



BRAMPTON:
URBAN FOREST MANAGEMENT PLAN

City of Brampton

Urban Forest
Management Plan
2022-2032

Land Acknowledgement

We respectfully acknowledge that the City of Brampton is located on treaty lands and traditional territory of the Mississaugas of the Credit and the Haudenosaunee, and traditional territory of the Huron-Wendat.

The City of Brampton is a contemporary home to many First Nations, Inuit and Metis people today. Brampton appreciates and respects the history and diversity of the land and is grateful to have the opportunity to work and meet in this territory.

The City of Brampton joins with First Nations, Inuit and Metis groups in partnership, friendship, and reconciliation.

Acknowledgements

This Urban Forest Management Plan was developed with contributions from many City of Brampton staff, external partners, and individual community members. Special thanks to the Mississaugas of the Credit First Nation and Six Nations of the Grand River for sharing important perspectives and providing invaluable contributions to the plan.

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Value Statement

Indigenous Peoples view the world in a particular way. Our Original Instructions when we were created tell us that as the youngest members of creation, it is our responsibility to protect and to care for our elder siblings, which is we must care for the natural world. We were taught, and still believe that we have a reciprocal relationship with all of creation, as they take care of us too. Our world view consists of the values, traditions, and stories from our ancestors, family, and community. This world view also helps us to identify ourselves as a unique peoples with a strong connection to the land.

A respectful relationship with Mother Earth is central to Haudenosaunee (Rotinonshión:ni) people and necessary for us to have healthy minds, bodies, and spirits. We were given the teachings of the Ganohonyohk (Thanksgiving Address) so we could know how to respect all the different parts of Mother Earth. The teachings remind us that she is where we came from and that we are part of her creation. In addition, they remind us that we are all connected and what is done to one is done to the whole.

We give thanks to the People in our lives for all that they bring to our lives.

We give thanks to our Mother, the Earth for all that she provides for the sustenance of our lives.

We turn to the Waters and we give thanks for the life sustaining attributes of water.

We acknowledge the Fish in the waters and give thanks to them for helping to keep the water clean.

The fish however, cannot do it alone. When we consider how human interference is impacting those fish and that water, we must stand up for them and ensure that they are no longer being impacted negatively by the daily activities of the human population.

We give thanks to the Plant people, the Food plants, the Medicine plants, and we acknowledge the strawberry as the leader of the plant people.

We are losing agricultural land at a phenomenal rate. Where do we look for the provision of food if our plants are destroyed?

We turn our attention to the Animals. We are very grateful for all that they provide for the sustenance of our lives. We acknowledge the Deer, the leader of the animals, who has been with us since time immemorial and who is still providing for us today.

We cannot continue to allow the removal and destruction of the natural habitat of the animals or other non-human beings. We cannot survive without them.

We now give thanks to the Trees. We are very grateful that the Trees provide oxygen for us to breathe, provide wood for our shelters and fires. We would especially like to acknowledge the Maple, the leader of the Tree people who has also provided for us since time immemorial and continues to provide for us today.

This land was once covered with rich, lush forests and the few that are remaining are being diminished daily. We need to save and enhance the forests that are remaining to ensure the sustenance of our own lives. We need the Tree people to survive.

We acknowledge the Birds with their beautiful plumage and songs. We turn our attention to the Eagle who is the leader of the bird people. The Eagle flies high in the sky above us, watching over us. We are so grateful that the Eagle has returned to watch over us again. We almost lost the Eagle to pollution. We need to learn the lesson from that near extinction and change our ways.

We now turn our attention to the Four Winds. We are grateful to hear their voices as they bring us fresh air to purify our surroundings.

We are grateful for our Grandfathers, the Thunder Beings. We celebrate their return in the spring as they bring with them the water that renews and cleanses the drabness of the receding winter.

We now give thanks to our Elder Brother the Sun. He is the source of all life and we are grateful that he continues to greet us each day.

Of course we also give thanks to our Grandmother Moon. She is the leader of all women and we honour and respect her.

We send greetings to the Stars, who along with Grandmother Moon lights the night sky so that we may find our way.

Climate Change is creating destructive weather anomalies that are not so anomalous any longer. The winds are getting stronger, the sun is hotter, and the skies are being polluted to such an extent that we can no longer see the stars. We need to take responsibility that it is human activity that is causing climate change and we need to change our ways to stop those effects.

When we forget how to live in harmony, the Enlightened Teachers guide us and lead us on the right path. We send greetings and thanks to them now.

We now turn our thoughts and our gratitude to the Creator for all of the gifts of Creation. Everything we need to sustain our lives has been provided by the Creator and we are so thankful for his wisdom and love.

If we have forgotten to give thanks for any part of creation we do so now. It is not our intent to leave anything out.

Indigenous people of Turtle Island created a treaty with one another. The Dish with One Spoon Treaty is an important treaty to understand. It was made as a measure to outline our responsibilities to share the land with one another. The basic tenets of the Dish with One Spoon Treaty are: take only what you need for sustenance, be sure to leave something in the dish for others, and keep the dish clean. This treaty was made not only between Indigenous Nations; it also included the natural environment, and it was like a promise to our non-human brothers and sisters.

Since settlers arrived on Turtle Island, forests have been decimated and waters have been poisoned. Animals have been destroyed to near extinction. It wasn't so long ago that our ancestors could collect clean water from the Grand River. Never did anyone have to wonder if it was safe to eat the fish they caught or to breathe the air around them.

When Europeans first arrived in North America, Indigenous Peoples helped them to survive. The Five Nations' original treaty with Dutch Settlers, the Two Row Wampum, indicated that the relationship between the European people and the Original people was to be not like the relationship between a father and a son, but like that of two brothers, each travelling along the river in separate vessels, a canoe for the Indigenous people and a boat for the settlers - neither steering the other's vessel.

In the time since that first treaty, settlers have paved over floodplains, excluded Indigenous people from harvesting on lands and in waters that we have always relied on, and have not taken care of Mother Earth in a way that would allow her to provide for us.

It is time for all humans, not just Indigenous people to begin to extend to the non-human people the same moral consideration that they would extend to themselves, recognising that all species, rivers, ecosystems, have a right to exist free of pollution and unnecessary development and that their existence continues to sustain us. We must sustain them in return.

Mother Earth is a living breathing entity and every building, every highway, every source of her destruction is permanent destruction. She is fighting for her life and she will continue to fight back until we change our ways and remember that we are all connected. What is done to one is done to the whole.

Another responsibility that we have according to our Original Instructions is to use a good mind in making decisions and to think of the effect that our decisions and actions have on the generations yet to come. We must ask ourselves everyday, "How is what I am doing impacting the earth for the use of the next seven generations into the future?" "Is what I am doing leaving the world in a better place than what it was when I was born?" We must consider whether we will be proud of what we are leaving our future generations and if the answer is no, then we must reconsider what we are doing, why we are doing it, how we are doing it and can we do better.

– Six Nations of the Grand River

OUR URBAN FOREST VISION

The **urban forest** is a keystone component of a healthy, sustainable, equitable, and resilient community.

Our policies and infrastructure are designed to support and protect trees, forests, and healthy ecosystems in the urban environment.

The City of Brampton recognizes that the urban forest is essential to healthy neighbourhoods, clean air and water, and natural ecosystems, while creating opportunities for recreation, education, and a prosperous economy.





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INTRODUCTION

Incorporated as a village in 1853, the City of Brampton is now Ontario's fourth-largest city by population. The administrative centre of Peel Region, Brampton is a fast-growing and culturally diverse municipality, and is projected to be home to some 812,000 residents by 2031 (up from 594,000 in 2016).

