CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Planning Division

TO:	Chair and Members Planning Committee
COMMITTEE DATE:	May 30, 2023
SUBJECT/REPORT NO:	Hamilton Urban Forest Strategy Final Report (PED20173(a)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ken Coit (905) 546-2424 Ext. 7557
SUBMITTED BY: **SIGNATURE:**	Steve Robichaud Director, Planning and Chief Planner Planning and Economic Development Department

RECOMMENDATION

(a) That the "City of Hamilton Urban Forest Strategy", attached as Appendix "A" to Report PED20173(a) be approved as a background study to the City of Hamilton Official Plan review and that staff be directed to integrate the actions identified in Appendix "D" as part of future Departmental workplans;

(b) That the "City of Hamilton Urban Forest Strategy Technical Report", attached as Appendix "B" to Report PED20173(a) be received;

(c) That the Urban Forest Strategy Implementation Chart, attached as Appendix "D", to Report PED20173(a) be received;

(d) That the City adopt a target of 40% tree canopy coverage for the urban area by 2050, and to achieve the 40% tree canopy target:

(i) That staff be directed to refer to the 2024 budget process two Full Time Employee enhancements as follows:

(1) An enhancement of one Full-Time Employee (FTE) within the Forestry Section of Public Works to undertake the ongoing monitoring, reporting and facilitation of the implementation of the

Urban Forest Strategy including prioritizing those areas with greatest need for tree canopy;

(2) An enhancement of one Full-Time Employee (FTE) within the Forestry Section of Public Works to supplement the City's tree planting program, with a goal of increasing the annual target for City-led tree planting from 12,000 to 20,000 trees per year and increasing the annual free tree giveaway from 3,000 trees to 5,000 trees per year;

(ii) The staff be directed to refer to the 2024 budget process a capital budget allocation of up to $100,000 to purchase Laser Imaging Detection and Ranging or other appropriate data to accurately measure the city's tree canopy city-wide and by ward;

(iii) That staff be directed to explore the feasibility of using carbon credits as a possible means to fund tree planting initiatives as part of their review of the Tree Protection Guidelines and polices;

(iv) That as one action to respond to food insecurity and to increase biodiversity, that the Forestry Section of Public Works include opportunities for increased planting of fruit and nut trees in the urban area as part of the City's expanded tree planning initiatives;

(v) That staff be directed to include in their 2024 workplan, the development of a City-wide tree protection by-law on private property within the urban area as defined in the Urban Hamilton Official Plan and lands removed from the Greenbelt Plan;

(vi) That staff be directed to report back with recommendations to revise the Tree Protection Guidelines and polices for private property to require compensation for the removal of existing trees to accommodate new development through replanting or payment to the city based on calliper and species as per the current polices for City property;

(vii) That up to $150,000 be provided from the Woodland Protection Strategy Capital ID Account No. 81217755700 to fund any necessary consulting, research or related costs to prepare options and recommendations regarding a City-wide tree protection by-law, City-wide woodlot protection by-law and revisions to the Tree Protection Guidelines and policies.

EXECUTIVE SUMMARY

The urban forest includes all trees and woodlands on public and private lands within the urban area of Hamilton as defined in the Urban Hamilton Official Plan (UHOP). This includes individual trees growing on private residential, institutional, commercial, and industrial lands as well as in public parks and along streets. Natural areas such as the Niagara Escarpment, Cootes Paradise, Environmentally Significant Areas, small woodlands, and groups of trees are also part of the urban forest. In addition, the Province has removed lands from the Greenbelt Plan and has indicated that these lands are to be developed for urban type uses to provide for additional housing opportunities.

The Hamilton Urban Forest Strategy (UFS) and Technical Report (attached as Appendices “A” and “B” to PED20173(a)) sets out the importance of the urban forest to the economic, social and environmental health of the city, outlines the health of the urban forest (including an estimated 22% tree canopy cover in 2017) and sets out 26 recommended actions to protect, enhance, maintain, and monitor it over the next 20 years.

