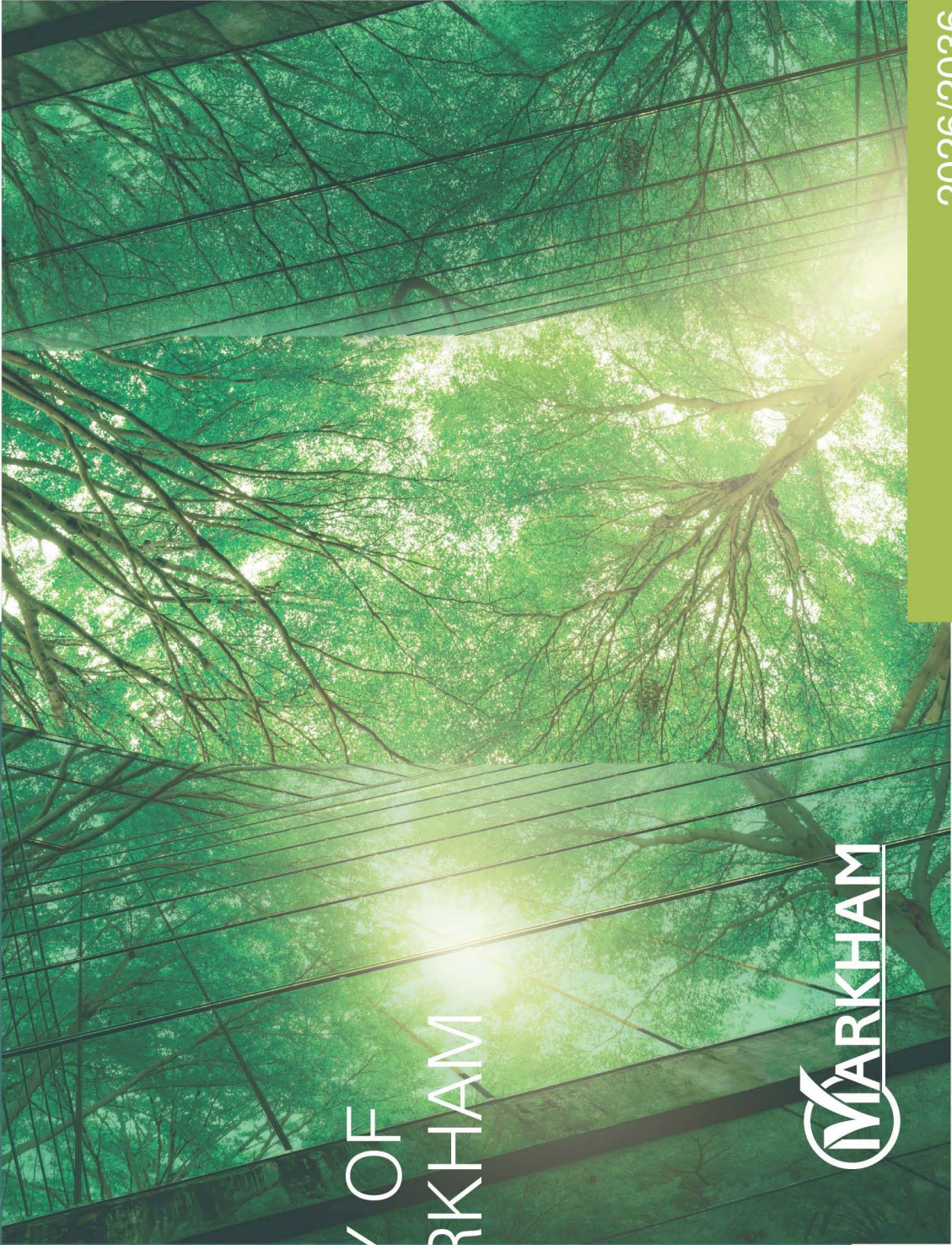




CITY OF
MARKHAM



2026/2036

Urban Forest Management Strategy



Prepared for the City of Markham, Operations Parks Forestry by Kuntz Forestry Consulting Inc., NOT just Kuntz Forestry and McNeil Urban Forestry with contributions from Joelle McNeil, PhD Candidate, School of Planning, University of Waterloo, ON, Dr. David J. Nowak, (retired), Senior Scientist, U.S.D.A. Forest Service, i-Tree Project, Petersburg, New York, Peter Simon, Tree City. The Authors acknowledge the contributions of David Plant, Senior Manager - Parks Horticulture and Forestry Division City of Markham.

Design: Blur Design Studio

Contents //

Mayor’s Message	03
Land Acknowledgement	04
Chapter 1: Introduction	05
+ The Urban Forest	
+ Why the Urban Forest Matters	
Chapter 2: What we Heard	09
Chapter 3: The Big Picture	11
+ The 30% UTC Target: Closing the gap	
+ Current Forest Composition (2023)	
+ Windshield Survey: Key Findings	

Chapter 4: The State of the Urban Forest	17
+ Criteria & Indicators for Strategic Forest Planning & Management	
+ Strengths, Weaknesses, opportunities & Threats (SWOT) Analysis	
+ Tree Equity	
Chapter 5: The Urban Forest Management Plan 25	
+ Strategic Framework	
+ Vision & Purpose	
+ Key Drivers	
+ Key Strategies	
+ Strategic Framework	
+ Strategic Goals	
Chapter 6: Actions	31
+ Action Plan Highlights	
+ 5 Year Operating Plan: 2026-2030 Budget	
+ A Case for Large-Stature Trees	
Chapter 7: Future	35
+ What we must Focus on from 2026 to 2030	

Mayor's Message //

Markham's urban forest stands as one of our city's most significant natural assets, contributing to the enhancement of our quality of life, safeguarding public health, and fortifying our resilience against the adverse effects of climate change. With over 2.8 million trees spanning our community, our urban forest not only serves as a source of aesthetic beauty but also plays a pivotal role in delivering environmental, social, and economic benefits valued at millions of dollars annually.

The City's Urban Forest Strategy 2025–2045 outlines a clear and comprehensive roadmap to guarantee the vitality and growth of our urban forest for future generations. Through equitable planning practices, judicious planning, sustained investment, and collaborative partnerships, we are resolute in our commitment to safeguarding and expanding this shared resource.

By working collectively, with all levels of government, community stakeholders, and with the enthusiastic support of our residents, we can elevate Markham's standing as a sustainable, green, and healthy community. Our trees are not merely an integral component of our landscape; they are indispensable and vital to our future success.

Mayor Frank Scarpitti



MARKHAM

Indigenous Land Acknowledgement //

We begin today by acknowledging the traditional territories of Indigenous peoples and their commitment to stewardship of the land. We acknowledge the communities in circle. The North, West, South and Eastern directions, and Haudenosaunee, Huron- Wendat, Anishnabeg, Seneca, Chippewa, and the Mississaugas of the Credit peoples. We share the responsibility with the caretakers of this land to ensure the dish is never empty and to restore relationships that are based on peace, friendship, and trust. We are committed to reconciliation, partnership and enhanced understanding.





Milke Dam Bridge

Introduction //

Markham's urban forest is a vital natural asset that enhances the city's livability, climate resilience, public health, and biodiversity. This Urban Forest Strategy supports the Urban Forest Management Plan 2025-2045 which outlines a path to sustainably manage Markham's urban forest. City staff will accomplish this through equitable planting, interdepartmental collaboration, sustained investment in tree maintenance, and green infrastructure. Together, these actions provide a comprehensive and strategic framework for a sustainable urban forest.

The Urban Forest Strategy aligns with the City's Strategic Plan 2020-2026, underscoring the importance of urban forestry in combating climate change and promoting community well-being. It details proactive strategies to address the complex challenges and unique opportunities

associated with urban tree management within a rapidly urbanizing municipality.

By implementing this plan, Markham aspires to redefine the role of trees within the broader context of city planning, infrastructure design, and community development. The initiative aims to solidify trees as vital assets in the fight against climate change, urban heat, and environmental inequality, ensuring their integration into the daily lives of all residents. The strategy acknowledges that urban trees not only enhance the aesthetic appeal of the city but also play a vital role in mitigating the effects of heat islands, improving human health.

The City of Markham Operations Forestry Department will lead this ambitious initiative.

Why the Urban Forest Matters to Markham

An urban forest refers to all trees planted within a defined urban area such as a city or town on both private and publicly owned land. It's not a 'forest' as we traditionally know it, but more of a collective of trees that may be separated by buildings or roads, parks and gardens, but still add up towards - well, an urban forest! (Trees for Cities 2025)

Overall, there are 2.8 million trees in Markham with 6 varieties forming the largest percentage, reinforcing our need for careful planning and diversity as we replace trees. These trees have a structural/replacement value of around \$1.1 billion (CAD) and conservatively produce services valued at \$9.1 million/year (York, Region of, 2023).

The urban forest is a shared resource, with shared responsibilities for its care, management and growth. In addition to the City of Markham's various municipal departments those partners include but are not limited to the Region of York, the Toronto and Region Conservation Authority, Infrastructure Ontario, provincial and federal governments, Markham residents and business owners, utilities, school boards, and other public agencies, all who must collaborate to care for trees to optimize their benefits.

Understanding and strengthening these relationships are critical to sustaining Markham's urban forest.

Urban trees form the foundation of the City's green infrastructure, providing a wide range of benefits that are essential for both the environment and community health. Their role extends beyond visual appeal, as they deliver essential services that enhance city living.

Urban trees are essential green infrastructure. They:

- + Cool cities and reduce energy costs by reducing the urban heat island effect
- + Improve mental and physical health
- + Increase canopy, which correlates with reduced crime, improved property values, and beautiful neighbourhoods
- + Combat climate change by storing carbon, managing stormwater and improving air quality

The health of a city's people and planet is deeply tied to the health of its urban forest.

Trees are essential in reducing the urban heat island effect in residential, commercial, transportation, and recreational areas. The most significant benefit of urban trees is that they reduce air temperatures by providing shade. This leads to cooler and healthier communities, making it necessary to promote the growth of large and healthy trees within urban areas, as the world gets hotter.



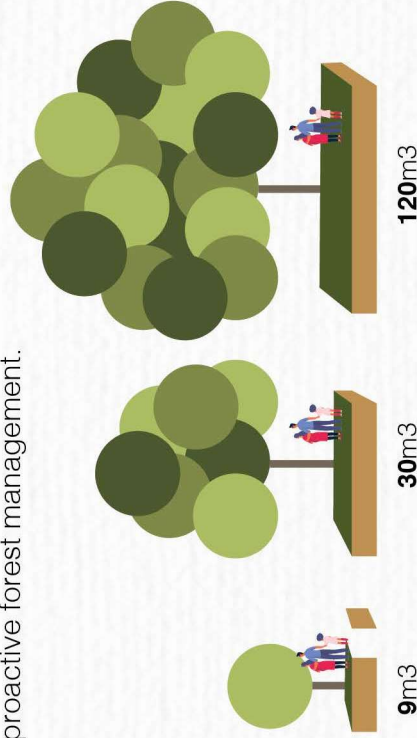
Benefits of trees in the city

	Human Health		Air Quality		Transportation		Mitigate Against Extreme Weather
	Economic Development		Public Safety		Education		Reduce Stormwater
	Water Quality		Equity		Builds Community		Resilience

Specifically, urban trees:

- + **Reduce Urban Heat**
By providing shade and releasing moisture through a process known as transpiration, trees help mitigate the urban heat island effect. In this phenomenon, city areas become significantly warmer than surrounding rural areas. This cooling effect helps lower temperatures during scorching summer days, making neighbourhoods more comfortable for residents.
- + **Enhance Property Values**
Well-maintained trees and lush landscaping significantly boost the appeal of neighbourhoods, making properties more attractive to prospective buyers. The visual beauty brought by trees contributes to the charm of a community, often translating into increased property values and a more vibrant real estate market.