Though much of Brampton is now heavily urbanized, Brampton's urban forest is a vital component of the city's landscape, and essential to maintaining Brampton's urban and environmental systems. Throughout history, Brampton's trees and forests have provided for the many people who have settled in the area, both in the past and present.

People have inhabited the area that is now Brampton for millennia; archaeological evidence of camps and villages along the Credit and Humber Rivers dates from about 8000 B.C. The area has long been the home of Anishnabewaki, Attiwoonderonk (Neutral), Haudenosaunee, Mississauga, and Huron-Wendat peoples.

In early 1800s, the first large influx of Europeans settled in Brampton and, over time, much of the area's forest cover was cleared for agriculture and settlement. By the 1950s, automobile-dependent development shaped Brampton into "Canada's first satellite city".

The suburban character of development has largely continued through to the present day, albeit with increasing recognition of the need for more compact, higher-density, and pedestrian- and transit-friendly development in both new and infill neighbourhoods.

Although much of Brampton is now developed, natural forest cover is found in the watercourses and valleylands that link the city with the Oak Ridges Moraine to the north and Lake Ontario to the south. Throughout Brampton's recent history, trees have played an important role in shading and beautifying neighbourhoods and commercial districts.

More recently, the urban forest has gained recognition as vital municipal green infrastructure, and awareness is growing about the valuable environmental, economic, and societal and health services provided by urban trees.

As Brampton continues to grow and develop, and as climate change effects become increasingly pronounced, these urban forest services will only become more important for the city's residents and businesses, and more threatened. Fulfilling Brampton's 2040 Vision—Living the Mosaic will therefore require strategic and collaborative efforts to maintain, protect, and enhance the city's urban forest, and to engage residents and other partners in its stewardship.

The urban forest plan

This document is Brampton's first Urban Forest Management Plan (UFMP). The UFMP is a high-level, strategic plan that establishes a vision, guiding principles, goal, objectives, and measurable targets for Brampton's urban forest for the next ten years. The UFMP presents priority-based actions to be implemented by the City and its partners in pursuit of Brampton's vision for its urban forest. Although much of the plan focuses on the City-owned portion of the urban forest, trees on private lands are also considered.

Development of the UFMP is an outcome of the City's Grow Green Environmental Master Plan and the Brampton 2040 Vision—Living the Mosaic, and supports the Community Energy and Emissions Reduction Plan (CEERP). The UFMP was developed in consultation with City staff, a broad range of external partners, and the community, and is supported by technical documents that include a comprehensive analysis of all aspects of urban forest management in Brampton.

Section 4.6.8 of Brampton's Official Plan (2006) defines the urban forest as *"the mix of the remnants of native forest cover and planted trees and vegetation on all private and public lands in and around the built-up areas."* Brampton's UFMP builds on this definition, with specific focus on trees as the primary vegetation type that makes up the urban forest.

Brampton's urban forest

Brampton's urban forest includes trees and their growing environments on all public and private lands in the city. The urban forest includes City- and Region of Peel-owned street, park and facility trees, trees in valleys and woodlands, and trees on residential properties and commercial, industrial, and institutional lands.

The City of Brampton and its partners, including the Credit Valley Conservation Authority (CVC), the Toronto and Region Conservation Authority (TRCA), the Region of Peel, and others, have collected a wide range of information about Brampton's urban forest. These urban forest data help build an understanding of the structure and function of the urban forest and inform the establishment of long-term and locally appropriate urban forest goals and targets.

Key sources of information about Brampton's urban forest include:

- Street tree inventory (*in progress*)
- Brampton Natural Areas Inventory (BNAI), 2007-2013
- Natural Heritage System mapping, 2014
- Urban Tree Canopy (UTC) study, 2017 (*2015 data*)
- i-Tree Eco urban forest study, 2011 (*2008 data*)
- Peel Tree Planting Prioritization Tool, 2013

Trees and urban forest canopy cover

In 2017, the Region of Peel undertook a study of urban forest canopy cover—the land area covered by trees when viewed from above. The study found that, in 2015, Brampton’s canopy cover was approximately 18%, or 4,902 hectares. This is lower than the average (25%) among selected communities in and around the Greater Toronto and Hamilton Area (GTHA), likely owing to the combination of agricultural greenfield lands and newly developed communities—still populated by relatively young and small trees—across the landscape.

A 2011 study undertaken by the Region of Peel, in partnership with local Conservation Authorities and using the i-Tree Eco urban forest assessment model, found that Brampton’s urban forest is composed of approximately 3.6 million trees and has an asset replacement value of nearly \$780 million.

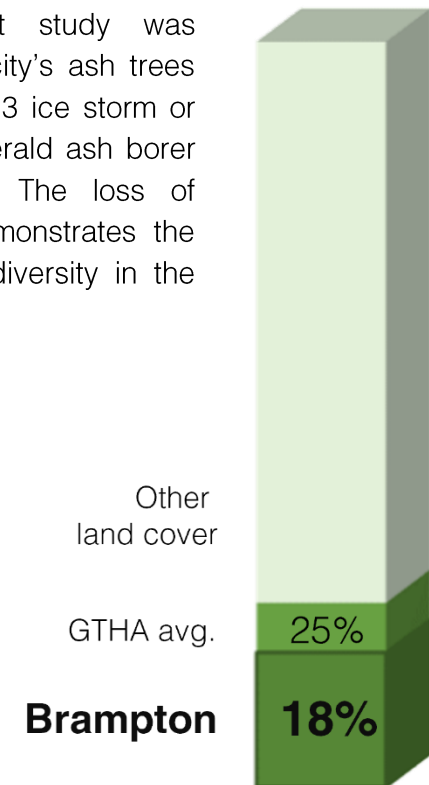
Tree diversity

Tree diversity is an important factor in urban forest resilience—a more diverse urban forest is better able to withstand external stressors such as pests, diseases, or drought, as risk is spread across a wider range of tree species with different biological tolerances. Data availability about urban forest diversity in Brampton is currently limited, although the City is working to complete its street tree inventory and will expand the inventory to parks in the future.

Preliminary data suggest that tree diversity in Brampton’s urban forest is relatively low, and that the street tree population is dominated by just three species—Norway maple (20% of trees), littleleaf linden (12%), and honey locust (10%). The 2011 urban forest study also found relatively low tree diversity across the entire urban forest, with maple, ash, and spruce trees comprising nearly one-half of total leaf area.

Since the urban forest study was conducted, many of the city’s ash trees were destroyed in the 2013 ice storm or have been lost to the emerald ash borer (EAB) beetle infestation. The loss of Brampton’s ash trees demonstrates the need for increased tree diversity in the urban forest of the future.

Right: Brampton’s urban forest canopy cover (18%) is currently lower than the average across a number of cities in and around the GTHA (±25%).





Tree size and age

Large trees provide significantly more urban forest services than small trees—for example, the 2011 Brampton urban forest study found that large trees remove approximately 10 times as much air pollution and store 75 times more carbon than small trees. Large trees also provide more shade, wildlife habitat, and other urban forest services.

The 2011 study also found that the proportion of small trees in Brampton's urban forest is much higher than recommended. A significant contributing factor to this tree and age size distribution may be the relatively recent development of many greenfield neighbourhoods in the city, which are still largely populated by young trees which have not yet grown to large stature and maturity.

These findings highlight the need to ensure that high-quality tree growing environments are designed and built in the early stages of community planning, and the importance of maintaining and protecting existing mature, healthy trees.

Tree health and condition

The 2011 urban forest study estimated that 47% of trees in Brampton were in good or excellent condition. In recent years, Brampton's urban forest has suffered significant damage due to the combined effects of the emerald ash borer (EAB) infestation and the 2013 ice storm. Healthier trees generally provide more urban forest services, as they usually have more, larger, and healthier leaves. As such, the City, its partners, and the community should strive to maintain and improve the health and condition of trees in Brampton's urban forest.