An Implementation Chart (attached as Appendix D to PED20173(a)) outlines how staff are currently implementing or proposing to implement the 26 recommended actions outlined in the UFS.

This report is recommending the approval of a target of 40% tree canopy cover by 2050. This target is more than the 30% target identified in the UFS but is similar to targets set by other GTHA municipalities and is appropriate to address the climate change emergency declared by council in 2019. The recommend actions in the UFS and this report provide direction on how to achieve the 40% tree canopy cover target through education about the value of our urban forest, better protection of the existing resource and growing the urban forest in Hamilton.

If approved the recommendations of this report would allow staff to better protect existing trees and woodlots through a consolidation and update of the current Dundas, Ancaster and Stoney Creek Tree Protection By-laws into a single city-wide by-law and updating the woodlot protection by-law to better define and protect existing woodlots across the City.

A review and update of the current Tree Protection Guidelines, which were adopted in 2010, is also recommended. The focus on this review would be on the current 1-for-1 tree replacement framework to a framework that would provide for increased retention of trees and tree canopy in private development and opportunities for enhanced compensation planting or cash in lieu for city sponsored planting commensurate with the size and species of tress being removed to maintain or expand the existing tree canopy in Hamilton.

Recommendations of this report, if approved will also allow staff to grow the urban forest. To implement the actions outlined in this report including monitoring, reporting and facilitating the implementation of the UFS, and to work with citizen and partner agencies to increase planting in the urban area and to develop possible funding sources through carbon credits, sponsorships and compensation from development, two full-time employees (FTE's) in the Forestry Section are proposed to be referred to the 2024 Budget process .

Accurately and consistently measuring the urban forest canopy which represents the amount of land both private and publicly owned covered by individual trees and woodlots overtime is important to the successful implementation of the UFS.

The 2017 canopy cover estimate of 21.2% (detailed on page 14 of the UFS attached as Appendix "A" to PED20173(a)) was determined using i-tree software and area samples. In 2022 City staff were provided Laser Imaging Detection and Ranging (LiDAR) data from the Provincial and Federal governments which provided more detailed 3D data points city wide. The analysis of this data, considered to be more accurate (attached as Appendix "E" to PED20173(a)) indicated a 17.8% -20% canopy coverage. This report includes a recommendation to fund the purchase of future data flown at the appropriate time of year to accurately measure the urban forest canopy.

Alternatives for Consideration – See Page 14

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Operating funding requests for two FTEs at $250,000 are to be referred to the 2024 budget process.

A Capital funding request for $100,000 is to be referred to the 2024 budget process for the purchase on LiDAR data. Staff will work with other city departments and levels of government that may benefit from the use of LiDAR data to determine if other funding sources may be used to offset this request

The Woodland Protection Strategy Capital ID No. 81217755700 that funded the UFS has a balance of $171,000 as of March 31, 2023. If approved, these funds can be used to fund the By-law development and Tree Protection Guidelines review requested in recommendations (d) (vii)) of Report PED20173(a).

This report recommends staff review carbon credits as a possible funding source for future tree planting and report back to council.

This report recommends that staff review and update compensation for removal of existing trees that could include in-lieu of planting payments that may be used as a possible funding source for future tree planting and report back to council

City staff have reviewed each UFS action as per the Implementation Chart, shown in Appendix "D" attached to Report PED20173(a). Any additional costs or staffing that may be required to implement the UFS will be determined in 2024 and presented to City Council through subsequent budget processes for implementation over the life of the UFS.

Staffing: Action 2 of the UFS calls for two Senior Program Coordinator positions to be created in the Public Works Department to implement the following actions of the UFS:

- Implement the communications strategy (e.g., web page, social media, coordinate volunteer planting and invasive species control events, respond to inquiries, maintain, and analyse data, publicize the Free Street Tree Program, and prepare educational materials and videos);
- Monitor implementation progress;
- Strengthen existing partnerships and actively seek new partnerships with organizations and individuals to support the City's UFS;
- Develop a best management practices manual for tree protection, planting and preservation to share with all City departments and utilities;
- Complete a tree planting priority analysis to guide a City-wide tree planting strategy;
- Develop programs and planting methods to target planting to areas of the city with low canopy coverage; and,
- Implement a forest health monitoring program (i.e., insects and diseases). Continue data management of urban forest inventories.

