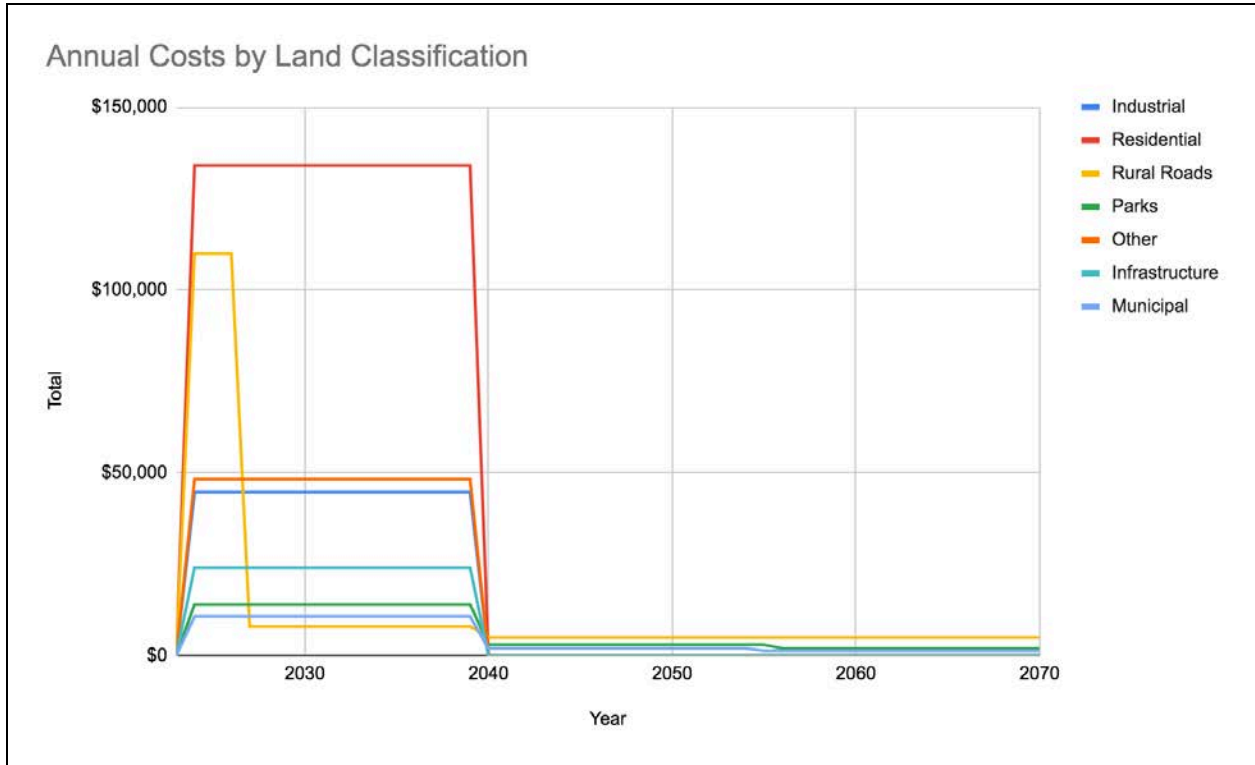
The chart below outlines the locations for these 45,000 trees.

Urban and Peri-Urban Tree Planting Locations	Quantity
Elmira Nature Reserve	3,000
Roadside Trees	22,502
Rail Trail	9,000
Park Naturalizations	2,400
School Yard Naturalizations	1,500
Peri-Urban Residential	3,750
Elmira Wildlife Sanctuary	3,000
Total	45,152

The remainder of tree planting spaces will rely more heavily on incentive programs to implement. Preparing these programs will be among the first tasks of the ReForest Woolwich board.

How much will the project cost?

The funding needed for this project is estimated to be 4.8 million dollars total, or \$320,000 per year. Our estimate is based on an average tree cost for each land classification, and the number of trees estimated for each land class. Tree costs range from most costly (\$70/tree for parkland and industrial land) to least costly (\$9/tree for naturalisation infilling).



Where will we get funding?