Urban forest assessment

To inform the UFMP, Brampton's urban forest and its management were assessed using the Vibrant Cities Lab Community Assessment and Goal-Setting Toolⁱ. This assessment uses 28 different urban forestry criteria, which were grouped according to UFMP strategic goals (see page 16). Each criterion contains four detailed performance indicators that correspond to a rating on a scale from Low to Optimal. The analysis found that Brampton's urban forest performance generally ranges between Fair and Good, with a few Low indicators. As summary of the assessment findings is presented in the table on the right.

In addition to assessing Brampton's current status, increased performance levels for each criterion have been established as urban forestry targets, to be achieved through implementation of UFMP actions. The City will track its progress towards these targets through urban forest monitoring and the UFMP review process (see Actions 1.5 and 1.6) to ensure it remains on course towards achieving target performance levels.

Use of this assessment and goal-setting tool allowed current performance levels and gaps to be easily identified and helped to inform the development of UFMP action items to improve performance.

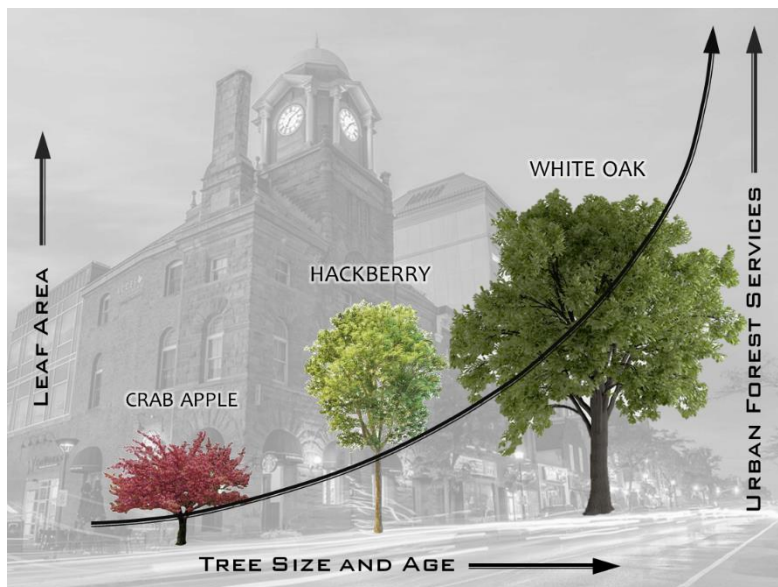
ⁱ - <https://www.vibrantcitieslab.com/assessment-tool/>

UFMP Goals and Criteria		Status	Target
Understand			
1	Canopy cover: no data, no action	Good	Good
2	Inventory	Fair	Optimal
3	Assessment methodology	Fair	Good
4	Assessment of publicly owned trees	Low	Optimal
5	Assessment of trees on private property	Good	Optimal
6	Relative performance index by species	Low	TBD
7	Use of native vegetation	Fair	Good
Maintain			
8	Assessment of publicly owned natural areas	Fair	Optimal
9	Align municipal departments	Good	Good
10	All utilities work with municipality, employ best management practices	Good	Optimal
11	Develop urban forest management plan	Low	Optimal
12	Cooperative planning with other municipalities	Good	Optimal
13	Forestry plan integrated into other municipal plans	TBD	Optimal
14	Urban forestry program capacity (applies to in-house and contracted staff)	Good	Optimal
15	Municipality-wide urban forestry funding	Good	Optimal
16	Management of publicly owned natural areas	Fair	Optimal
17	Monitoring	Fair	Good
18	Tree risk management	Fair	Optimal
19	Urban wood and waste utilization	Fair	Optimal
Grow			
20	Environmental equity	Fair	Optimal
21	Growing site suitability	Fair	Optimal
22	Tree establishment and maintenance	Fair	Optimal
Protect			
23	Policies that foster good urban forestry on private lands	Good	Optimal
24	Tree protection policy and enforcement	Fair	Optimal
Engage			
25	Engage residents in planning and implementation	Fair	Optimal
26	Trees acknowledged as vital community resource	Fair	Optimal
27	Engage large private landowners and institutions	Low	Good
28	Green industry embraces goals, high standards	Low	Fair

Trees make Brampton a livable community

Brampton's urban forest is a major part of the city's green infrastructure—the living systems that provide the valuable environmental, economic, and societal and health services that help to make Brampton a healthy and livable community.

The urban forest is a unique type of infrastructure because, unlike other municipal assets, its function and value increase as the assets age—older and larger trees provide more services than smaller trees because they have greater leaf area (see graphic, below). This highlights the importance of planning for and supporting the growth of large-statured and long-lived trees across Brampton.



The 2017 Peel Region urban tree canopy assessment estimated that trees in Brampton's urban forest provide approximately \$9.5 million in air pollution removal and carbon sequestration services every year.

Air pollution removal effects are greatest for ozone (O_3), with over 277 tonnes removed per year. The urban forest also removes over 20 tonnes of $PM_{2.5}$ —among the most hazardous air pollutants—annually.

The 2011 urban forest study estimated that Brampton's urban forest removes an amount of PM_{10} air pollutant emissions equivalent to that produced by over 170,000 cars annually.

A 2009 study by Natural Resources Canada found that Brampton's suburban areas recorded among the highest urban heat island effects in the GTA. This can be reduced by maintaining, protecting, and growing the urban forest.

Environmental



Reducing air pollution and improving air quality



Cooling the air and reducing the urban heat island effect



Protecting soils against erosion by wind and rain



Storing and sequestering atmospheric carbon



Reducing flooding and protecting water quality



Providing wildlife habitat and promoting ecosystem connectivity

Just some of the vital services provided by Brampton's urban forest are listed below.

Societal and health



Improving physical health by encouraging outdoor recreation, reducing UV exposure, and improving air quality



Improving mental health and cognitive functioning by reducing stress through nature connection



Increasing social cohesion and strengthening communities by encouraging people to come together in green and shaded spaces

Economic



Increasing residential and commercial property values by making landscapes more desirable



Promoting local economic activity by making spaces more inviting



Reducing energy costs by reducing demand



Reducing healthcare costs by protecting physical health



Reducing maintenance and replacement costs by shading infrastructure

Facing the challenges

Like urban forests everywhere, Brampton's urban forest faces considerable challenges. Brampton's trees will face even greater challenges in the future as the city continues to grow and as climate change effects become more significant. These challenges and threats can be addressed through proactive and strategic planning, a sustained commitment to invest in urban forest establishment and maintenance, and effective partnerships that support efforts to sustain, protect, and enhance the urban forest on public and private lands.

Difficult growing conditions

Brampton is situated in one of the fastest-growing population centres in North America, and will absorb much of the Greater Golden Horseshoe's projected population growth in both new greenfield communities and through intensification in existing built-up areas. As the city grows, the increase in roads, sidewalks, parking lots, and other paved surfaces, combined with below-ground infrastructure and construction impacts, will reduce the quality and availability of growing space for trees. Existing growing sites in recently built communities may also have insufficient soil volumes, compacted soils, and other conditions that will reduce tree size and lifespans.

Policy-based and design solutions can improve growing conditions for urban trees. Success will require a collaborative and multi-disciplinary approach, beginning from the earliest stages of the planning process and extending through to on-site implementation and long-term maintenance and monitoring.





