



Staff Report

Operations

Report To: COW-Operations, Planning and Development Services
Meeting Date: June 27, 2023
Report Number: CSOPS.23.034
Title: Town Tree Inventory Project
Prepared by: Shawn Carey, Director of Operations

A. Recommendations

THAT Council receive Staff Report CSOPS.23.034, entitled "Town Tree Inventory Project" for their information.

B. Overview

The Town has recently partnered with the University of Toronto's Faculty of Forestry to develop an inventory and condition assessment of trees located on Town property, within the urban settlement area, with the ultimate goal of drafting a Tree Preservation and Replacement Policy and Program. Town staff, along with community partners, are seeking to align this work with natural asset management.

C. Background

The Blue Mountains Future Story (Community Sustainability Plan) includes two Bold Actions that aim to understand the Town's natural assets and improve local biodiversity over time:

Bold Action 5: *Develop an action plan to create a neutral asset inventory to include climate vulnerabilities and inform asset management planning;*

Bold Action 6: *Develop a Biodiversity Strategy.*

Full text and greater detail on these Bold Actions can be viewed at www.TBMFutureStory.ca.

The Town does not currently have a program to preserve, manage and replace Town-owned trees within our urban setting. Staff are looking to develop a Tree Preservation and Replacement Program to meet this need, which will outline an approach to tree replacement based on climate change trends, stressors in the urban environment and integration with the Town's tree nursery. The first step in this process is to conduct an inventory of Town-owned trees including a tree health assessment methodology. The process of building this inventory began in May 2023 with the hiring of an Urban Forest Researcher into an existing summer student position. Options on how best to fund a Tree Preservation and Replacement Program

utilizing current trends on natural asset management will be needed, and staff will explore how the Town's tree inventory factors into the development of a Biodiversity Strategy.

[Staff Report FAF.23.060](#) introduced the concept of natural asset management including a roadmap that identifies near-term actions.

D. Analysis

Town staff recognize the need to be more proactive in the management of our Town-owned trees. To assist with this, staff have partnered with the University of Toronto's Faculty of Forestry and have secured a master's student to undertake this work. The Urban Forest Researcher will be undertaking the following tasks as part of their master's Thesis project:

- Work with a team of Town staff to develop an inventory of trees located on Town-owned lands (initially focused on street trees) within the urban settlement area including facilities such as administrative buildings and facilities, road right-of-ways, and Town-owned parks and trails;
- Develop a Tree Preservation & Replacement Program:
 - Conduct a tree inventory of Town-owned lands
 - Develop a replicable methodology for individual tree health assessments
 - Apply tree assessments to inventory
 - Assess climate change trends in relation to tree replacement needs
 - Integrate the Town's Tree Nursery with asset replacement needs;
- Using a jurisdictional scan, develop options based on how other municipalities are implementing policies and programs to address municipal tree preservation and replacement;
- Work with established community partners on a long-term monitoring and assessment program;
- Conduct research to assist the Town in developing a Biodiversity Strategy for Town-owned lands; and,
- Collaborate with Town staff to incorporate the Town's tree inventory alongside an inventory of broader community natural assets into the Town's asset management plans over time, as detailed in [Staff Report FAF.23.060](#).

Tree Inventory Assessment Methodology

The inventory and health assessment of Town-owned trees will follow the "NeighbourWoods" program design utilized by other municipalities. This method should also allow for resident volunteers to assist the Town in identifying street and park trees, assessing their size, health and condition, and submitting this information to the Town for integration into a Geographic Information System (GIS) dataset. Data input will be facilitated by a mobile app created by GIS staff. The Town tree inventory and health assessment will be integrated into the natural assets inventory as a distinct GIS layer and also imported into the Town's asset management software.

Some preliminary inventory work has been undertaken in the Swiss Meadows area to assess the methodology and evaluate outcomes. Attachment 1 provides a high-level overview of some of the values for tree canopy cover and monetary values of ecological services for Swiss

Meadows. Staff are using various software tools to classify land and tree cover across a given area using both aerial imagery and detailed inventory. The assessment in Attachment 1 is for the entire area being both public and private land and shows an estimation of the value urban trees offer to the Municipality and the local community.

Community Partners

In development of this work, Town staff worked with various community partners, including but not limited to:

1) The Blue Mountains Tree Trust

Town staff worked closely with the Elora Environment Centre's Tree Trust chapter who have worked previously with the University of Toronto to develop and implement the NeighbourWoods Program in their area. This program is a community-based tree inventory, monitoring and stewardship planning program designed to help community groups and volunteers conduct an inventory of their urban forest and use that information to inform stewardship programs. Tree Trust Elora was very helpful in assisting staff with volunteer training programs, equipment needs, and data management.

Town staff are working with The Blue Mountains Tree Trust to gather community volunteers to assist with undertaking the tree inventory and assessment work.

2) Grey Sauble Conservation Authority

In order to complete our inventory work, town staff will need the assistance of community volunteers. Grey Sauble Conservation Authority has kindly lent tree assessment equipment to support multiple crews at one time.

Next Steps

In the coming weeks, Town staff will be working with our community partners and scheduling volunteer crews to assist with conducting the tree inventory work to be completed by end of August 2023. The Town's communications team has created a dedicated project page which can be found at www.thebluemountains.ca/tree-inventory. Interested residents or members of the public are encouraged to visit this page and subscribe to the project email list to receive updates on the projects and more information about they can get involved. Communications staff will also be promoting the project and raising awareness through the Town's social media channels on Facebook, Twitter and YouTube.

Following completion of the Town's tree inventory work, the Urban Forest Researcher will begin to develop a Tree Preservation and Replacement Program as part of their master's work. Staff expect this work will be completed in the fall/winter of 2023/2024.