- + **Reduce Stormwater Runoff**
Fundamentally, the vitality of Markham's urban forest is closely linked to the health of its residents and the stability of the planet, highlighting the urgent need for proactive forest management.



Soil volume required by tree size for sustainable trees.

- + **Promote Health and Well-Being**
Research has shown that access to green spaces, including parks filled with trees, contributes positively to mental health, reducing stress levels and promoting relaxation. The mere sight of trees can uplift spirits and inspire outdoor activities, leading to increased physical health and overall happiness among residents.
- + **Fight Climate Change**
Trees act as natural carbon sinks, absorbing carbon dioxide from the atmosphere and storing it in their biomass. This essential function helps combat climate change by reducing greenhouse gases, illustrating how each tree plays a crucial role in creating a more sustainable urban ecosystem.

Stormwater Benefits:

In 2010, the State of Indiana Department of Natural Resources conducted a statewide street tree benefit study using i-Tree Streets. The study showed that Indiana's street trees returned \$79 million in environmental services and economic benefits; applied to all 567 Indiana communities, reductions in stormwater management costs accounted for 64% of the environmental services (stormwater, energy, air quality, and CO) provided by street trees.

Solution:

Installing trees in locations that are engineered to retain stormwater is a great way to augment existing stormwater management systems, increasing their capacity and improving water quality while greatly improving urban forest canopy.

What We Heard //

The following is a summary of the Communications and Engagement approach with the public and interested & affected Parties:

- + City of Markham Communications launched the Your Voice Markham Project page in the Spring of 2024.
- + City of Markham Communications conducted an online public survey in the Summer of 2024.
- + The Consulting team prepared a Tree Equity Index, to serve as a guide for future public and community tree-planting initiatives.
- + The City hosted a UFMP Virtual Open House on November 12, 2024.
- + The City hosted a UFMP In-person Open House on November 14, 2024 with approximately 13 people attending.



The development of the UFMP has been greatly informed by the insights of over 450 residents who actively participated through surveys, open houses, and workshops. The engagement process illuminated several key sentiments:

89%

A remarkable 89% of participants strongly agree that trees are an essential element for their health and well-being. This finding underscores the community's recognition of trees as a critical resource for enhancing quality of life.

82%

An impressive 82% of residents expressed support for increased investment in initiatives to expand tree canopy cover, revealing a widespread desire for enhanced urban greening efforts and more significant government initiatives.

44%

Only 44% of individuals reported satisfaction with the current tree pruning cycles, indicating a need for improvements in tree maintenance practices to ensure public safety and the health of trees.



A pervasive sentiment among residents is a desire for more trees to be planted and a sense of urgency for more immediate actions to achieve this goal.

The Big Picture //

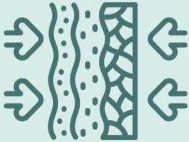
The view from above provides a clearer understanding of an urban forest. The existing urban tree canopy (UTC) refers to the extent of tree cover visible from above, as captured through aerial or satellite imagery.

Markham's UTC is 18.5% within the current urban boundary.

Markham Council adopted a UTC target of 30% by 2031, in line with the recommendations of the York Region Forest Management Plan (2016). Markham's Urban Forest Management Plan utilizes an Urban Tree Canopy Change Analysis to project that under current conditions, Markham's UTC will increase to 18.9 % by 2031 and 19.3 % by 2051.

At the core of this analysis is the recognition that Markham's UTC gap – the gap between the City's target of 30% UTC by 2031 and the UFMP's projection of 18.9% UTC by 2031 (Graph 3, UFMP) results from several interconnected factors.

Stresses on Trees planted in Hard Surfaces



Soil
Compaction

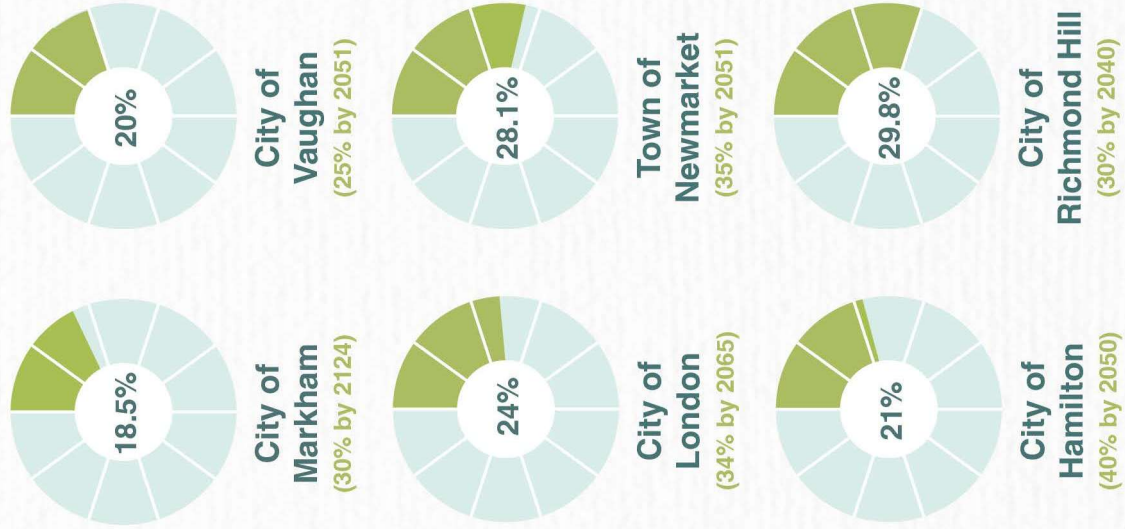


Road
Salt



Limited Soil Available
for Roots to Grow

Here is how the City of Markham's UTC compares to some other municipalities.



The key limiting factors for increased canopy growth have been identified as follows:

+ **Limited Planting Space**

Rapid urban growth has led to limited planting spaces, restricting opportunities for new tree growth. This urban intensification results in competition for land, making it challenging to introduce new trees into the environment, innovative strategies, such as vertical gardens, green roofs, soil cells and various other approaches for increased soil volumes that incorporate large-stature trees into existing infrastructure, like streets and parking lots, can create new opportunities for planting while enhancing the urban landscape. Strategies to create sufficient space for large-stature trees, enhance soil health, and apply integrated pest management practices will be essential for maintaining tree vitality.

+ **Tree Mortality**

The mortality of existing trees, caused by factors such as poor soil conditions and pest outbreaks, threatens the overall health of the canopy. Affected trees may die from diseases or become hazardous, further reducing canopy coverage and the ecosystem services they provide. Scheduled young tree maintenance promotes the health and longevity of urban trees, ensuring they can thrive.

The City's Neighborhood Block Pruning Program, approved by Markham Council in 2021 for Markham's 120,000 street trees, prevents issues before they escalate, reducing long-term costs and improving the overall health of the urban forest. This program is a critical component of tree health which requires priority funding.

+ **Inadequate Protection for Private Trees**

Insufficient protection for private trees, which are vital to maintaining overall canopy coverage, worsens the challenge. Many residents may lack awareness or the resources to properly care for their trees. Community education programs that emphasize the importance of private trees and offer resources for their care can help close this gap. Providing workshops and informational sessions can empower residents to take responsibility for their trees and help improve the health of the urban forest. Regulation through the private tree-by-law can also encourage greater participation in urban greening.

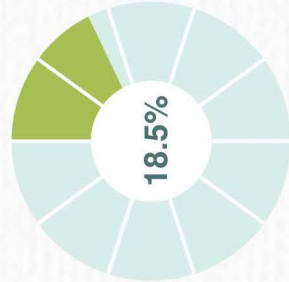
The 30% Urban Tree Cover Target (UTC): Closing the Gap



- + **Continuing With Current Approach:** Current UTC of 18.5 % reaches 18.9 % by 2031 and 19.7% by 2051
- + **The projection for the Enhanced Management approach:** Meets 30% by 2124
- + **78% of new trees must be planted on private land:** This requires a comprehensive strategy to be developed leveraging the Trees for Tomorrow program.
- + **Public-private partnerships with incentives and making space for large trees are essential**

To effectively reduce Markham's UTC gap, the Urban Forestry Management Plan introduces an Enhanced Management Approach that prioritizes sustained planting, improved urban design standards, strengthened interdepartmental collaboration, and equitable decision-making processes. This includes a detailed Five-Year Operating Plan (2026-2030), comprehensive policy reform recommendations, and community-based strategies designed to foster public and private engagement in tree planting and care. Therefore, a revised UTC target year of 2124, through the adoption of an Enhanced Management approach, is recommended to attain and sustain Markham's 30% UTC target.

Urban Tree Canopy (UTC) Comparison



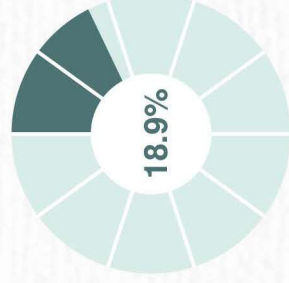
Current UTC Target Date 2031



Enhanced Management Revised UTC & Target Date 2124



Projected UTC Under Enhanced Management



Projected UTC Under Current Conditions

Strategies include:

Promoting Private Tree Stewardship Through Tress for Tomorrow: Focusing on underserved neighbourhoods to address equity issues in tree canopy coverage is crucial. These initiatives can involve collaboration with local organizations and community groups to ensure that tree planting efforts reflect the needs and desires of residents.

For the revised long-term UTC target (2124) under current conditions, 30% tree cover would be attained and sustained near the end of the 100 years in a sustainable fashion (UMFP, Appendix 1) with the total number of trees planted over the 100 years estimated at a total of 5.1 million trees or 50,800 trees per year (11,200 public trees, 39,600 private trees). Through Markham's street tree replacement program, street tree planting in new subdivisions and woodlot park planting program, the City is not projected to be able to sustain an annual public tree planting target of 11,200 public trees without developing a comprehensive strategy to address this.

For the revised long-term UTC target (2124) under Enhanced Management approach to increase tree growth and reduce mortality rates, 30% tree cover would be attained and sustained near the end of the 100 years in a sustainable fashion (UFMP, Appendix 1) with a reduced total number of trees planted over the 100 years estimated at a total of 1.9 million trees or 18,700 trees per year (4,100 public trees, 14,600 private trees). Through Markham's street tree replacement program, street tree planting in new subdivisions and woodlot park planting program, the City is currently meeting its annual public tree planting target of 4,100 public trees.