Pests, diseases, and invasive species

Invasive species are organisms whose presence may adversely affect the environment, economy, or society. Invasive plants such as Norway maple or common buckthorn—which are both abundant in Brampton—can outcompete indigenous species in natural areas and degrade ecosystems. Insect pests can also cause widespread and lasting damage; for example, emerald ash borer infestation has already had a profound effect upon many of Brampton’s streetscapes, parks, and natural areas. Other insects, such as Asian longhorned beetle or LDD moth, also potentially threaten much of Brampton’s urban forest. Tree pathogens (diseases) such as oak wilt, Dutch elm disease, and many others, can also impact single trees or entire populations.

Partnerships and strategies to proactively identify, monitor, and mitigate urban forest pests, diseases, and invasive species can help limit their adverse impacts. Additionally, building urban forest resilience through diversity and maintaining tree and ecosystem health will reduce Brampton’s susceptibility to these threats and buffer the effects of future infestations.

Limited awareness and engagement

Private landowners own the majority of Brampton’s urban forest, and over one-third of Brampton’s tree canopy is found on residential lands alone. However, some landowners may not recognize the full value of their trees or know how to properly care for them. Without broader community awareness and engagement, trees on private lands may decline in health or even become hosts and dispersal sites for damaging pests and diseases. Educating tree owners and other community members about the value of the urban forest and supporting their efforts to plant, care for, and protect trees is challenging, but necessary, in a large city like Brampton.

The City has already implemented several successful urban forest outreach and stewardship initiatives. However, a broader, coordinated, and engaging outreach and education program will be needed to overcome the challenges of limited awareness and engagement, and to leverage existing opportunities such as an active environmental community, engaged and tech-savvy youth, and successful relationships with other urban forest partners.

Urban forest structure, information, and management

The structural characteristics of Brampton's urban forest, such as low tree diversity and an overabundance of young and small trees, limit the urban forest's functional capacity to provide diverse and valuable environmental, economic, and societal and health services. As demonstrated by the devastating combined impacts of EAB infestation and the 2013 ice storm, an urban forest lacking in diversity is also highly susceptible to unforeseen external stressors.

The challenges posed by the structural characteristics of Brampton's urban forest are more difficult to address without up-to-date and accurate information about the resource. Since the last comprehensive urban forest study was completed over a decade ago, significant changes have taken place in both the city's urban fabric and its urban forest. Brampton has also not yet completed its street tree inventory. As such, planning and operational decisions have largely been made without the benefit of this critical tool, and some of Brampton's urban forest has experienced a lack of proactive and strategic management over time.

The City has recognized these knowledge gaps and will continue to build its understanding of urban forest structure and function. Additionally, many City policies and practices have evolved to reflect an increased awareness of the value of the urban forest, and demonstrate Brampton's commitment to protecting existing trees and more successfully integrating trees into new communities.

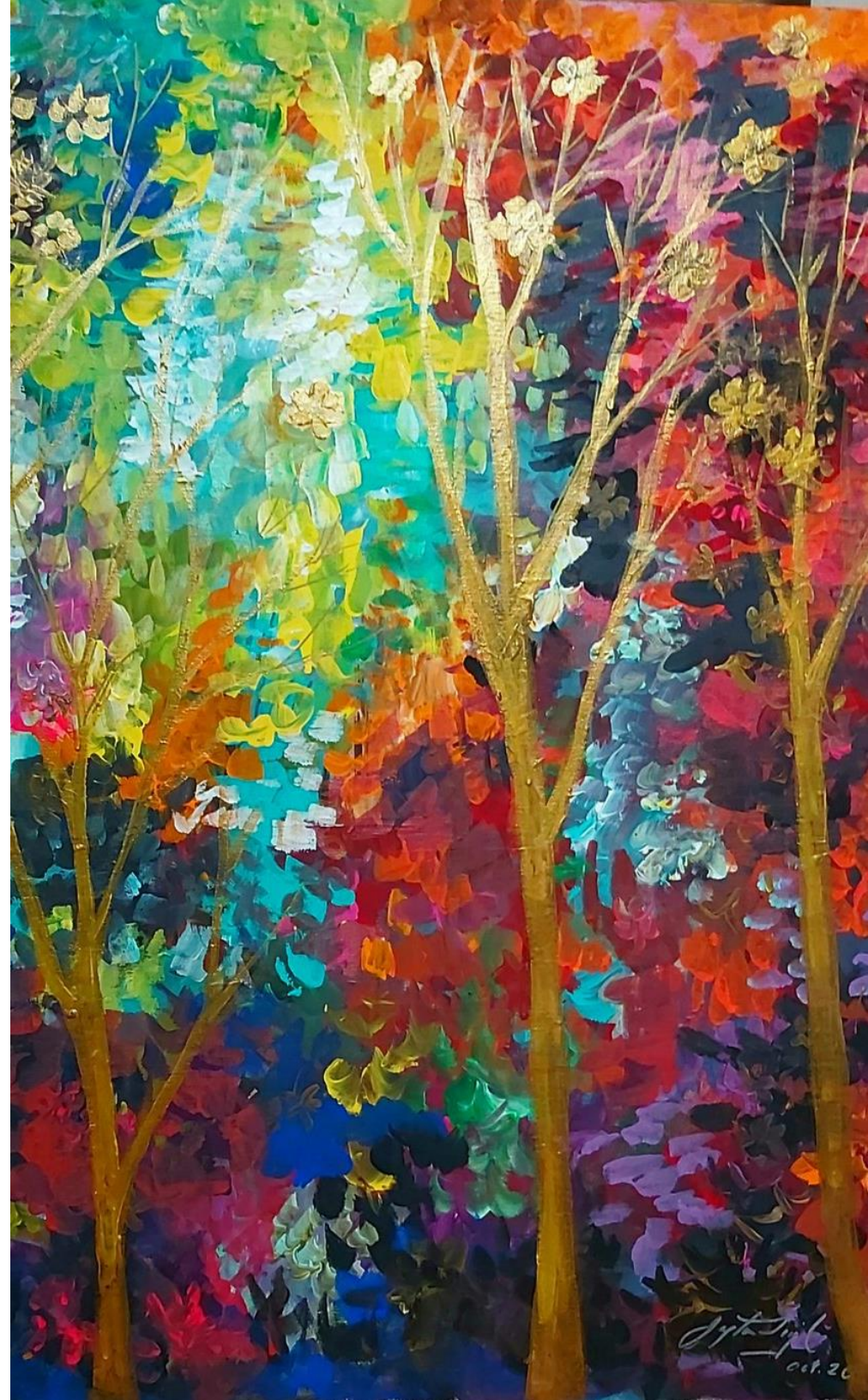


Climate change

In June 2019, Brampton City Council declared a climate emergency and, in September 2020, endorsed the Community Energy and Emission Reduction Plan (CEERP). These actions recognize that climate change will have a profound impact on Brampton and across the world. Climatic changes projected by the Region of Peel, such as increased summer temperatures and increasingly frequent and severe droughts, will exacerbate the already challenging conditions experienced by urban trees, while milder winters may promote the spread of invasive species and pathogens.

Maintaining and expanding the urban forest can play a role in climate change mitigation efforts—for example, well-placed trees can lower the demand for seasonal heating and cooling, thus reducing energy use and greenhouse gas emissions. Healthy and growing urban trees also sequester and store atmospheric carbon, and continue to store it in their wood in perpetuity if converted into durable wood products. Urban forests are also vital climate change adaptation tools for cities, including Brampton. By providing services such as shading, microclimate cooling, and stormwater and air pollutant capture, urban forests will make climate change-affected cities safer, healthier, and more comfortable places to live as global temperatures rise and climate patterns change.

