Urban Forest Master Plan

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Prepared by:	Bailey Chabot Planning Services
Recommended by:	General Manager of Growth and Infrastructure

Report Summary

This report and presentation provides a recommendation regarding the City's Urban Forest Master Plan.

Resolution

THAT the City of Greater Sudbury directs staff to present the Urban Forest Master Plan to City Council in Q1 2025 for their approval as outlined in the report entitled "Urban Forest Master Plan", from the General Manager, Growth and Infrastructure, presented at the Operations Committee meeting on December 16, 2024.

Relationship to the Strategic Plan, Health Impact Assessment and Climate Action Plans

The Urban Forest Master Plan supports the Strategic Plan, specifically as it relates to priorities 1.1 and 1.5, as it is the proper management of an asset that, with proper management will reduce maintenance on municipal infrastructure. Priorities 3.1 and 3.2 are supported as the urban forest supports ecological sustainability and mitigates the impact of climate change. The Urban Forest Master Plan also supports carbon sequestration goals of the CEEP through the management of the urban forest.

Financial Implications

There are no financial implications associated with this report. Should recommendations of the Urban Forests Master Plan result in service level changes, business cases will be brought to future budget processes for Council consideration.

Staff Report

Benefits of Urban Forest

Urban forests provide several benefits, including:

- Air Quality & Temperature Mitigation

  Trees sequester several harmful gases (ozone, nitrogen dioxide, etc.) and trap various air-borne particles while also measurably reducing summer temperatures in the ambient environment and acting as windbreaks in the winter (reducing heating costs).

- Traffic Calming

  Trees cause roads to appear narrower, calming traffic and demonstrably increasing road safety.

- Property Values

  Trees offer improved aesthetic and have been shown to increase property values in residential neighbourhoods.

- Carbon Storage

  Trees sequester carbon through photosynthesis, which helps reduce greenhouse gas emissions that influence climate change.

- Stormwater Runoff

  Trees help capture and slow the release rainwater into the surrounding soil, reducing erosion impacts in local ditches and streams. Trees also draw water from the soil and release it through their leaves, further reducing rainwater impacts. Even a small reduction in rainwater flow helps increase the life expectancy of municipal stormwater infrastructure.

- Biodiversity

  Urban trees and forests help enhance plant and animal habitats and with proper design and maintenance can create wildlife corridors linking natural areas.

- Overall Well-being

  Green spaces and tree canopy in the urban environment lead to several positive health outcomes through opportunities for social interaction, increased physical activity, noise mitigation, air quality and climate mitigation, contributing to reduced anxiety and depression, reduced obesity and cardiovascular disease, as well as reduced all-cause mortality and improved birth outcomes.

Understanding these benefits, staff were directed through Finance and Committee Resolution FA2021-90-A21 to undertake the development of an urban forest master plan (UFMP) for the City of Greater Sudbury (Appendix 1).

History of Our Trees

Deforestation happened in the City of Greater Sudbury for decades, starting in the 1870s with logging activities. The discovery of mineral wealth in the late 1800's led to prospectors setting forest fires to remove organic matter and soils. The subsequent mine operations relied on open roasting yards to burn ore. The transition to smelting, starting in 1929, saw the pollution of the air with various metals (including copper and nickel) that affected soils. By the early 1970's, more than 195 square kilometres of land in Greater Sudbury was devoid of vegetation with another 643 square kilometres supporting an essentially barren landscape.

Rehabilitation of the natural environment began in the 1970's, starting with the construction of the Superstack, which led to immediate localized emissions reductions. VETAC (Vegetation Enhancement Technical Advisory Committee) was created in 1973 to oversee the development of techniques for remediating land affected by local industrial activities. These efforts were enhanced with the starting of the regreening program in 1978 and by 2022 nearly 35 square kilometres of land have been limed, fertilized, and seeded, while over 10 million trees have been planted on 268 square kilometres of land.

The work undertaken by both VETAC and the regreening program, both of which are still operational today, have been impressive and have won a number of prestigious awards. However, the focus is primarily on replanting typically large, typically rural or undeveloped parcels. The intent of the urban forest master plan is to focus on trees in the urban areas and to create a plan to manage the urban forest as an asset moving forward.

Mapping and Assessing the Urban Forest

The urban forest comprises any single tree or group of trees (woodland) within the urbanized settlement areas of the City of Greater Sudbury, regardless of species, age, health, or location on private or public property.

The extent and state of the urban forest was assessed and mapped using remote sensing for across Greater Sudbury.

The detailed canopy analysis, conducted by a specialized firm (Davey Tree Services), reveals that the City's urban forest covers 33% of the urban area. This compares favourably to other municipalities: Ottawa and Vancouver have 31% canopy cover, Toronto has 28% canopy cover, Montreal has less than 25% canopy cover, and Calgary has only 8% canopy cover. Municipalities in southern Ontario have set general urban forest covers of between 30 and 40%. Beyond good canopy cover, the City has a generally healthy canopy, with a majority (85.9%) being in Good (51.4%) or Very Good (34.5%) health. Further, very little of the urban canopy is unhealthy, with 1.7% of the canopy being in Poor health and 0.3% being in Critical health. These health outcomes include the declining health and death of ash trees due to the emerald ash borer.