E. Strategic Priorities

1. Communication and Engagement

We will enhance communications and engagement between Town Staff, Town residents and stakeholders

2. Organizational Excellence

We will continually seek out ways to improve the internal organization of Town Staff and the management of Town assets.

3. Community

We will protect and enhance the community feel and the character of the Town, while ensuring the responsible use of resources and restoration of nature.

4. Quality of Life

We will foster a high quality of life for full-time and part-time residents of all ages and stages, while welcoming visitors.

F. Environmental Impacts

The preservation and conservation of trees contributes to a variety of environmental benefits including carbon sequestration, biodiversity, wildlife habitat, climate change adaptation, and more. The Town's current approach to managing our trees does not include any proactive measures to ensure the community sees the full life-cycle benefit. By managing our Town owned trees as assets, similar to other hard infrastructure (e.g. watermains, roads, facilities), the community can realize the full benefit that an individual tree can provide.

G. Financial Impacts

Town staff are utilizing an existing summer student position, approved through the 2023 operating budget, to support the Urban Forest Researcher position. The Town is also benefiting from the expertise of the University's Faculty of Forestry who are actively involved in numerous urban forestry initiatives.

H. In Consultation With

Jim McCannell, Manager of Roads and Drainage

Ryan Gibbons, Director of Community Services

Jeffery Fletcher, Manager of Sustainability and Solid Waste

Nicholas Cloet, Sustainability Coordinator

Vicky Bouwman, Asset Management Specialist

Braedon Witt, Urban Forest Researcher

I. Public Engagement

The topic of this Staff Report has not been the subject of a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. However, any comments regarding this report should be submitted to Shawn Carey, Director of Operations directorops@thebluemountains.ca.

J. Attached

1. Attachment 1 – Swiss Meadows Case Study

Respectfully submitted,

Shawn Carey
Director of Operations

For more information, please contact:
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Report Approval Details

Document Title:	CSOPS.23.034 Town Tree Inventory Project.docx
Attachments:	- Attachment 1 Swiss Meadows Case Study.pdf
Final Approval Date:	Jun 14, 2023

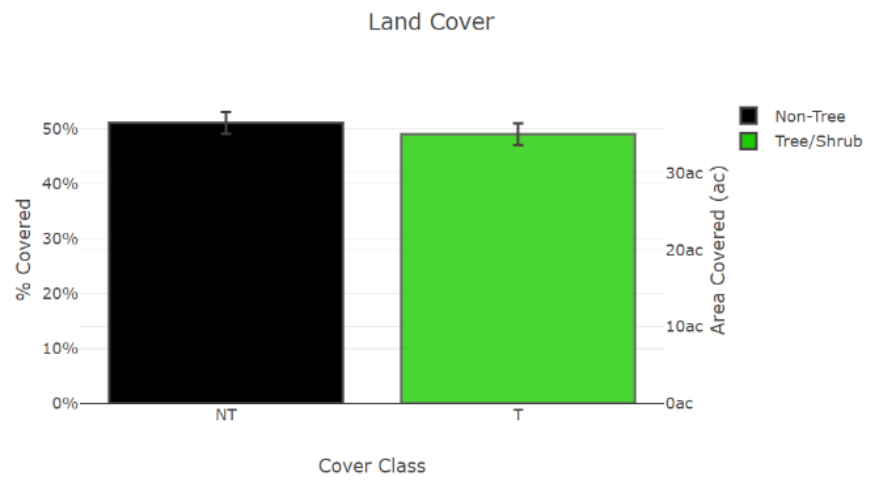
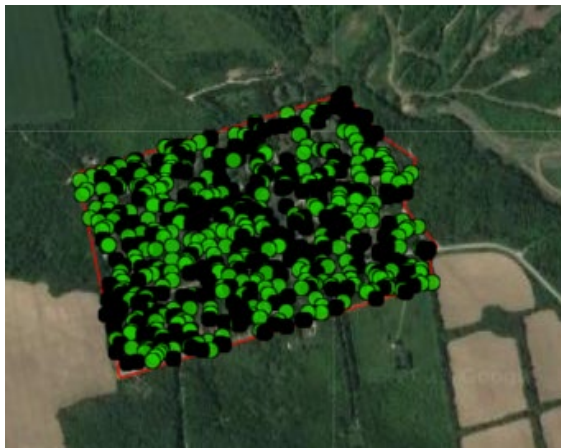
This report and all of its attachments were approved and signed as outlined below:

Shawn Carey - Jun 14, 2023 - 11:59 AM

TBM Tree Inventory

Case Study - Swiss Meadows

The following results were estimated using i-Tree Canopy using random sampling of land cover comparing Tree/Shrub and Non-Tree land cover types to assess canopy cover and the associated monetary values.



Results

- Random sample assessment of canopy approximately 48% with a standard error of 2.00 for a 28.96 ha area (Swiss Meadows)

Benefits:

- Almost 1089.66 tones of CO₂ are currently being stored within trees.
 - Total value of \$273,539 CAD
- 31 additional tones are sequestered annually.
 - Total value of \$7,831 CAD
- Approximately 1200 kg of air pollution removed annually including Carbon Monoxide, Nitrogen Dioxide, Ozone, Sulfur Dioxide, particulate (PM_{2.5} and PM₁₀).
 - Total value of \$140 CAD
- Approximately 95.80 kl of avoided runoff annually
 - Total value \$302 CAD



Develop the means to manage trees throughout their lifecycle (logistics of operations).

- Site placement, rooting environment considerations, soil amendments, pruning, pest and pathogen treatments.