A wide range of actions will need to be implemented by the City and its partners to help Brampton's urban forest adapt to the adverse effects of climate change and, in turn, help the community adapt. Climate change may also provide some opportunities for the urban forest, such as enabling the successful long-term establishment of tree species currently better suited to warmer or drier climates such as the southern regions of the Carolinian forest zone. As climate change unfolds in new and unpredictable ways, these challenges and opportunities will need to be considered in all aspects of urban forest management and planning.



A PLAN MADE FOR BRAMPTON

Developing Brampton's UFMP required in-depth research and analysis of the current conditions and context in the city, consideration of relevant and applicable urban forestry best practices and precedents, and input from a broad cross-section of City staff, urban forest partners, and community residents. Participant feedback is summarized in a UFMP engagement summary report.

To encourage engagement in the UFMP and the urban forest, the City hosted an urban forest art contest. Over 250 original submissions were received, and many are showcased in this plan.

Participants in the UFMP engagement process were first approached in Fall 2020 to provide input into the vision for the urban forest, identify and prioritize urban forest challenges, and reflect on higher-level preliminary directions. Participants expressed overwhelming support for the City's One Million Trees Program and strong support for increased allocation of municipal resources for urban forest management. Many participants also expressed a desire for the City to increase tree planting in parks and natural areas, along neighbourhood streets, and around community buildings and facilities.

The second phase of engagement was undertaken in March 2022 and asked participants to provide feedback on this UFMP, including the urban forest vision and action items.





THE STRATEGIC FRAMEWORK

The strategic framework for the Brampton UFMP establishes the foundation for the future of urban forest management in Brampton. The framework outlines the long-term vision for Brampton's urban forest; seven guiding principles for urban forest management; five strategic goals and related objectives, and a process for monitoring the urban forest and tracking progress towards six measurable targets.

Vision

The UFMP vision is an aspirational statement that represents the desired state of Brampton's urban forest by the end of the UFMP planning horizon. The vision will be realized through adherence to the guiding principles, pursuit of the strategic goals and objectives, implementation of recommended actions, and monitoring and adaptive management. The UFMP will be considered successful if, when read in 2042, the vision statement accurately reflects the state of Brampton's urban forest.

Brampton's urban forest vision

The urban forest is a keystone component of a healthy, sustainable, equitable, and resilient community.

Our policies and infrastructure are designed to support and protect trees, forests, and healthy ecosystems in the urban environment.

The City of Brampton recognizes that the urban forest is essential to healthy neighbourhoods, clean air and water, and natural ecosystems, while creating opportunities for recreation, education, and a prosperous economy.

Guiding principles

Seven guiding principles reflect the values of the City of Brampton and the broader community as they relate to the urban forest and its management. These principles have shaped the development of the UFMP and will guide the decisions and actions undertaken by the City and its partners in urban forest management throughout the UFMP's ten-year planning horizon.

For brevity, only the brief principle statements are presented in this document. The complete guiding principles are presented in the UFMP technical supporting documents.



Principle 1: Recognition

The urban forest must be recognized across departments and throughout policies and practices as an essential municipal infrastructure asset, and should be considered as important to the health and livability of Brampton as other built infrastructure.

Principle 2: Collaboration and engagement

Realizing Brampton's vision for its urban forest will require the engaged participation of a diverse group of partners, working in collaboration to achieve shared goals and support each others' efforts.

Principle 3: More than planting

Sustainable urban forest management takes much more than planting trees – it encompasses a wide range of actions by many different partners.

Principle 4: Preservation over replacement

In most situations, preservation of existing trees is preferable to their removal and replacement or compensation.

Principle 5: Equitable access

All of Brampton's community members deserve equal opportunities to benefit from the full range of urban forest services.

Principle 6: A diverse urban forest is stronger

Urban forest diversity comes in many forms. A diverse urban forest is more resilient to stressors and better able to provide important urban forest services.

Principle 7: Adaptive management and innovation

Realizing Brampton's vision for its urban forest will require innovation, monitoring and, if necessary, changes to management approaches to better meet emerging needs and challenges.



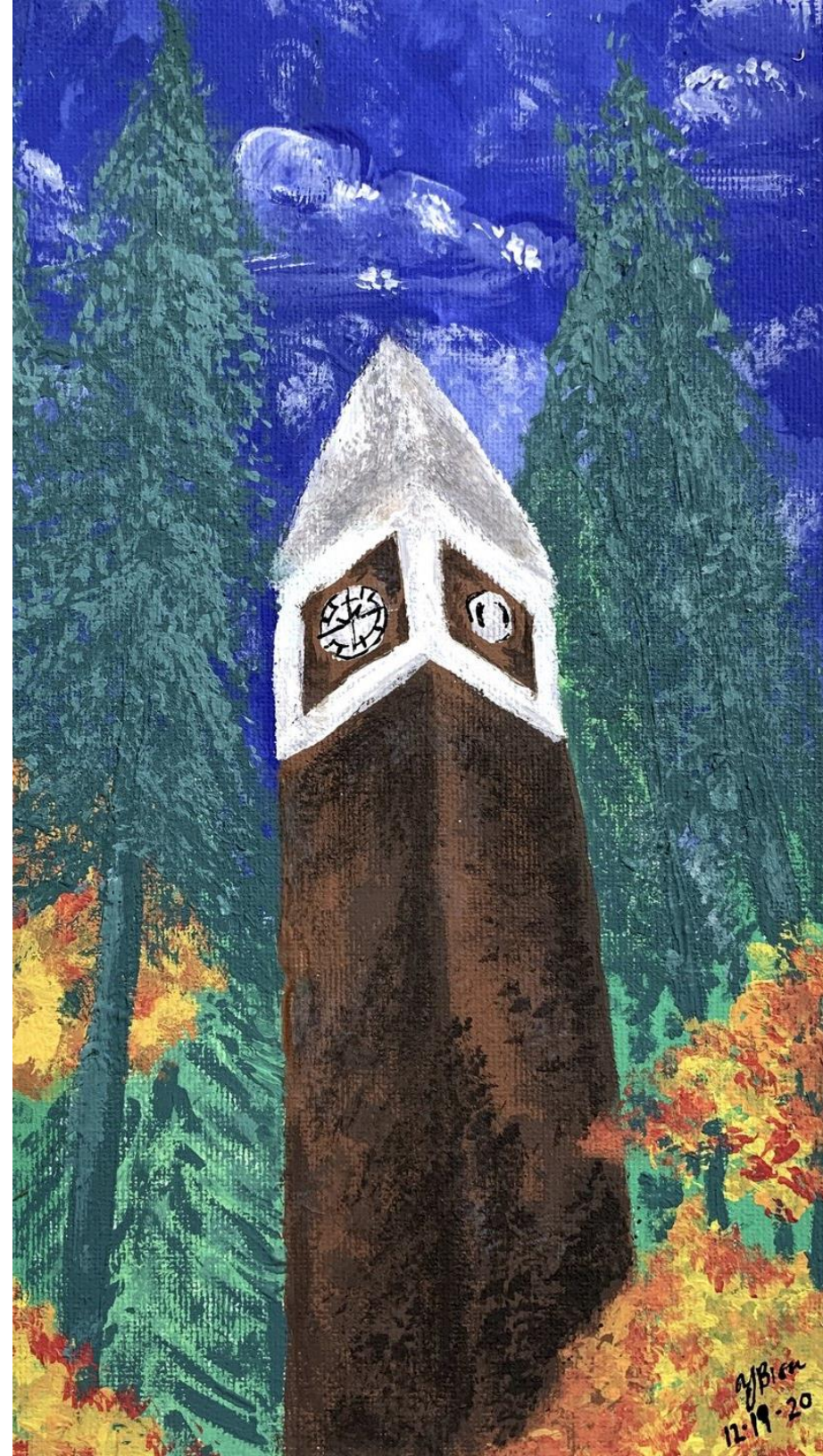
Strategic goals and objectives

The detailed technical analyses that inform the Brampton UFMP are organized around five urban forestry focus areas: The Urban Forest Resource, Urban Forest Maintenance, Growing the Urban Forest, Planning and the Urban Forest, and Engagement and Partnerships. Key findings are presented in the UFMP technical supporting documents.