Creating the UFMP

Development of the Urban Forest Master Plan began with a best practices review, including the review of other urban forest master plans in Ontario and across Canada, as well as a review of relevant municipal plans, policies, by-laws, and programs. The process also included an extensive consultation program to inform the plan. Interviews took place with internal stakeholders, including staff from Planning Services, Linear Infrastructure Services, Real Estate, and Leisure Services. Interviews with external stakeholders included Conservation Sudbury, Public Health Sudbury & Districts, EarthCare Sudbury, the Regreening Advisory Panel (VETAC), and Coalition for a Liveable Sudbury. These interviews led to a list of priorities, challenges, and opportunities for consideration. An Over to You page was created and remained active for over a year: 169 responses were received from engaged citizens. Finally, a telephone survey was undertaken by a professional polling firm to understand the general attitudes and perceptions of residents towards the urban forest and the importance and benefits of trees.

Vision Statement and Goals

The following vision statement for Greater Sudbury urban forest is based on the extensive stakeholder and public engagement:

“It’s 2050 and the City of Greater Sudbury is known as Northeastern Ontario’s greenest city. The City’s urban forest has a rich, diverse and healthy canopy, that stores carbon, cools the city, cleans the air, provides habitat for wildlife, makes for walkable streets, and improves our mental health, satisfaction and well-being.”

Three goals for the urban forest are derived from the vision statement:

1. Vegetation Resource: CGS’s canopy is 75% or more of what is achievable, and able to tolerate stressors related to historically impacted soils and a changing climate.

2. Community Involvement: CGS’s management of the urban forest includes meaningful contributions from community members.

3. Resource Management: CGS’s urban forest is equitably managed using best practices.

Urban Forest Management Framework

The UFMP uses a management framework (Kenney-Leff Framework) to assess the existing urban forest against 28 key indicators, organized into three categories: Vegetation Resources, Community Involvement, and Resource Management. Key indicators are varied and include land use planning, socio-economic, and social justice considerations. Each indicator is given a rating of Low, Fair, Good, or Optimal. Two indicators are provided below as examples.

Vegetation Resources: Indicator 1 – Relative Tree Canopy Cover

This indicator is used to assess the desired degree of tree cover, according to goals set for each land use zone. A score of ‘Optimal’ is achieved for urban canopies at 75 to 100% of what is achievable based on the underlying land use zone, while recognizing constraints by local factors, such as soils, climate, etc. Land use zones each have their own respective achievable canopy target based on anticipated cover building cover, intensity of use, and built form. This indicator reveals that while tree canopy cover is rated as ‘Good’ for Greater Sudbury’s urban areas overall, some areas are rated as only ‘Fair’ and would benefit from additional tree planting either in public or private spaces.

Resource Management: Indicator 3 – Environmental Justice and Equity

This indicator is used to assess the equitable distribution of the urban forest’s benefits. A score of ‘Optimal’ is achieved with equitable planting and outreach at the neighbourhood level, guided by strong citizen engagement in low canopy areas. As applied to Greater Sudbury, this indicator reveals that, as in most other urban areas in Ontario, Canada, and world-wide, tree canopy cover is generally higher in more affluent neighbourhoods, although the trend here is weaker than many other areas. This indicator builds on and supports Indicator 1 by revealing specific urban areas that could benefit from additional tree planting.

UFMP Recommendations

The canopy assessment through the Kenney-Leff Framework has resulted in fifteen recommendations for the UFMP, each with an approximate implementation schedule and anticipated outcome. The recommendations are:

1. Develop an Urban Forest Working Group to formally coordinate activities of department leads.
2. Additional canopy be prioritized in dissemination areas with lower median household incomes.
3. The urban canopy be re-assessed in 2042.
4. Working group established to develop a data collection plan.
5. Working Group to establish planting plans to meet age/species diversity target.
6. Working Group to develop, update and formalize internal practices for site and species selection.
7. Working group to develop a formal plan for monitoring the use and ecological structure and function of the natural heritage features.
8. Working Group to develop a plan for consulting with green industry.
9. Working group to regularly review development policies to ensure consistency with urban forest management initiatives.
10. Working Group to develop a plan for consulting with large land holders in the CGS.
11. Working Group to develop educational materials to be disseminated and inform the public about best practices for managing street trees.
12. Working Group to monitor community level of engagement at approximately five-year intervals.
13. Working Group to review and pursue funding opportunities.
14. Working Group to annually review needs and resources and inform council.
15. Working group to update planting and maintenance procedures to reflect changing conditions or updated best practices.

These recommendations will form the basis of the upcoming implementation of the plan.

UFMP Implementation

Based on the recommendations and given that the UFMP is a 20-year plan, staff are working on a five-year implementation plan, which will be presented to Council as part of adoption of the UFMP. Implementation will be cross-divisional, given the multi-faceted nature of the urban forest, and will include work plans for staff in Linear Infrastructure Services, Infrastructure Capital Planning, and Leisure Services with the support of Planning Services. Key municipal staff have been engaged throughout the development of the UFMP and are now engaged in its implementation through the internal Urban Forest Working Group. UFMP implementation may, over its 20-year span, result in business cases from one or more of the above-noted divisions. All business cases will be brought forward for budget consideration by the relevant divisions through the standard process, as appropriate.