Staff recommend that this new position be referred to the 2024 Budget process for consideration by Council (Recommendations (d)(i) of Report PED20173(a)).

Legal: N/A

HISTORICAL BACKGROUND

The background to the development of the UFS is presented below.

UFS Milestones	
August 2014	New Urban Woodland Conservation By-law approved by Council. Report PD02229(d) recommended preparing an Urban Forest Strategy.
December 2016	Council approved a Capital Budget of $150,000 for the UFS.
February 2017	Work plan was approved by Council (Report PD02229(g)).
February 2018	Consultant team (Bioforest, KBM Resources Group and Dillon Consulting) retained through an RFP process. Background information and data review begins.
UFS Milestones	
May 2018	First round of public engagement to introduce project and gather background information (online survey, stakeholder workshops, public information centre, meetings with stakeholders). Engagement conducted through to November, 2018.
April 2019	Second round of public engagement begins to review the draft vision, themes and actions (five workshops and various stakeholder meetings, presentation at forum, seniors tree walk).
June 2019	Information Report (PD02229(h)) and presentation to Planning Committee to provide a verbal update on the UFS. Draft vision, themes and actions were presented to Planning Committee in advance of public engagement.
December 2020	Report PED20173 and presentation to Planning Committee to release draft UFS reports and seek public input on drafts.
January to February 2021	Public and stakeholder engagement using Engage Hamilton to gather input on the draft reports. Included one virtual public meeting, an online poll, and survey.
March to December 2021	Review of public and stakeholder feedback on draft Urban Forest Strategy. Revisions to draft Urban Forest Strategy.
February 2022	New LiDAR data provided to update canopy measurements

UFS Milestones	
January 2022 – March 2023	Review of report and actions in terms of new data, new staff, and new Provincial policies and regulations.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The Provincial Policy Statement (PPS) and A Place to Grow Plan are currently subject to an ERO posting and it is anticipated that they will be revised in June 2023. Should the government adopt the policies outlined in the ERO, the government would consequentially revoke the Provincial Policy Statement, 2020 and A Place to Grow, as well as amend regulations (O. Reg. 416/05 and O. Reg. 311/06) under the *Places to Grow Act, 2005*.

Provincial Policy Statement (2020):

The current 2020 PPS contains the following policies which support tree and forest protection for the values they provide to all:

- Planning authorities should promote green infrastructure to complement infrastructure (Policy 1.6.2);
- Long-term economic prosperity should be supported by minimizing negative impacts from a changing climate and considering the ecological benefits provided by nature (Policy 1.7.1 (k));
- Planning authorities shall support energy conservation and efficiency, improved air quality, reduced greenhouse gas emissions, and preparing for the impacts of a changing climate through land use and development patterns which promote design and orientation which maximizes efficiency and conservation and considers the mitigating effects of vegetation and green infrastructure. (Policy 1.8.1(f));
- The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored, or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features, and ground water features (Policy 2.1.2); and,
- Planning authorities shall consider the potential impacts of climate change that may increase the risk associated with natural hazards (Policy 3.1.3).

A Place to Grow Growth Plan for the Greater Golden Horseshoe (2020)

The following policies in the current A Place to Grow Growth Plan support forest health in urban areas:

- Proposals for large-scale development proceeding by way of a secondary plan, plan of subdivision, vacant land plan of condominium or site plan will be supported by a stormwater management plan or equivalent, that establishes planning, design, and construction practices to minimize vegetation removal, grading, and soil compaction, sediment erosion, and impervious surfaces (Policy 3.2.7.2(f)); and,
- The water resource systems, Natural Heritage System for the Growth Plan, and Agricultural System for the GGH also play an important role in addressing climate change and building resilience. Greenhouse gas emissions can be offset by natural areas that act as carbon sinks. Municipalities play a crucial role in managing and reducing Ontario's greenhouse gas emissions and supporting adaptation to the changing climate. The Province will work with municipalities to develop approaches to inventory, reduce, and offset greenhouse gas emissions in support of provincial targets as we move towards environmentally sustainable communities (Policy 4.1).