The urban forestry focus areas translate into five strategic goals, which frame the plan's objectives and actions. The City of Brampton, its partners, and community residents, will realize the vision for the urban forest through the collaborative pursuit and achievement of five strategic goals, which include:

1. Understand
2. Maintain
3. Grow
4. Protect
5. Engage

These goals, along with their supporting objectives, the City's status in relation to each goal, and strategies for realizing each goal's objectives, are presented in this section of the UFMP.



2/18/20
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Strategic Goal 1 – Understand

Up-to-date knowledge and accurate and timely data are crucial to understanding the current status of the urban forest resource, identifying and prioritizing needs and challenges, and undertaking effective management responses. This, in turn, requires designing and implementing programs, practices and systems to gather, manage, and use information about Brampton's urban forest resources and assets.

Through the implementation of the Urban Forest Management Plan, the City of Brampton and its urban forest partners will:

Develop a better understanding of all aspects of the urban forest and its management, and use this knowledge and data to make better management decisions that help achieve desired outcomes for the urban forest and the community.

Objectives

- **1.a – Collect and maintain current data about Brampton's urban forest:** The City and its partners will ensure that urban forest management is informed by a comprehensive understanding of the condition, structure, function, opportunities, challenges, and other facets of the urban forest, and that this information is kept up-to-date, shared amongst partners, and useful for urban forest management and strategic planning.
- **1.b – Monitor Brampton's urban forest to track progress towards targets:** The City and its partners will monitor the urban forest at different scales to track progress towards performance targets established in the UFMP. Monitoring findings will inform day-to-day operations and long-term management decisions, and will be used to refine and optimize practices, targets, programs, and budgets through a process of active adaptive management.



Current status

This strategic goal relates to Brampton's urban forest as a physical asset and to urban forest assessments and data management, such as the tree inventory and urban forest canopy cover, structure and function studies.

As described previously in this plan, several metrics of diversity—a key indicator of urban forest resilience and function—are generally low in Brampton's urban forest. Invasive species are known to be established throughout Brampton, and urban forest age class structure is skewed towards smaller, younger trees. Additionally, data and information about some aspects of the urban forest are incomplete or out-of-date, and urban forest monitoring is limited.

However, staff have good working knowledge of many aspects of Brampton's urban forest, efforts are underway to complete the street tree inventory and expand monitoring efforts, and tools such as the Peel Tree Planting Prioritization Tool (TPPT) are available to support urban forest planning and management. If properly maintained, the young tree population will provide a good foundation for the future urban forest, and existing City policies, programs and practices can be implemented or enhanced to promote urban forest condition and diversity, protect existing trees forested areas, and enhance the provision of valuable urban forest services.

Strategies

To enhance the urban forest's capacity to provide valuable environmental, economic, and societal and health services to the community, the City of Brampton and its partners will need to implement strategies that enhance both the understanding of the urban forest and the urban forest resource itself.

Completing, maintaining, and enhancing the inventory of City-managed trees will be a critical first step in developing a better understanding of the urban forest resource and informing maintenance operations and tree establishment planning. A comprehensive urban forest canopy, structure, and function assessment, such as an i-Tree Eco study, will provide useful and current information about the existing and potential urban forest across the entire city.

These and other important assessments will reveal the urban forest's existing baseline conditions and establish the foundation for a comprehensive and ongoing monitoring program. Understanding of existing conditions and monitoring changes in the urban forest will enable the City and its partners to adapt management approaches in response to changing needs and priorities, emergent threats, and ongoing successes.

Strategic Goal 2 – Maintain

The urban forest requires an ongoing and adequately resourced commitment to proactive urban forest maintenance to improve tree health and structural condition, manage and reduce tree-related risk, and enhance the capacity of the urban forest to provide environmental, economic, and societal and health services.

Through the implementation of the Urban Forest Management Plan, the City of Brampton and its urban forest partners will:

Improve the health, condition, longevity, and safety of trees in Brampton's urban forest, improving their functional capacity to provide the full range of urban forest services.

Objectives

- **2.a – Ensure adequate and sustained resourcing for all aspects of urban forest management:** The City and its partners will ensure that adequate resources are allocated to urban forest management programs to support the UFMP vision and actions, and that the divisions responsible for managing Brampton's urban forest can deliver the full range of urban forest management services in a sustained manner. Resources will be used efficiently and the benefits of urban forest maintenance will outweigh its costs.

- **2.b – Proactively manage and reduce tree-related risk:** The City will ensure that risk posed by publicly-owned trees is managed at a reasonable level while enabling the conservation of mature trees. Private tree owners will be encouraged to proactively manage and reduce tree-related risk.
- **2.c – Consistently apply best practices for urban forest maintenance:** The City and its partners will ensure that tree maintenance practices are undertaken in an efficient and effective manner throughout the complete life cycle of municipally-owned and managed trees. Tree maintenance will be optimized towards enhancing the provision of urban forest services.
- **2.d – Improve Brampton's ability to respond to urban forest pests, diseases, and invasive species:** The City and its partners will be positioned to proactively and effectively address a wide range of existing and emergent biotic stressors that threaten trees, and to minimize adverse impacts upon the urban forest.

Current status

Brampton's urban forest requires active and ongoing maintenance to sustain and enhance tree health, condition, function, and safety. The Parks Maintenance and Forestry division of the Community Services Department is the 'home' of urban forestry at the City, and its staff and contractors undertake a wide range of forestry operations such as tree inspection, pruning, removal, stump grinding, planting, watering, mulching, risk management, and pest and disease control.

In keeping with best practices, most City street and park trees are maintained on a cyclical basis, and are inspected and pruned every five to seven years. However, other aspects of tree maintenance, such as tree pest, disease, or risk management, do not consistently reflect best practices.

The Parks Maintenance and Forestry division has historically been focused on tree maintenance operations, while tree-related planning review and long-term strategic initiatives, such as the One Million Trees Program, have been supported by other City divisions. As the city continues to grow and new citywide initiatives are adopted, it is anticipated that the level of support for urban forestry currently provided by other divisions may be reduced, requiring a more coordinated and integrated approach to urban forest management.

Strategies

The City of Brampton should continue its existing proactive urban forest maintenance programs, such as the tree pruning cycle, to ensure that tree health and function are protected and that tree-related risk is managed effectively. Some levels of service should be enhanced; for example, the frequency of young tree structural pruning and tree inspection should be increased. Effective tree maintenance will be further supported by integrating the tree inventory—which is nearing completion—with the City's broader asset management plans and systems.

Tree risk and urban forest pest, disease, and invasive species management should be significantly improved through the development and implementation of policies and plans that support a more proactive and targeted approach. These documents will provide important guidance and enable rapid and effective responses to future urban forest threats, thereby reducing the likelihood of further catastrophic losses in the urban forest.

There is also a recognized imperative to consolidate urban forestry expertise under one division to increase the City's capacity to undertake critical urban forest operations and programs. This will require the development of a broader yet more specialized divisional structure focused on all aspects of urban forest management, ranging from day-to-day operations to long-term strategic initiatives.



Strategic Goal 3 – Grow

Through the One Million Trees program, the City of Brampton has committed to fulfilling the Brampton 2040 Vision action of planting one million trees by the year 2040. Fulfilling this commitment in a way that meaningfully supports both the Brampton 2040 Vision and the vision of this UFMP will require more than tree planting; the City and its partners will need to adopt policies and practices to ensure that high-quality tree growing environments are designed and built, that the right trees are planted in the right place and for the right reasons, and that trees are adequately maintained until they are fully established.