Edith. M. Mair's Park, City of Markham



Current Urban Forest Composition (2023):

The following table illustrates the distribution of tree cover across different land uses in Markham:

Land Use	% Tree Coverage	% Impervious	% Plantable
Public Parks	43.6%	11.9%	30.2%
Residential	16.4%	49.4%	19.5%
Commercial	10.5%	47.1%	16.9%
Overall Average	18.5%	44.8%	20.8%

Windshield Survey: Key Findings

A detailed windshield survey conducted along 21 km of municipal roads aimed to assess the health and distribution of urban trees.
Key findings from the survey include:

+ Tree Ages

A significant portion of the trees are relatively young, primarily falling within the 0 to 40-year age range. This indicates that many trees are still in their development phase and have not yet reached their full ecological potential.

+ Tree Health

The health of most trees is categorized as good to fair; however, the level of maintenance required varies across different wards, suggesting that tailored maintenance

strategies may be necessary to address specific community needs. Newer communities with less space for trees will require additional resources to promote tree health and sustainability.

+ Priority Maintenance

The survey identified corrective pruning as a critical need for enhancing tree structure and ensuring safe clearance from roadways and sidewalks. Corrective Pruning, which is being phased in as part of the City's Neighborhood Block Tree Pruning Program for Markham's 120,000 street trees, helps to promote healthier growth and reduces hazards for pedestrians and vehicles.

The State of the Urban Forest //

The Urban Forestry Management Plan Technical Project Team completed several self-assessments of Markham's current state of the urban forest in November 2023. The following is a summary of the results:

Criteria and Indicators for Strategic Urban Forest Planning and Management

The Performance Indicators measure progress towards achieving key objectives for each criterion used to assess each Framework (Section 2.1.2.2, Markham's UFMP). Generally, a rating for most Performance Indicators at the 'Good' or 'Optimal' level of performance is considered desirable.

- + This assessment is important in creating an urban forest management plan for the community, ensuring our strategies are relevant and effective.

Overall, 56% of the 25 Performance Indicators are either 'Low' or 'Moderate' and 44% of the Performance Indicators are in the desired category of either "Good" or "Optimal." This rating shows room for improvement over time and provides direction to the City on where it can focus resources to move towards achieving more sustainable urban forest management in the future. For

example, many of the 'Low' Performance Indicators are in the Community framework; this suggests the City can improve its overall rating by focusing work over the next 5-Year Operating Plan on attaining a 'Good' performance indicator rating by working towards these objectives.

Over the next 5 Years, how can Markham increase the number of Performance Indicators in Good and Optimal?

- + **Neighbourhood Action:** At the neighbourhood level, citizens understand and cooperate in urban forest management.
- + **Citizen-municipality-business interaction:** All constituencies in the community interact for the benefit of the urban forest.
- + **General awareness of trees as a community resource:** The general public understands the role of the urban forest.

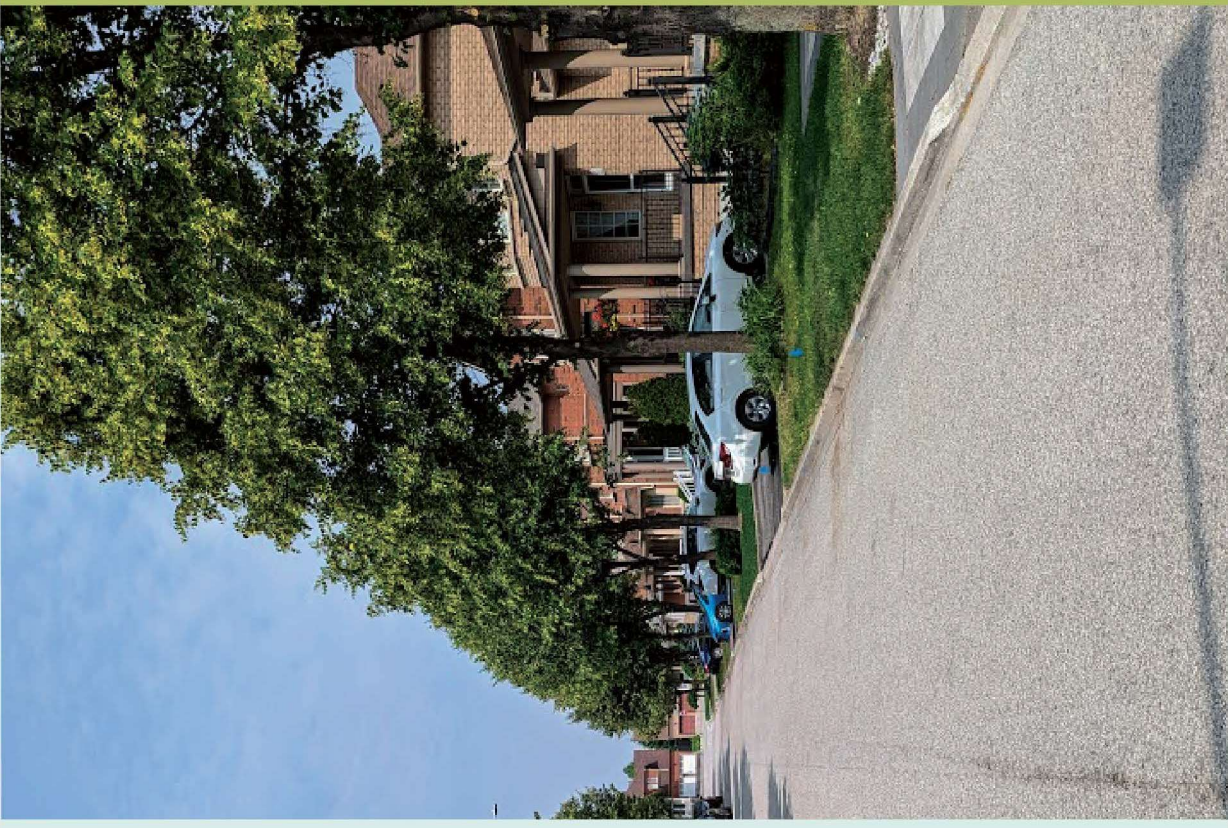
By the end of this planning period in 2045, most of the 25 Criteria and Indicators for Strategic Urban Forest Planning and Management should reach the 'good' or 'optimum' indicator level provided that the municipality dedicates the appropriate resources.

planning

Strengths and Weaknesses (SWOT) Analysis

Strengths

- + Council endorsed a 30% canopy goal aligning with the Region of York Urban Forest 2016 recommendations.
- + Worker safety. Staff have good equipment and training.
- + A mix of staff and contracted services leverage existing budgets and maximize results.
- + Timely updates to senior staff and Council regarding current and emerging issues which affect the urban forest.
- + Full-time Forestry Inspector hired in 2024, increasing efficiency and allowing more staff to maintain trees.
- + Timely and effective response to related events, either weather or pest related, employing corporate messaging and resident engagement during and after the event.
- + The City of Markham has a proactive Block Tree Pruning Program and its 8-year cycle is on par with the average cycle (8.5 years) from a Benchmarking Survey.



Weaknesses

Current staffing and resource levels are not sufficient to support a proactive tree management program.

The gaps for effective service delivery in Forestry are:

- + Three Contract Arborist Crews are required to keep pace with resident requests and tree work related to a growing urban forest. The current compliment is one crew.
- + A second fulltime inspector is required to provide city arborists and contractors timely pre-qualified work.
- + The Operations Parks Forestry department requires a manager to initiate and drive the deliverables set out in the UFMP, overseeing the strategic direction and long-range plan for the urban forest.
- + Two Full-time in-house Arborists (4 crews of 2 Arborists/crew).
- + A Contracted Arboricultural Inspector is required every two years to be responsible for Woodlot assessment/coordination across the whole City.



Opportunities and Threats (SWOT) Analysis

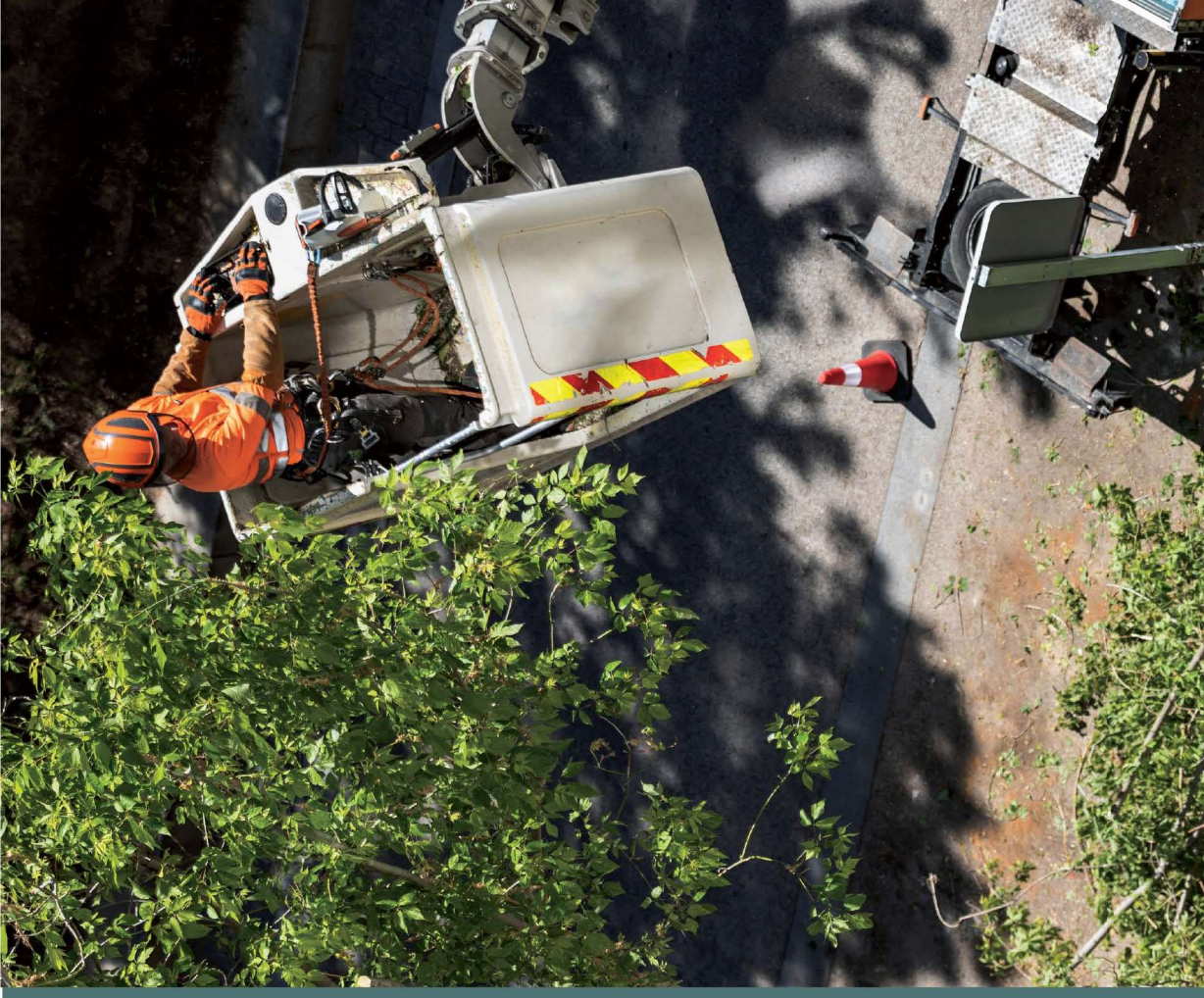
Opportunities

- + **Promote** adequate space for trees in new development application process by leveraging the City Sustainability Metrics Program. This is the single most important step to ensuring growth and health of the urban forest.
- + Incorporate direction from the Urban Forest Management Plan into their work on Phase 2 of Official Plan Review.
- + **Recommend** that the City's Streetscape Guidelines for intensification areas recognizes and reflects that the public tree is an integral part of the public road allowance.
- + Recognize City trees as Green Infrastructure and with direction from the UFMP treat and value this asset in the same way we treat static assets. The City cannot replace mature trees on a like for like basis and when a mature tree is removed the replacement is fractionally equivalent to the original asset.