Hamilton Climate Change Action Plan:

In December 2019, the Corporate Goals and Areas of Focus for Climate Change Mitigation and Adaptation was presented to General Issues Committee (Report CMO19008/HSC19073). Under Goal 6, "Protect and Restore the Natural Environment", there were a number of focus areas (including adopting the UFS) which would contribute to increasing carbon sinks.

Urban and Rural Hamilton Official Plans:

The Urban (UHOP) and Rural (RHOP) Hamilton Official Plans contain policies (C.2.11 in UHOP and C.2.10.4 in RHOP) on Tree and Woodland Protection. These policies state that:

> "A Woodland Protection Strategy to protect tree cover on new development sites within urban and rural settlement areas and provides technical direction and practices to protect trees and other vegetation during construction shall be prepared to minimize the impacts on trees and woodlands to be retained."

The UFS implements the Provincial Policy Statement, A Place to Grow Growth Plan, the Hamilton Climate Change Action Plan, and Rural and UHOP policies

Biodiversity Action Plan

The City is working in partnership with local conservation and environmental organizations to develop a Biodiversity Action Plan (BAP) for Hamilton. The intent of the BAP is to coordinate strategic actions across organizations to ensure Hamilton's unique biodiversity is protected, enhanced, and restored. The draft BAP for Hamilton was recently endorsed by Council on May 2, 2023, with direction to engage with the public, stakeholders, and indigenous community representatives to inform updates to the final plan. The BAP is intended to work in tandem with the actions outlined in the UFS, and not to duplicate work programs or actions. However, given that both plans address matters of natural heritage management and urban greening, it is anticipated that there may need to be coordination in monitoring the implementation of both plans and subsequent reporting.

RELEVANT CONSULTATION

External Consultation

Highlights of previous public engagement leading up to the draft reports is available in Report PED20173 (Appendix "B", Technical UFS Report).

Public engagement ran from January 26 to February 28, 2021. Due to the COVID-19 pandemic, engagement was through the UFS web page and the Engage Hamilton platform. There were a variety of ways to participate, including:

- An online poll (143 participants);
- An online survey (129 participants);
- Submitting a question to staff, with answers posted (20);
- Attending the virtual public meeting on February 9 (84 people); and,
- Submitting comments by phone, email or mail (58).

The January to February 2021 public consultation allowed for the draft UFS technical and summary reports to be presented for public review and comment. The public was asked if there was any information missing from the draft reports, and if there were any new threats to the urban forest or opportunities that the City should consider.

During public consultation, participants stressed the importance of rapid implementation of the important actions in the UFS which are urgently needed to address immediate issues like climate change, equity, flooding, public health, and biodiversity loss.

The detailed results of public engagement are contained in Appendix "C" attached to Report PED20173(a).

Internal Consultation

- Manager Forestry & Horticulture;
- Manager Parks and Cemeteries;
- Director Office of Climate Change Initiatives;
- Director Municipal Law Enforcement;
- Director of Environmental Services; and,
- Manager Indigenous Relations.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Summary of the Changes Made to the Draft Reports

During the 2021 public engagement, staff received comments on the draft UFS. Appendix "C" attached to Report PED20173(a) provides detailed information on comments received, along with the staff response, and identifies the changes made to the UFS report. Public input is also documented in the UFS Technical Report, attached as Appendix "B" attached to Report PED20173(a).