Through the implementation of this Urban Forest Management Plan, the City of Brampton and its urban forest partners will support the City's commitment to the One Million Trees Program and:

Support the City's commitment to planting One Million Trees by 2040, expand the urban forest, strengthen its resilience against a wide range of stressors, and enhance its capacity to provide services to the community.

Objectives

- **3.a – Grow the urban forest with a focus on equity, function, and climate change adaptation:** The City and its partners will support Brampton's commitment to planting one million trees in Brampton by the year 2040, and will do so with a focus on ensuring equitable access to urban forest services for all members of the community. Tree establishment will be strategically oriented to support both citywide and site-specific targets for urban forest services in response to local needs and opportunities, and will contribute to the community's broader efforts to adapt to a changing climate.
- **3.b – Provide all trees with adequate growing environments and effective post-planting care:** The City and its partners will work to ensure that all trees are planted in high-quality growing environments and that all newly planted trees are provided the necessary care to survive, establish, and thrive to maturity.
- **3.c – Strengthen urban forest resilience through increased diversity:** The City and its partners will support urban forest diversity in various forms through their tree establishment plans and efforts. Building a more genetically, structurally, and functionally diverse tree population will strengthen the urban forest's resiliency against a wide range of stressors, including climate change. Native, non-invasive species will be established to provide wildlife food sources and habitat and to support local ecosystem health.

Current status

Trees in Brampton's urban forest are established through City operations and capital projects, land development, community engagement initiatives, and stewardship or landscaping on private lands. Guided by the Brampton 2040 Vision, in 2019 the City established the One Million Trees Program (OMTP) and committed to planting, with partner support, some 50,000 trees per year by 2040.

Numerous policies, plans, and guidelines provide sound strategic and technical direction for tree establishment in Brampton. While much of this direction aligns with recognized best practices for tree growing environment design and construction, tree establishment, and post-planting maintenance, other policies and specifications are outdated and in need to revision and consolidation.

Aside from the overall OMTP tree planting target, tree establishment in Brampton is not guided by other strategic or site-specific targets, such as urban forest structure or function. Post-planting tree care practices, such as watering, mulching, and inspection, may be inadequate or inconsistently applied, potentially contributing to excess young tree mortality or poor establishment and growth rates.

In 2021, the City initiated the Residential Tree Planting program, which provides residents with free trees for planting on their own properties. This successful program will be enhanced with UFMP guidance and partner support.

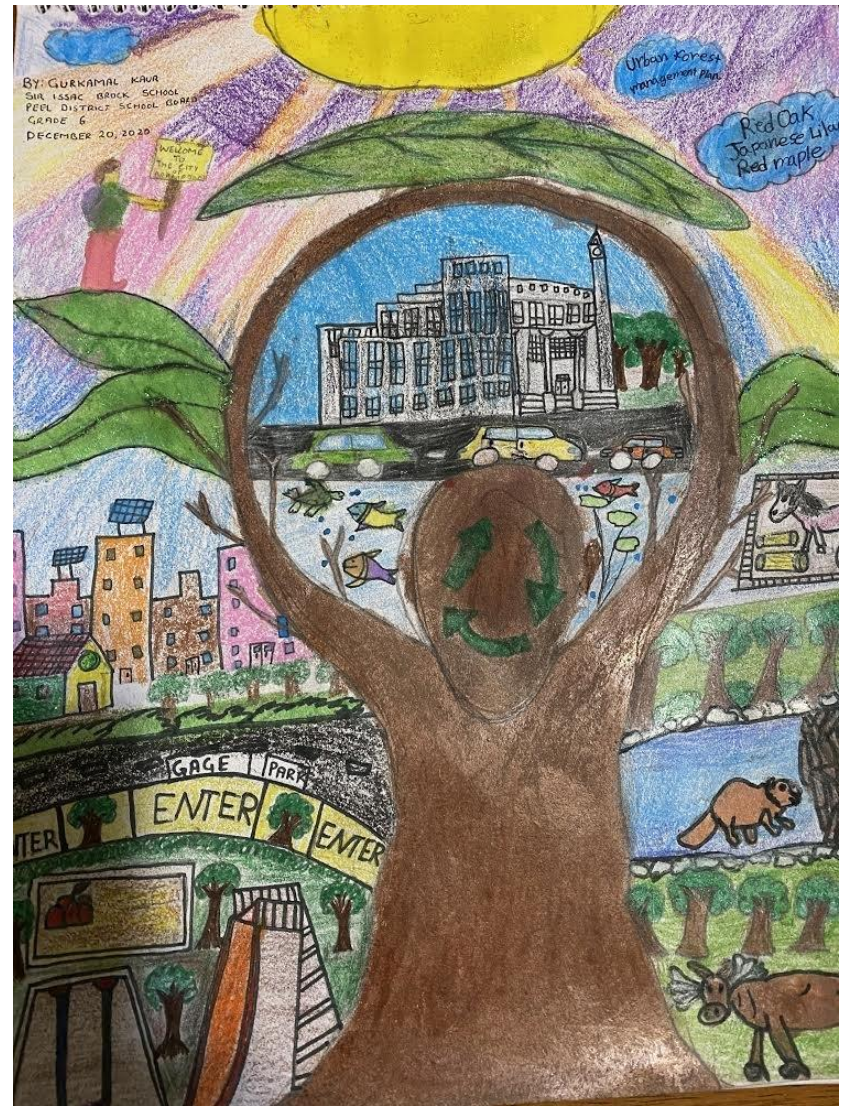
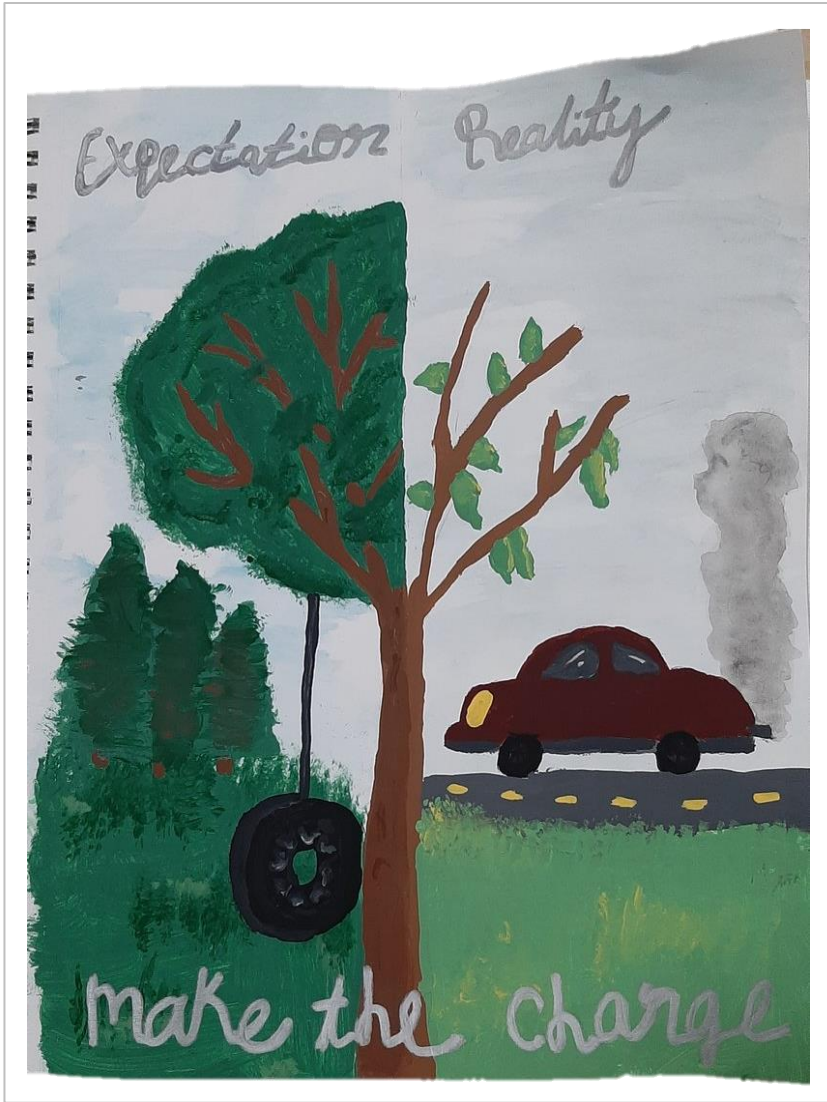
Strategies

UFMP strategies and actions for growing Brampton's urban forest will support and build on the various tree establishment-related initiatives already outlined in the One Million Trees Program strategy.