Threats

- + Review is required of current practices and programs to preserve and protect trees. While the City has a Council-endorsed canopy cover goal of 30% by 2031, programs such as sidewalk infill in mature neighborhoods result in mature trees being removed and valuable canopy being lost.
- + Cyclical pests such as Spongy Moth present an ongoing threat to the urban forest and have the potential to result in tree mortality depending on the severity of the infestation. Healthy trees are better equipped to survive the effects of such pests and as such tree maintenance becomes a critical requirement.
- + Windstorms and microbursts, which seem to occur almost yearly, have the potential to severely damage the urban forest, often resulting in the removal of mature trees in older neighborhoods. The Neighbourhood Block Tree Pruning program is the first line of defense to prune street trees and eliminate structural defects and lighten the canopy of the tree, which better allows the trees to withstand these events.



Tree Equity

- + Not all neighbourhoods experience the same benefits from trees. Some areas have higher heat island effects, more impervious surfaces, and less tree cover than others. An environmental justice perspective helps the UFMP focus on the community's diverse needs. Markham's UFMP (Section 2.2.1) presents an opportunity to address the issue of "Tree Equity". Tree Equity emphasizes the importance of ensuring a fair distribution of the urban forest throughout the city.

- + Tree Equity means that every area of the city should have an adequate number of trees, allowing all residents to benefit from the health, economic, and other advantages that trees provide (American Forests, 2024). Urban trees help prevent heat-related illnesses and fatalities. By striving to achieve Tree Equity, we can save lives and lessen the impacts of climate change.

What is Tree Equity?

- + Trees are essential urban infrastructure for human health and well-being
- + Tree equity helps address damaging environmental inequities
- + Tree equity analysis identifies inequalities and prioritizes human-centered investment in areas with the greatest need



Tree Equity Index

The plan emphasizes that Markham faces challenges with tree equity. Our analysis of tree equity in Markham involved creating a tool called the Tree Equity Index; this tool is a map designed to help ensure that the benefits of trees are distributed fairly across all neighbourhoods. We developed our tool using four indicators:

- + **Tree Equity Scores (TES)**
- + **Population Density**
- + **Tree Cover**
- + **Impervious Surfaces**

The tool assigns scores to each neighbourhood on a scale from zero to 100 to indicate the levels of tree equity. A higher score (closer to 100) signifies a neighbourhood with a higher priority for actions such as tree planting, creating space for large-stature trees and community engagement about the benefits of urban tree canopy. A lower score (closer to 0) indicates a neighbourhood with a lower priority for actions, represented as darker green-coloured neighbourhoods.

LEGEND

-  **Urban Area "A"**
(Source: City of Markham Official Plan)
-  **Municipality Boundary**
-  **Census Tract Boundary**
(Source: Statistics Canada)

Tree Equity Index

-  **40 or less**
-  **41 - 60**
-  **61 - 80**
-  **81 - 100**



The Urban Forest Management Plan //

The Plan guides Markham's urban forest development over the next 20 years. It aims to:

- + **Expand canopy cover equitably across all neighbourhoods.**
- + **Engage the community in stewardship.**
- + **Integrate trees into citywide planning and design.**

Vision Statement

The City of Markham's urban forest, a vital system of the City's green infrastructure, is an essential asset and critical to making Markham a sustainable community. A healthy and resilient urban forest supports a growing and equitable community. Through recognition of value, nature-based scientific solutions, and City-wide strategic planning, our urban forest will be planned, built, protected, maintained, and enhanced for the benefit of all generations.

Key Drivers

Urban Growth

Challenge: Increased density threatens space for large trees. As Markham experiences increased development, the need for responsible land use becomes paramount. High-density growth can severely limit the space available for trees, necessitating innovative solutions to maintain the urban forest.

Climate Crisis

Challenge: Record heat and storms demand natural cooling solutions. With the rise of extreme weather events and record temperatures, there is a growing urgency to implement natural cooling solutions.

Tree Equity

Challenge: Some neighbourhoods lack adequate tree coverage. There exists a notable disparity in tree coverage among different neighbourhoods, leaving certain areas with limited access to the benefits of urban greenery. This inequity, while identified, will be very difficult to address in established neighborhoods. Healthy trees in parks and open space will require increased prioritization in these areas.

Lack of Federal/Provincial Aid

Challenge: Municipalities provide the most urban forestry support. Funding for urban forestry initiatives often relies largely on municipal budgets, which may be inadequate to meet the city's forestry needs. The City should explore opportunities for external funding via grants to help support the challenges in implementing comprehensive tree management practices and programs.

Key Strategies

- + Protect and Grow
- + Plant trees strategically on public lands while looking for opportunities to plant trees on private lands
- + Ensure soil, space, and water access for new trees
- + Using the Trees for Tomorrow Program platform explore opportunities for information sharing and public engagement for private tree stewardship with a potential name being Strong Roots.



Strategic Framework

Vision: A healthy, resilient urban forest for all Markham residents.

- + **Goal 1:** Maintain public trees and reduce risk
- + **Goal 2:** Protect tree-growing space in the urban form
- + **Goal 3:** Plant for success and diversity
- + **Goal 4:** Plan collaboratively across departments
- + **Goal 5:** Explore opportunities to address

Strategic Goals

The Plan envisions a vibrant and equitable Markham where every resident benefits from a thriving, climate-resilient urban forest. Five long-term goals support the Vision, based on an Enhanced Approach to managing Markham's urban forest:

- + **Maintain:** Implement proactive care strategies such as a Young Tree Maintenance Program to address health and growth issues creating a more resilient urban forest. Continue the City's Neighborhood Block Tree Pruning Program to maintain the existing 8-year street tree pruning cycle and an update to the tree inventory will help ensure public tree health and longevity.
- + **Protect:** Integrate private and public trees into planning processes through new regulations, infrastructure design, and zoning standards, ensuring that trees are valued as essential components of the urban landscape. This requires collaboration with various city departments to prioritize green spaces in development projects. Establishing new guidelines for tree preservation during construction can also help minimize damage to existing trees. Additionally, public education on the importance of trees can foster a culture of respect and care within the community.
- + **Plant:** Explore opportunities to increase annual private planting targets, focusing on species diversity and soil health. Diverse species contribute to ecological resilience and provide a variety of benefits, including wildlife habitat and aesthetic appeal. Collaborating with local nurseries and conservation groups can facilitate the procurement of native and resilient species that thrive in Markham's specific climate conditions. Engaging residents in tree planting events through the Trees for Tomorrow Stewardship Program can enhance community involvement and foster a sense of ownership.
- + **Plan:** Improve governance structures and performance monitoring to ensure accountability and effectiveness. Regular 5-year reviews, using the Criteria and Indicators for Strategic Urban Forest Planning and Management (Section 2.1.2.2 of the UFMP), will enable adjustments based on changing community needs and environmental conditions.
- + **Promote Environmental Justice:** Utilize the Tree Priority Areas for Maximum Canopy Benefits map, created as part of the UFMP (Section 2.2.2), to inform investments and outreach efforts, ensuring that all communities benefit from trees. This commitment to tree equity will help create a more inclusive urban forest that serves everyone, ensuring that no community is left behind in the pursuit of a greener, healthier city.

Urban Forest Strategic Framework

Vision For The Urban Forest

The City of Markham's urban forest, a vital system of the City's green infrastructure, is an essential asset and critical to making Markham a sustainable community. A healthy and resilient urban forest supports a growing and equitable community. Through recognition of value, nature-based scientific solutions and City-wide strategic planning, our urban forest will be planned, built, protected, maintained, and enhanced for the benefit of all generations.





Targets/Objectives

Pruning Cycle

Maintain the Neighbourhood Block Tree Pruning Program (8-Year pruning cycle) for Markham's 120,000 Street trees.

People Need Trees

Consider Adopting the "3-30-300 Rule" as a guideline for community planning over city-controlled lands.



Eliminate Markham's UTC Gap

Formalize a Tree replacement policy.

Optimize the value of the Ecological Services provided by the Urban Forest

Increase the intrinsic value of the urban forest through increasing the number of bigger and healthier trees.

Make Space for Trees

Provide access to a minimum of 30 m³ of uncompacted soil per tree within the Public Realm.



How/Action Items

0-5 Years

Maintain funding for Neighbourhood Block Tree Pruning Program.

Implement a Young Tree Maintenance Program to grow healthy resilient trees

Establish a Forest Health Monitoring Program.

5-10 Years

Apply the Tree Replacement Policy to Lands subject to certain Planning Act applications (e.g. Draft Plan of Subdivision, Site Plan) as well as to Public lands impacted by third-party construction projects, such as Utilities.

Utilize the corporate Tree Protection Permit linked to Municipal Consents.

0-5 Years

Apply the Tree Replacement Policy to Lands subject to certain Planning Act applications (e.g. Draft Plan of Subdivision, Site Plan) as well as to Public lands impacted by third-party construction projects, such as Utilities.

5-10 Years

Conduct an Urban Tree Canopy (UTC) Change Analysis every 5 years using i-Tree Canopy.

Conduct a UTC Study every ten years using i-Tree Eco.

0-5 Years

Expand the public engagement component of Trees for Tomorrow Program with potential to create a Strong Roots Outreach Program.

Recruit at least 5,000 volunteer citizen members of the new Markham Strong Roots Outreach Program.



Targets/Objectives

Trees for Everyone

Facilitate Community-based Urban Forest Workshops

Develop incentives and programs for private tree planting and stewardship .

Cultivate a culture of collaboration towards the stewardship of Markham's urban forest

Address the staffing & resource needs to lead the implementation of the Urban Forest Management Plan.

City-wide Urban Tree Canopy (UTC)Target

Attain & Sustain 30% UTC through 2124.

Tree Equity

The Tree Equity Index helps prioritize strategies

Trees Thrive Through Community.

The Tree Equity Index guides tree planting.



How/Action Items

Discuss initiatives leveraging the Trees for Tomorrow Program to encourage planting 14, 200 trees per year on private lands. Explore options for community engagement.

The Tree Equity Index guides tree planting for Maximum Canopy Benefits Map guides short-term tree planting.