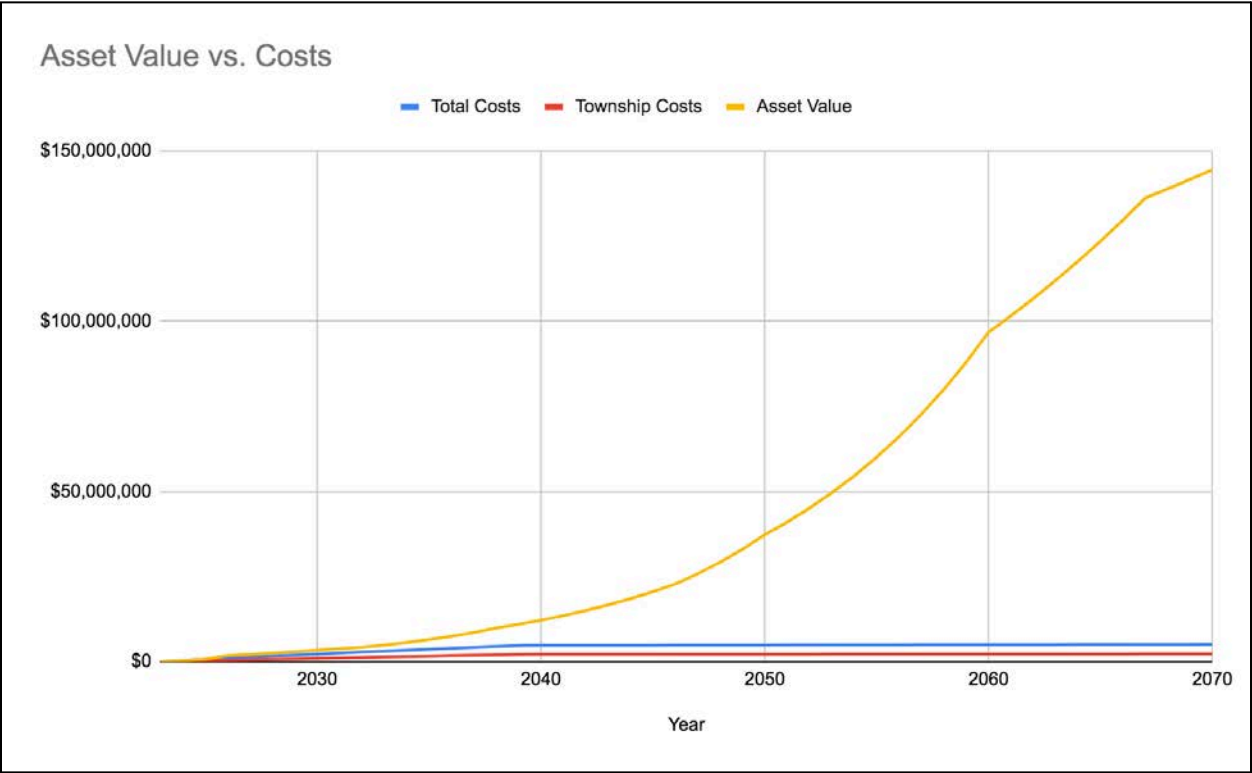
We currently have \$1,250,000 of funding committed from a private donation (Earthscape Catalyst). This funding is planned to be front-loaded for the first 10 years. From here, more funding will need to be found. Other sources of funding could include larger private business donations. Donation managers will be attracted to the large scale of this project and the portfolio of success and invested community members behind it.

We believe that the federal Two Billion Trees program may provide matching funding, or at minimum 75% funding. The authors believe that generating additional funding beyond this initial amount is both feasible and likely because of the tangible goals, project visibility, and the generational impact of the project.

Starting the project will not require Township funding. We believe that the Township should consider funding trees that will be planted on Township land, such as parks and township facilities.

We are recommending that the township will in future set aside a reserve for maintenance of trees on their land. Trees planted on private owner's land will not require a reserve. A budget for Forest Caretaker stipend, and the salaries for the ReForest Woolwich staff are currently included in the per tree costs for each class. Upon startup, a more-detailed budget will be developed to break out staff time and overhead costs. We anticipate hiring 1.3 full time staff.

Using a conservative calculation for tree asset values, the ReForest Woolwich tree canopy will be worth approximately \$150,000,000 by 2070, with an investment of less than \$5,000,000.



Final Thoughts

The ReForest Woolwich Project is important because it will help fulfill Woolwich council’s current tree planting commitments, and make significant headway to restore the township’s landscape and biodiversity while increasing resilience to coming climate-related changes. As well, increased tree coverage is proven to increase quality of life for citizens.

Woolwich Township has already embraced significant and successful tree planting projects which are gaining attention, such as the Roadside Tree Planting and Elmira Nature Reserve programs, and ReForest Woolwich will continue the municipality’s bold leadership.

The ReForest Woolwich project is the next logical step following the established success of the Elmira Nature Reserve and the Roadside Tree Planting Program. The program will use tested efficient tree planting methods and build upon established community, municipal and industry partnerships while creating new ones.

Tree planting is now a recognized priority of governments at all levels, and is backed by significant funding, such as the federal Two Billion Trees Program. Now is the time, not only to

take advantage of this watershed moment, but also to take a leadership role and protect and replenish our township's biodiversity and climate resilience for ourselves and those who follow.