A summary of public and stakeholder input received during the draft report consultation from January to February 2021 is outlined below:

- There was general support for the reports and the UFS. Residents urged the City to approve and implement the UFS as soon as possible. Some felt the actions were not bold or specific enough to address the climate crisis. Many advised that it was essential to provide the resources (staff and funding) to implement the actions;
- Social equity was an important issue raised. Residents and stakeholders were concerned about the uneven distribution of canopy cover across the City. They felt that the benefits of the urban forest should be equally available to all. Residents noted that achieving equitable canopy cover should be the focus for implementation, by prioritizing tree planting and maintenance in the communities that need it most;
- Better protection for private trees, especially during development, was considered very important. Many people felt a private tree by-law to regulate individual trees, as well as incentives to protect trees, was essential. There was concern about the current uneven protection of private trees across the City. In an online poll, 96% of participants felt that consistent protection for private trees was required across the City. They also wanted better implementation of private tree protection measures during development and better compensation when private trees are removed;

- Residents indicated that planting native species was important, and that the City should lead by example. Also, invasive plants were a growing threat to the health of the urban forest that needed to be immediately addressed;
- Since natural areas are important to the health of the urban forest, actions related to controlling invasive species and forest management should be more prominent in the UFS;
- The UFS should align with the Hamilton Urban Indigenous Strategy and should specifically reference the important role of Indigenous people in implementing the UFS;
- There was support for increasing the tree canopy. Some agreed with a canopy cover target of 30% over the 20-year time frame of the UFS, while others supported a higher target in the 35% to 45% range; and,
- How the canopy is measured was a concern. Maps were provided during the consultation process that showed canopy cover by Ward. Some of the participants indicated that including the Niagara Escarpment and natural areas in the analysis and reporting skewed the canopy cover results.

Final Urban Forest Strategy

The UFS report is a high-level, comprehensive document which summarizes the necessary actions for a healthy urban forest. Two final reports have been prepared: the "City of Hamilton Urban Forest Strategy and the "City of Hamilton Urban Forest Strategy Technical Report", attached as Appendices "A" and "B" to Report PED20173(a).

The UFS report identifies 26 actions for a sustainable urban forest,

The Technical Report provides more detailed information, including the methods and results of data collection, public engagement, comparison of Hamilton to five other municipalities' urban forest programs, and a baseline assessment of Hamilton's urban forest using indicators in the "Sustainable Urban Forest Guide: A Step-by-Step Approach" (2016), which will be used to monitor our progress in implementing the UFS.

The 26 actions represent a list of projects and tasks that will be completed to implement the UFS. Staff have prepared an Implementation Chart, provided in Appendix "D" attached to Report PED20173(a) that identifies the timing, lead City Department and resources required for each action.

Canopy Cover Target

This report is recommending the approval of a target of 40% tree canopy cover in the urban area by 2050. This target is more than the 30% identified in the UFS by 2043 but is similar to targets recently set by other GTHA municipalities such as Toronto and York

Region. This is an appropriate goal to help address the climate change emergency declared by council in 2019.

The canopy cover in 2021 in the urban area of Hamilton is 17.8-20%. Coverage on public lands is approximately 31.7% to 33% and Private Lands 16.2% -18% as per Appendix "E" attached to Report PED20173(a). Based on the experience of other municipalities in southern Ontario, increases to canopy cover are slow and gradual. For example, Toronto has planted 1.3 million trees from 2008 to 2018 which resulted in a canopy cover increase of 1.8%. Mississauga has increased its canopy cover from 15% to 19% (an increase of 4%) from 2007 to 2014. City staff wanted a challenging long-term target.

The strategy is to increase private and public tree planting. Young trees planted now will not provide much canopy at first, but as they age, they will provide exponential growth and canopy cover will show notable improvement.

Since 60% of the urban forest is located on private lands which has the lowest coverage rate, implementation will need to involve efforts from residents, institutions, business, Indigenous people, and stakeholders. The City will actively seek partnerships with the community. Community and stakeholder involvement are vital to the successful implementation of the UFS.

Protecting the Existing Canopy

If approved the recommendations of this report would allow staff to better protect existing trees and woodlots though a consolidation and update of the current Dundas, Ancaster and Stoney Creek Tree Protection By-laws into a single city-wide by-law and updating the woodlot protection by-law to better define and protect existing woodlots across the City. In addition, an update of the current 2010 Tree Protection Guidelines which require a 1-for-1 tree replacement is recommended to better guide the retention of trees in private development and provide compensation planting or cash in lieu for city sponsored planting commensurate with the size and species of tress being removed in order not to reduce the existing canopy.