Create the supporting high-level Policy Framework for Markham's urban forest in Phase 2 of the Official Plan Review: The public tree is an essential component of the public road allowance.

Forestry added as a member of the Markham Utilities Coordinating Committee.

Urban Tree Canopy targets reflected in Phase 2 of Official Plan Review.

Review and update the Criteria & Indicators for Sustainable Forest Management Planning every 5 years.

Address neighbourhoods with higher Tree Equity Index scores.

Create a City of Markham Green Standard (MGS)

This new standard supports Markham's UTC Targets. Apply the MGS to the Development Application Process: Embed and front-load mandatory regulatory code for minimum standards & specifications for soil as detailed in Markham's revised Urban Design Manual and Streetscape Manual.

Expand the public engagement component of Trees for Tomorrow Program with potential to create a Strong Roots Outreach Program.

Recruit volunteer citizen members of the new Markham Strong Roots Outreach Program.

5-10 Years

0-5 Years

5-10 Years

0-5 Years

5-10 Years

Actions //

Action Plan Highlights 5-Year Operating Plan: 2026–2030 Budget

Total Proposed Investment is outlined in the Urban Forest Management Plan

Forestry Staffing Increases to address resource Gaps:
An analysis of current resources identifies significant gaps when compared to regional benchmarks. The following table details discrepancies in staffing levels and budget allocations for tree management:

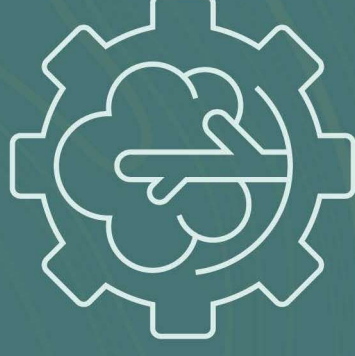
Full-time Arborists	
Markham - 6	9 Benchmark Average
ISA Certified Arborists	
Markham - 9	10 Benchmark Average
Annual Budget Per Street Tree	
Markham - \$14.84	\$24.53 Benchmark Average
Tree Pruning Cycle	
Markham - 8 Years	8.5 Benchmark Average



The Data:

The data indicates a need for additional resources, including hiring a second full-time Forestry inspector to minimize the backlog of resident requests and to determine what action is required. A contracted Arboricultural Inspector is required to be retained every two years to be responsible for Woodlot assessment/coordination across the whole City. The current Operations Parks Forestry Department complement of 1 Arborist Contract Crew should be increased to 3 to keep up with the volume of resident requests for tree work due to Markham's growing urban forest. The Operations Forestry Department requires an additional full-time Inspector and a Manager to provide dedicated strategic leadership collaborating with all city departments focusing on providing adequate space for tree to grow as well as moving our canopy closer to the 30% Council approved goal. Two full-time arborists are required to address growth in the Future Urban Area.

- + Enhanced Street Tree Maintenance Program designed to improve the growing conditions for young street trees.
- + Planning communities with less than 30% UTC will not advance our goals.
- + Maintain the fully funded 8-year Neighbourhood Block Street Tree Pruning Program.
- + Focus on Private Tree Planting & Community Engagement. Plant 14,600 trees/year on private lands via establishing a Private Tree Stewardship Program - the proposed Strong Roots Outreach Program.
- + Continue to plant an average of at least 4,000 trees/year on public lands
- + Adopt a Markham Green Standard in the Development Application Process for tree space: each tree has access to a minimum volume of 30m³ of uncompacted soil.



Cost-Benefit Ratio

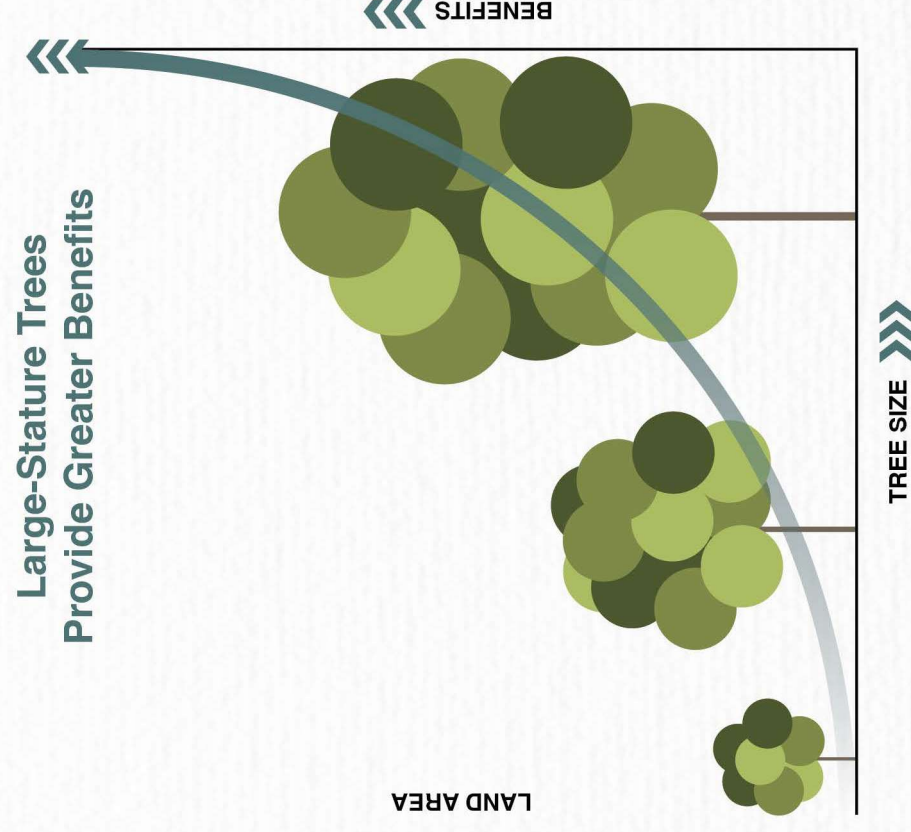
For every \$1.00 spent on city tree maintenance, \$1.35 - \$3.20 in benefits and cost savings each year are realized by the City.

Source: TD Economics (2014) *The City of Toronto*

A Case for Large-Stature Trees-Size counts!

Large-stature trees provide much more benefits than small-stature trees. How much more?

Scientific evidence shows that large-stature trees provide numerous benefits, including increased shade, cleaner air, improved stormwater management, enhanced energy conservation, and reduced heat island effects. Studies indicate these benefits are eight times greater than those of small-stature trees (defined as less than 40 cm DBH (20") at maturity). Large Stature trees are defined as trees over 76 cm DBH (30") at maturity; however, designing urban spaces to support healthy, large-stature trees is challenging, especially in densely populated areas. A common problem is the repeated failure to establish large-stature trees due to the poor integration of urban planning, civil engineering, landscape architecture, and urban forestry, which often results in tree premature deaths.





The Future //

What We Must Focus on from 2026 to 2030:

- + Endorse the Enhanced Management approach to reach 30% UTC by 2124
- + The total proposed investment is outlined in the UFMP
- + Support the City's Sustainability Metrics Program and Streetscape Manual
- + Undertake additional public engagement opportunities through the Trees for Tomorrow Program with the goal of supporting private tree planting
- + Recognize the importance and prioritize Tree Equity in new policy development and infrastructure planning



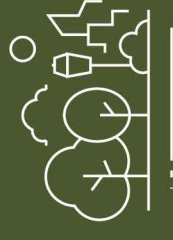
**Trees for
Everyone**



**Space
for Trees**



**People
Need Trees**



**Trees
Thrive Through
Community**

the future





Urban Forest Management Plan and Strategy

Council Presentation – Operations Parks Forestry

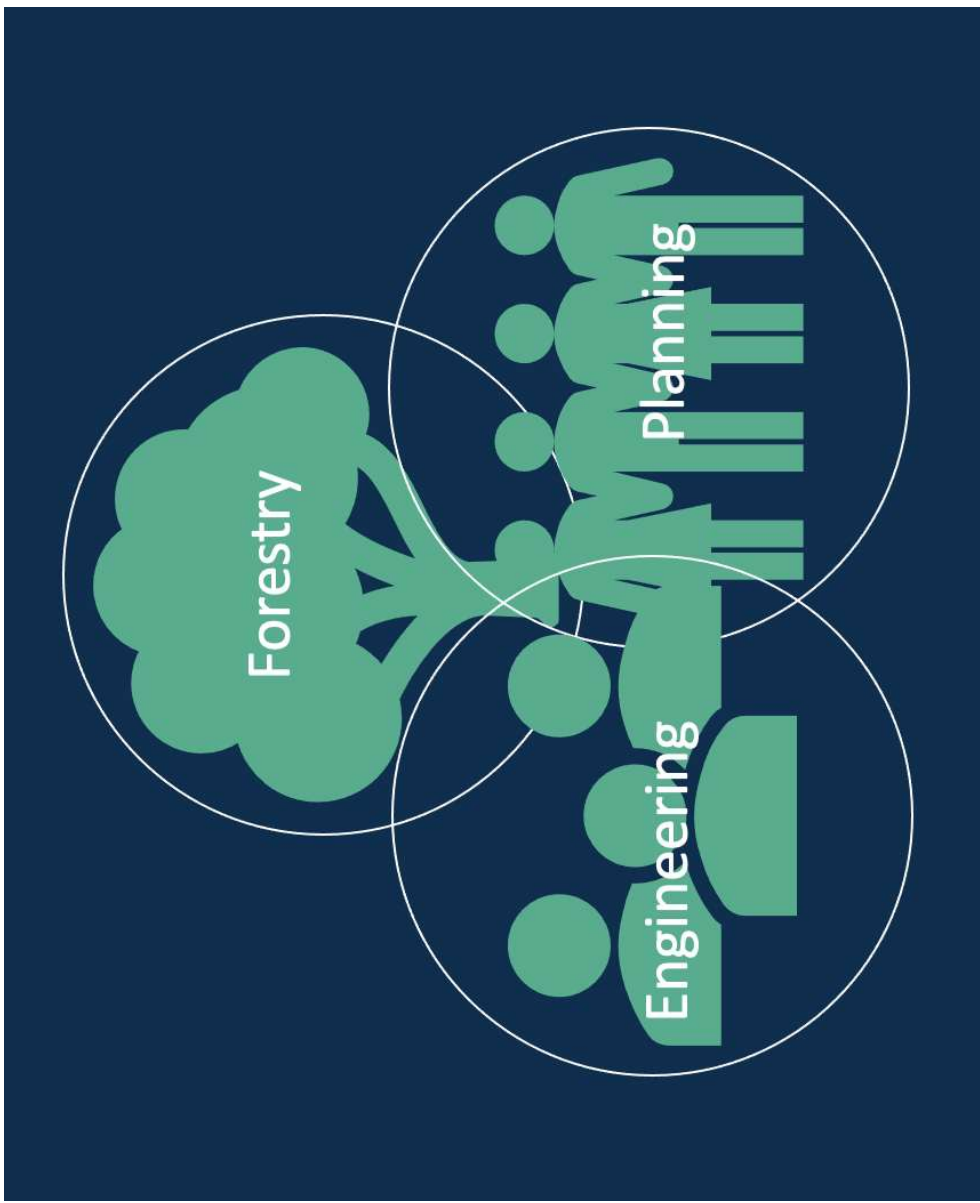
Date: June 16, 2026



The Urban Forestry Management Plan/Strategy

The Urban Forest Management Plan (UFMP) and Urban Forest Strategy (UFS) align with the City's Strategic Plan 2020-2026, underscoring the importance of urban forestry in combating climate change and promoting community well being.

While the UFMP provides a technical analysis of all aspects of the urban forest for city staff, the UFS details resident facing information and proactive strategies to address the complex challenges and unique opportunities associated with urban tree management within a rapidly urbanizing municipality.





Why Our Urban Forest Matters



Cool Cities

Trees reduce urban heat island effect, lowering temperatures and energy costs



Healthier Communities

Improved mental and physical health, reduced stress, cleaner air quality



Climate Resilience

Carbon storage, stormwater management, and climate change mitigation



Economic Benefits

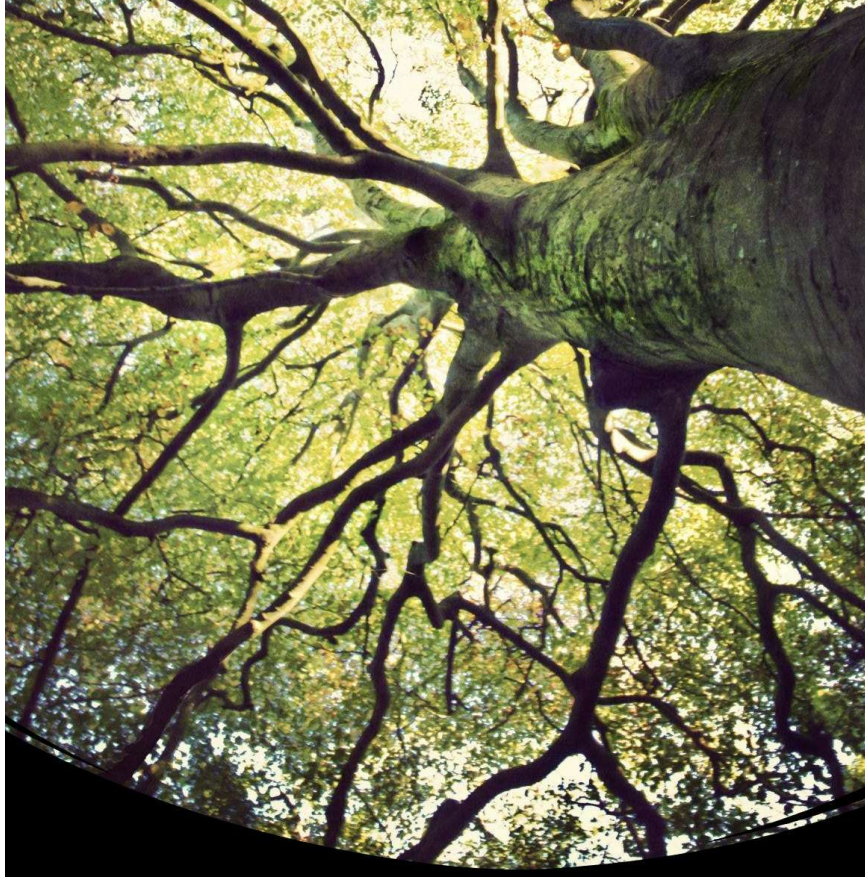
Increased property values, beautiful neighborhoods, reduced crime rates



TD

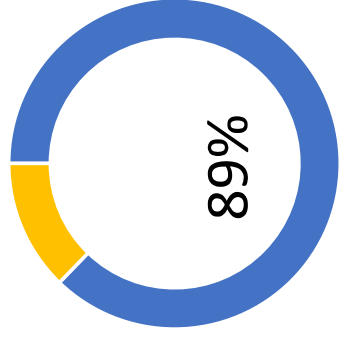
Cost-benefit ratio:

For every \$1.00
spent on city tree
maintenance, \$1.35 -
\$3.20 in *benefits* to
citizens.

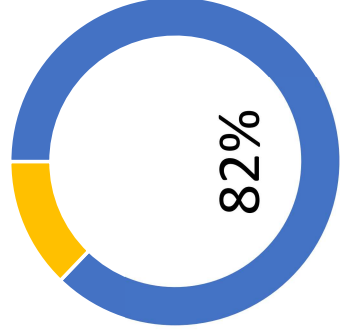




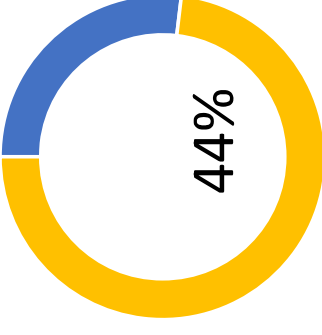
What We Heard: Community Voice



Residents are passionate about trees
They believe that they are critical for health
and well being



Residents are supportive of additional
funding to expand and grow our canopy
cover



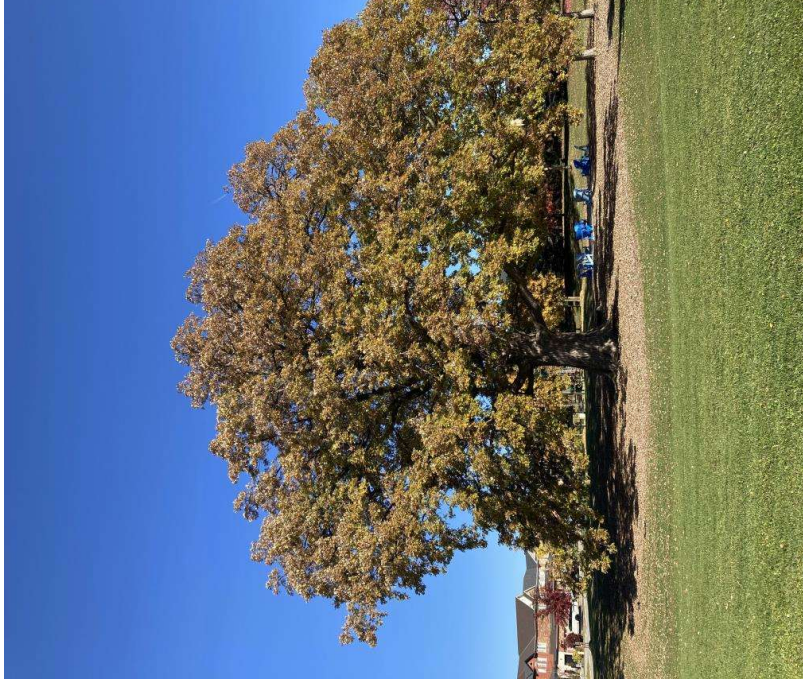
Residents are generally satisfied with
our current tree maintenance noting
we have room to improve

Residents support more trees being planted now, with urgency and timely action to achieve our greening goals.

Over 450 residents participated through surveys, open houses and workshops in 2024.