Forestry staff will continue to monitor the health of the urban forest, develop, and implement an Invasive Species Management Strategy and expand existing monitoring program in partnership with other City Sections.

Growing the Urban Forest Canopy

Recommendations of this report, if approved will also allow staff to grow the urban forest. Two FTE's in the Forestry Section are proposed to implement the actions outlined in this report including:

- Implement a communications strategy (e.g. web page, social media, coordinate volunteer planting and invasive species control events, respond to inquiries, maintain, and analyse data, publicize the Free Street Tree Program, and prepare educational materials and videos);
- Monitor implementation progress;
- Strengthen existing partnerships and actively seek new partnerships with organizations and individuals to support the City's UFS;
- Develop a best management practices manual for tree protection, planting, and preservation to share with all City departments and utilities;
- Complete a tree planting priority analysis to guide a City-wide tree planting strategy;
- Develop programs and planting methods such as mini forests to target planting to those areas with greatest need for tree canopy; and,
- Develop possible funding sources through carbon credits, sponsorships, and compensation from development.

Carbon credits are one option to generate revenue to fund tree planting initiatives. Staff are proposing to explore the feasibility of developing carbon credits. The revenue from these credits could be used to offset the cost to plant additional trees either directly by the City or in partnership with community organizations. Staff will monitor the carbon credit market, and if the market would facilitate the sale of carbon credits for City owned tree assets, staff will report back to Council with a recommendation on whether or not to proceed with this possible revenue stream.

In addition to the environmental and mental health benefits associated with growing the City's urban forest, through strategic planting initiatives, urban forest inaitive can also contribute to addressing food insecurity concerns. Specifically, and where appropriate, fruit trees can be planted in publicly accessible locations, community gardens or within residential developments similar to the approach taken at City Hall with vegetable plantings along Hunter Street.

Measuring the Canopy

Accurately and consistently measuring the urban forest canopy which represents the amount of land both private and publicly owned covered by individual trees and woodlots overtime both city-wide and at a neighbourhood scale is important to the successful implementation of the UFS. It will allow staff to gauge the long-term success

and adjust planting programs moving forward to address low canopy areas and identify opportunities for planting.

The 2017 canopy cover estimate of 21.2% detailed on page 14 of the UFS was determined using Itree software and area samples. This process does not easily provide accurate neighbourhood scale measurement of the canopy. In 2022 City staff were provided at no cost one-time Laser Imaging Detection and Ranging (LiDAR) data from the Provincial and Federal governments. This data provided detailed 3D data points city wide. Unfortunately, this data was flown two weeks too early to measure full leaf out for some species and may therefore be low. However, the analysis of this data is thought to be more accurate (attached as Appendix E to PED20173(a)) and it allows for detailed area measurement of the canopy. The analysis indicated a 17.8% -20% city wide canopy coverage and some significant differences in canopy cover on ward basis compared to the 2017 measurement.

This report includes a recommendation to fund the purchase of future data flown at the appropriate time of year to accurately measure the urban forest canopy. Future request for capital to fund the purchase of LiDAR data will ne made on an as needed basis to monitor canopy growth.

ALTERNATIVES FOR CONSIDERATION

Council could decide to not approve the final UFS reports or the recommendations to support it implementation. This option is not recommended because it will delay the implementation of the important actions in the UFS which are urgently needed to address immediate issues like climate change, equity, public health, flooding, and biodiversity loss.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Healthy and Safe Communities
Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

Clean and Green
Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PED20173(a) – City of Hamilton Urban Forest Strategy Final Report

Appendix “B” to Report PED20173(a) – City of Hamilton Urban Forest Strategy Final Technical Report
Appendix “C” to Report PED20173(a) – Summary of Public Consultation (2021)
Appendix “D” to Report PED20173(a) – Implementation Chart
Appendix “E” to Report PED20173(a)) – Canopy Coverage 2021

KC:sd