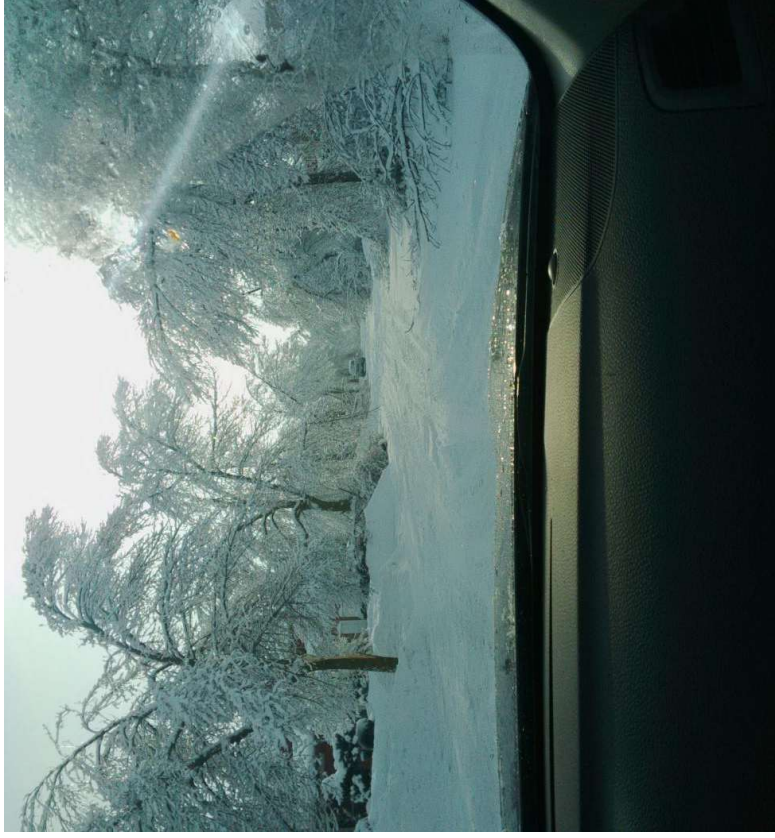


Focused tree maintenance grows our canopy



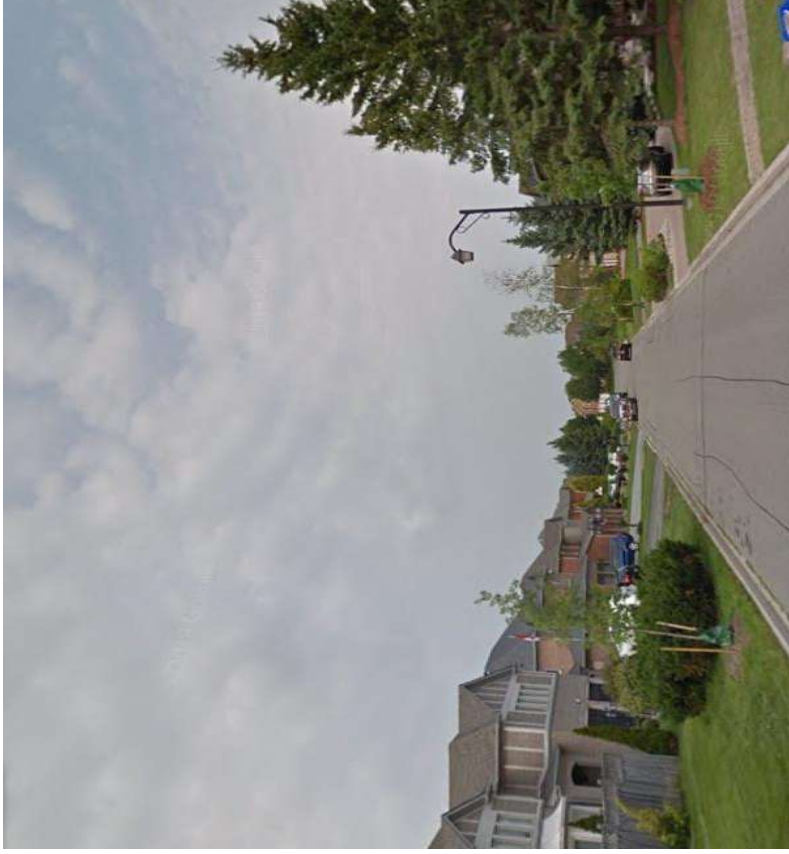
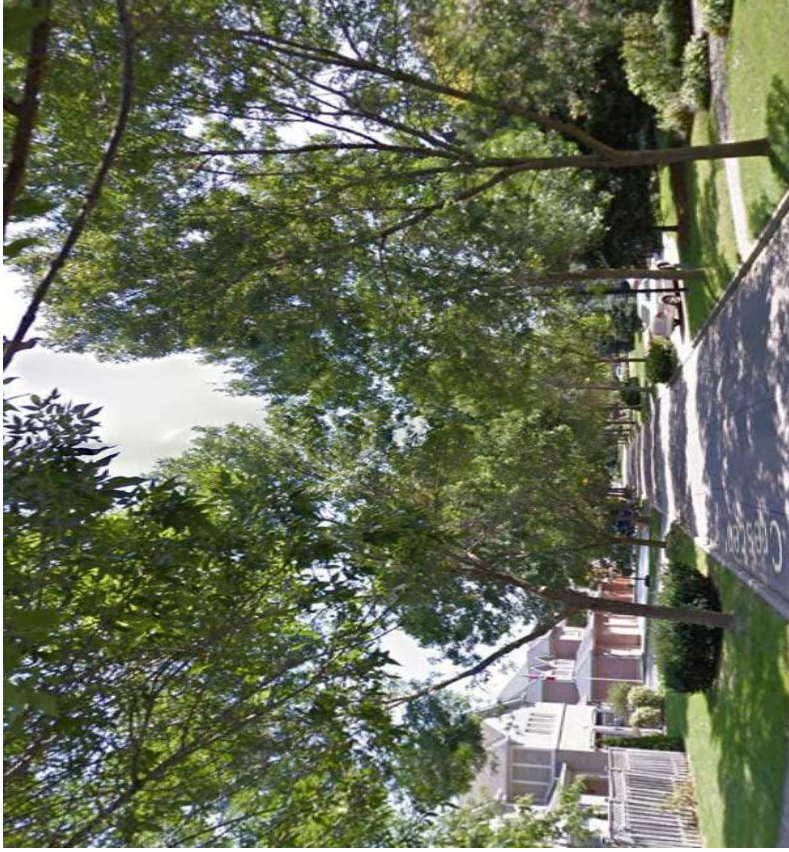


Weather events have changed Markham's landscape



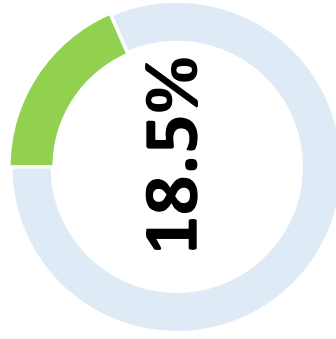


Emerald Ash Borer changed entire neighborhoods



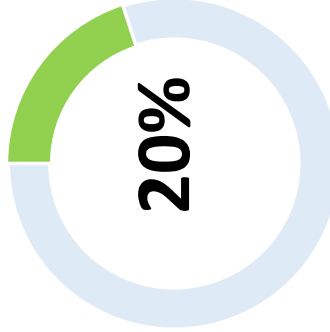


Markham's canopy benchmarked



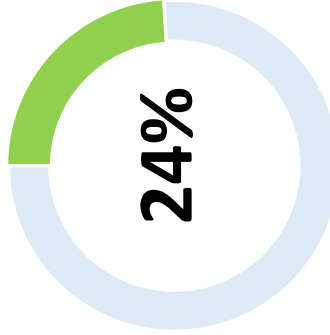
18.5%

City of Markham
* Urban Boundary
(30% by 2124)



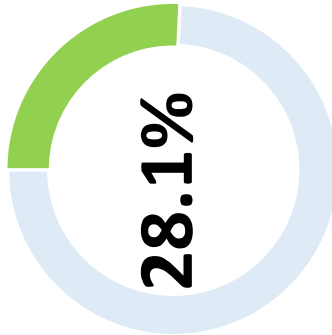
20%

City of Vaughan
(25% by 2051)



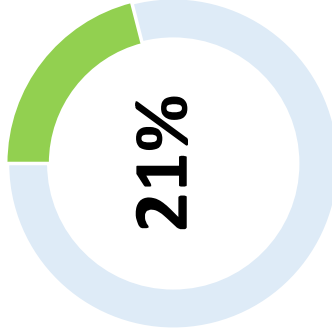
24%

City of London
(34% by 2065)



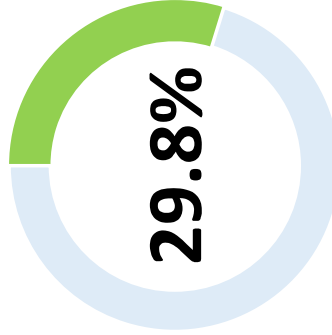
28.1%

Town of Newmarket
(35% by 2051)



21%

City of Hamilton
(40% by 2050)



29.8%

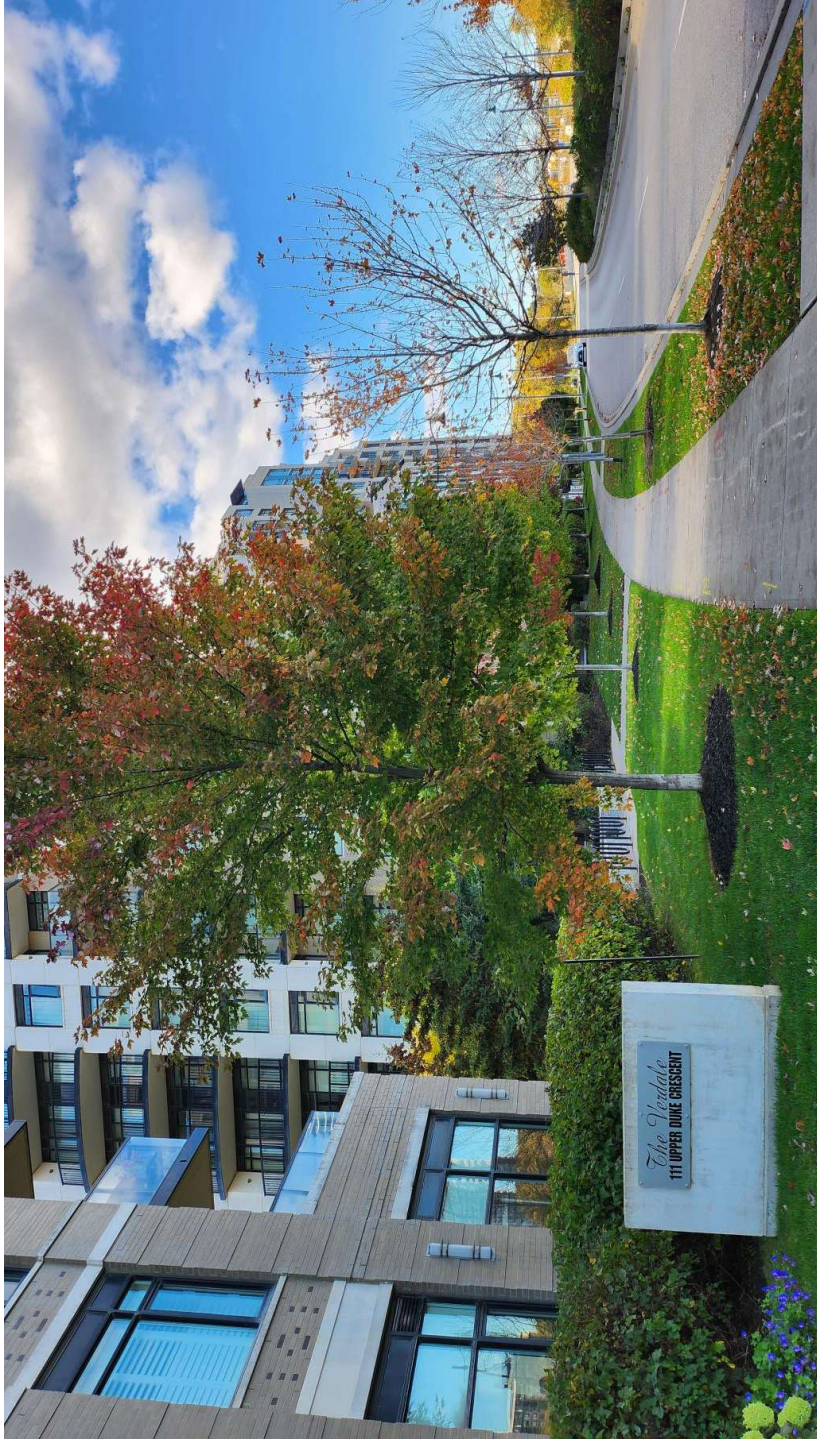
City of Richmond Hill
(30% by 2040)

Canopy gaps in development vs goals

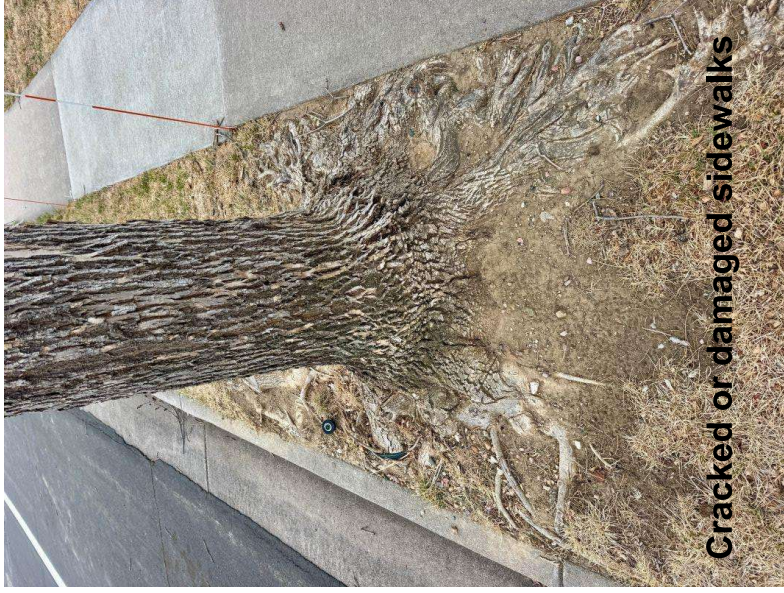




Increased soil volume increases tree size



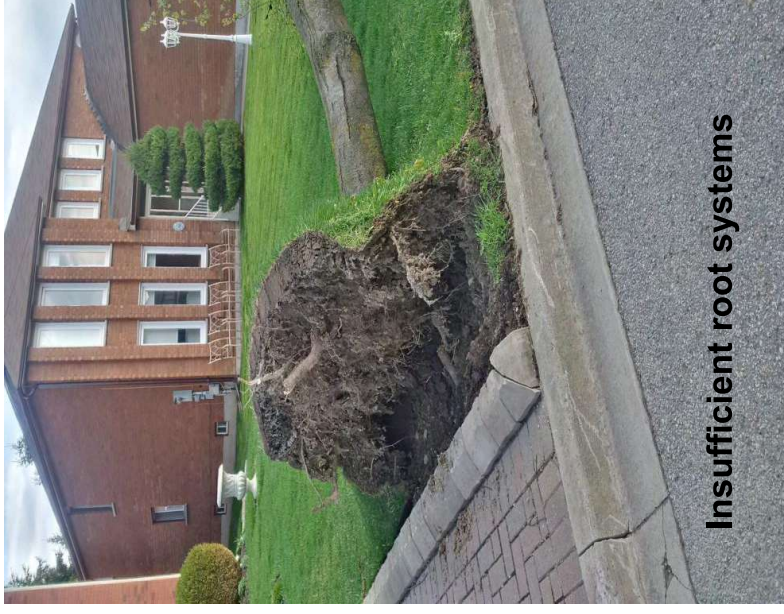
The hidden costs of inadequate soil volume



Cracked or damaged sidewalks



Root damage to driveways



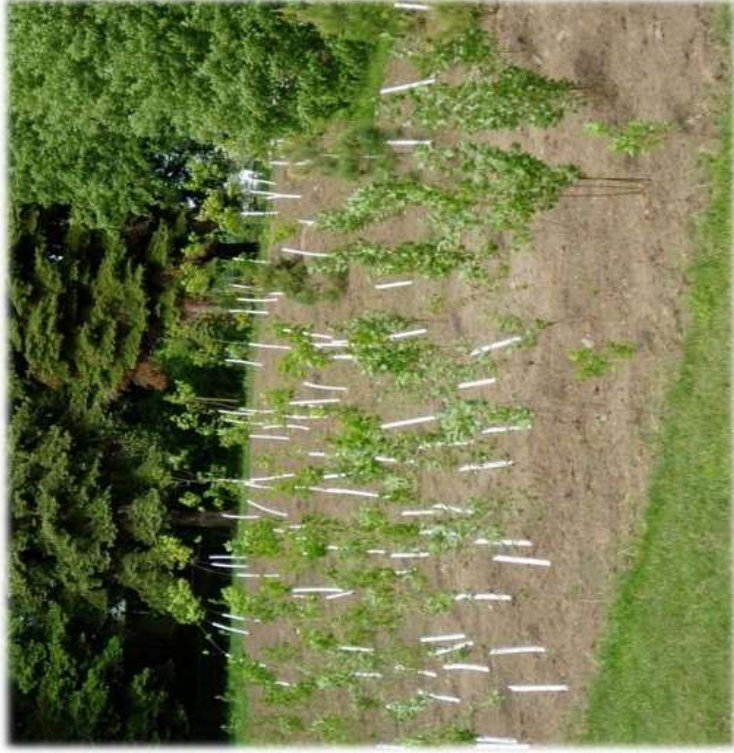
Insufficient root systems



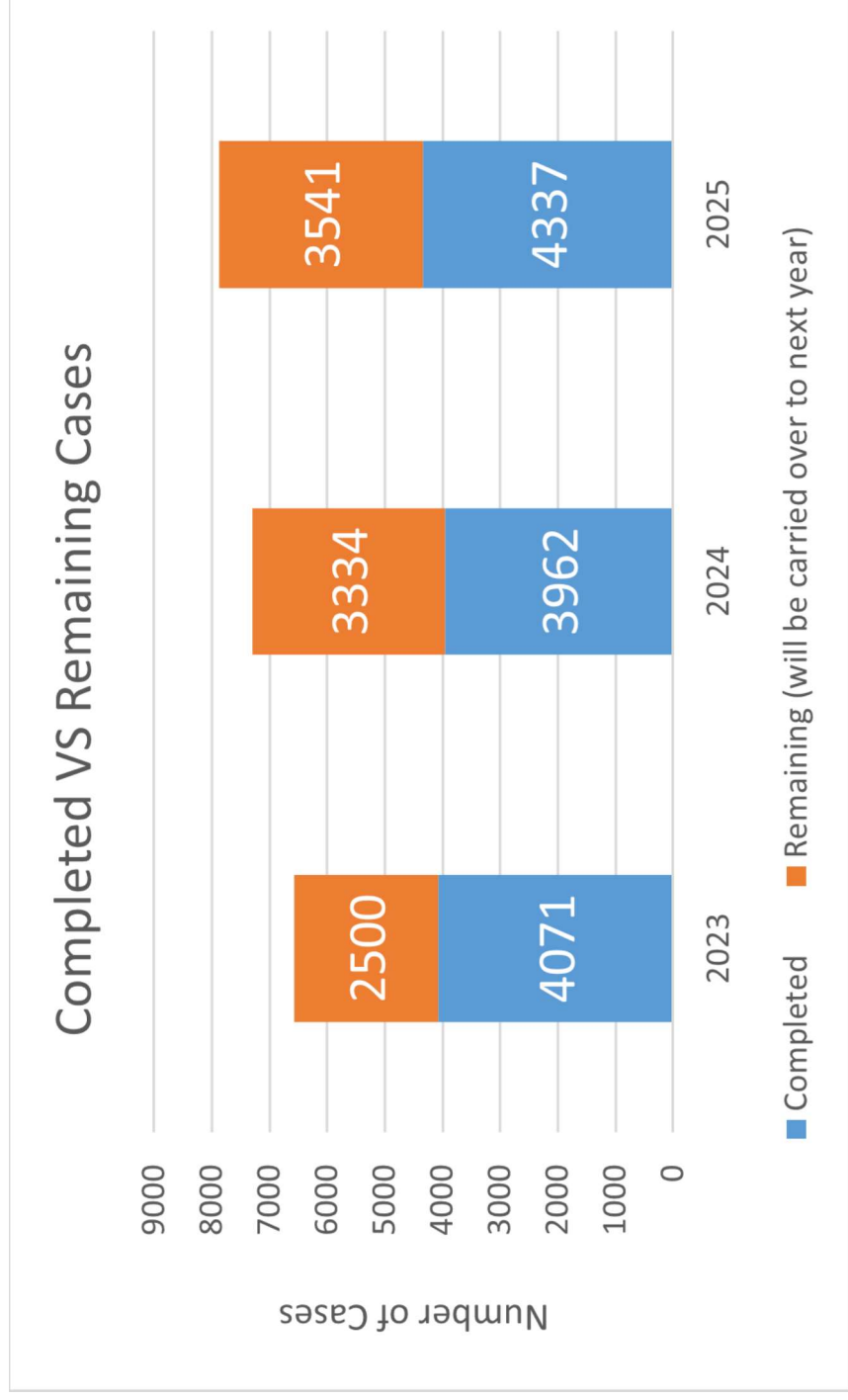
Trees for Tomorrow drives resident engagement



Trees for Tomorrow is Growing Woodland Cover Canopy



The trend of resident requests in Forestry



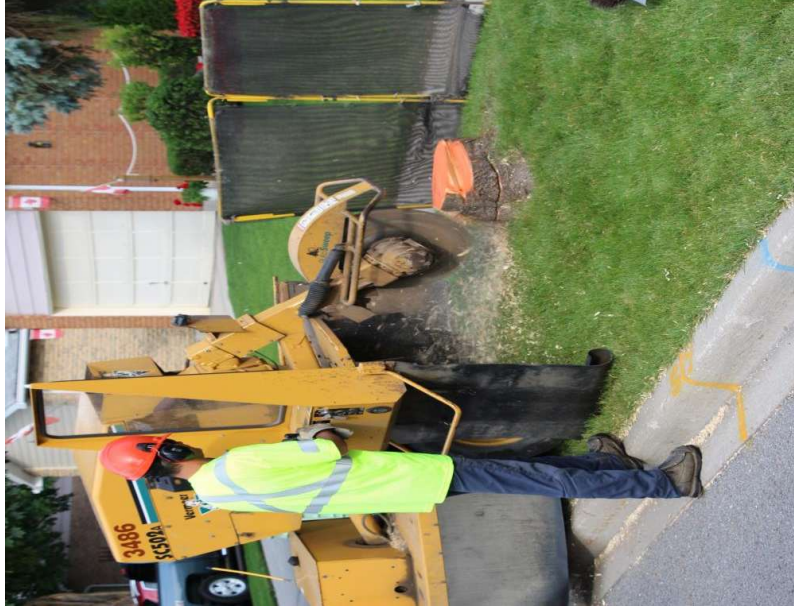
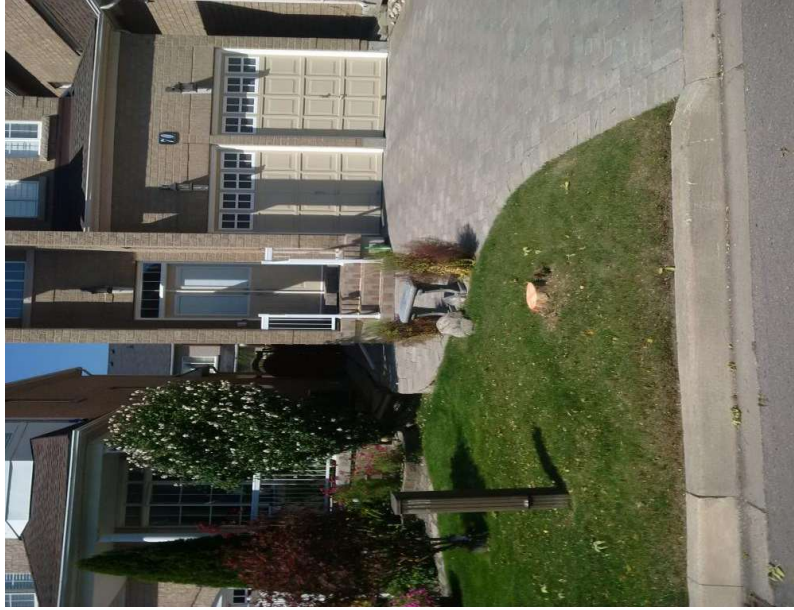


Inspection is key to determining resources required





Planting trees cost-effectively requires planning





Findings of the Urban Forestry Management Plan

- The city's canopy goal is not on track in the timeline currently in place
- Residents are very passionate about trees and call us more than 4,000 times annually
- Resources are required now to address and effectively manage resident requests
- Soil volume and space for trees to grow is far less than required
- Our current Block Pruning Program is cost effective and producing good results
- City tree maintenance outside of Block Pruning is largely reactive
- Tree density is not equal in every neighborhood, and we should try to address this
- Operations forestry has a good framework in place to build upon
- The current available resources are less than what is required to grow our urban forest



Recommendations from the UFMP

- Recognize trees as green infrastructure incorporating them in all aspects of city planning and design to ensure enough soil volume exists in the cross section to grow healthy trees
- Prioritize development plans to include enough trees to address the gap between our current canopy and our canopy goal
- Engage residents and businesses through the Trees for Tomorrow Program to increase participation and add to the canopy on private property
- Initiate a Young Tree maintenance program with a goal of growing healthy trees and reducing the amount of work required when they become large trees
- Continue the highly effective Block Tree Pruning program
- Explore equal canopy replacement for trees removed during infill or related projects
- Adopt and approve the recommended resources identified in the UFMP



Questions?