The City should use existing decision-support tools, such as the Peel Region Tree Planting Prioritization Tool, in conjunction with the urban forest assessments that will be undertaken through UFMP action implementation. Prioritizing areas for tree planting and naturalization based on equity, function, and climate change adaptation considerations will provide urban forest services in the neighbourhoods with greatest need while supporting the City's broader tree planting, energy conservation, and climate change mitigation and adaptation commitments.

Tree-related policies and technical guidance should be reviewed and updated, ensuring that consistent and effective standards and specifications for tree growing environments, nursery stock, planting practices, and post-planting care, are applied across all tree establishment scenarios under the City's purview.

Consolidating this guidance in a user-friendly manner, and engaging residents through educational and outreach programs, will encourage residents and other landowners to apply best practices for tree planting on their own properties, creating to an expanded and healthier urban forest that provides more services to the community.



Strategic Goal 4 – Protect

Development and intensification are needed to accommodate Brampton's projected population growth and to support a vibrant and healthy economy. However, development should seek to protect trees and provide sustainable growing environments for the future urban forest. As such, planning policies, standards, and guidelines, along with development review and implementation practices, must ensure that existing trees and their growing environments are effectively protected before, during, and following construction. Wherever possible, protection of healthy and mature trees should be favoured over tree removal and replacement.



Through the implementation of the Urban Forest Management Plan, the City of Brampton and its urban forest partners will:

Protect existing trees and their growing environments against injury and destruction wherever possible through a coordinated and comprehensive approach to land use planning, development review, and tree protection.

Objectives

- **4.a – Integrate the urban forest into planning policies and guidelines:** The City will ensure that all relevant higher-level strategies, plans, and guidelines recognize the value of trees and support planning decisions that protect and enhance the urban forest.
- **4.b – Enhance tree protection through improved planning practices:** The City will improve internal processes to strengthen planning application review, approval, and inspection practices to promote tree protection, and will work with landowners and the development community to encourage tree protection. Where tree protection cannot be fully accommodated, appropriate mitigation and compensation measures will be put in place to offset the adverse impacts of tree injury or removal.

Current status

Brampton's Official Plan, currently in the process of being updated, recognizes the value of the urban forest for its ecological, social, and economic benefits. This recognition, in conjunction with more specific policies, promotes tree protection and establishment in new developments and in existing built-up areas. Other high-level policies and strategies, such as the Brampton 2040 Vision, the Grow Green Environmental Master Plan (2014), the Eco Park Strategy (2019), and others, also demonstrate the City's commitment to urban forest management, protection, and enhancement.

Trees in Brampton may be protected under four tree by-laws, which regulate trees in woodlots, on streets, in parks, or private trees of at least 30 cm dbhⁱⁱ. Development guidelines require that applicants identify existing trees and, where necessary, implement tree protection plans. In accordance with City tree compensation guidelines, replanting or cash-in-lieu may be required to compensate for the removal of healthy tableland trees.

Despite policy support and existing guidelines, tree-related by-law enforcement, development and other permit application review, and site compliance inspection and enforcement are currently limited due to resource constraints.

ⁱⁱ - dbh, or diameter at breast height, is a standard method of expressing tree size. It is measured at 1.37 m above grade.

Strategies

The ongoing Official Plan update process provides an important opportunity to enhance high-level policy recognition of, and support for, Brampton's urban forest. Policies recognizing the urban forest's role in climate change adaptation and promoting community health may be especially effective in strengthening tree protection and urban forest enhancement in the future.

In addition to strengthening high-level policies, the procedural and technical aspects of Brampton's approach to tree protection should be strengthened. For example, City-administered site permits should require applicants to disclose information about nearby existing trees, flagging such applications for enhanced review by staff with urban forestry expertise. Forestry staff should be engaged early in any planning application review process to advise on tree-related constraints and opportunities, and capacity and procedures for site compliance inspection and enforcement should be bolstered. Tree protection guidelines should be reviewed, updated, expanded, and consolidated in a user-friendly manual or brochure—this will help build public awareness of tree-related requirements and support urban forest protection across the city.

The City's tree by-laws, applicable outside of the development and planning process, should be reviewed every five years to ensure that they continue to reflect community values and address threats to Brampton's trees. One potential consideration for strengthening the City's tree by-laws is to reduce the tree size (diameter) requirement for tree protection.

Strategic Goal 5 – Engage

Although the City of Brampton likely owns and maintains the largest single share of the urban forest, it is just one of many partners whose actions can influence this vital community resource. Much of the existing and potential urban forest is found on along Regional roads; on Conservation Authority lands; and on residential, commercial, and institutional properties. These lands provide valuable opportunities for enhancing and expanding Brampton’s urban forest, while also engaging community members and other partners in maintaining, growing, and protecting trees. Building lasting and successful partnerships will be essential to realizing the vision for the urban forest and achieving shared goals and objectives.

Through the implementation of the Urban Forest Management Plan, the City of Brampton and its urban forest partners will:

Encourage all members of the community to engage in urban forest stewardship on both public and private lands, and build strong urban forest partnerships to help realize the vision for Brampton’s urban forest.

Objectives

- **5.a – Promote community awareness of and engagement in the urban forest:** The City and its partners will work to increase the community’s appreciation of the urban forest, awareness of tree-related regulations, best practices, and opportunities to engage in urban forest stewardship. Community members will be supported and encouraged to play an active role in the establishment and maintenance of trees on public and private lands across Brampton.
- **5.b – Enhance City staff and Council awareness of and engagement in the urban forest:** Urban forestry staff will enhance the profile of the urban forest among other City staff and Council by providing regular updates about urban forest initiatives and community engagement, and will encourage staff and Council support for and participation in urban forest programs and initiatives.
- **5.c – Strengthen existing, and develop new, urban forestry partnerships:** The City and its partners will ensure that urban forest programs and activities are effectively coordinated and that partners’ unique strengths and knowledge are leveraged to support and achieve the UFMP vision.

Current status

The City of Brampton recognizes that outreach, engagement, and strong partnerships are critical to sustaining the urban forest and fostering a healthy community. In recent years, the City has significantly expanded its online and in-person engagement efforts around environmental sustainability and the urban forest. This has included initiating outreach to engage local youth, including developing educational modules about the urban forest; expanding partnerships and funding to support various One Million Trees Program initiatives, such as the Residential Tree Planting Program; and proclaiming September as “Brampton Tree Month” to build awareness and engagement.

As an active partner of the Peel Urban Forest Working Group, the City was an early adopter of new urban forest assessment and planning tools, such as the i-Tree Eco study and Tree Planting Prioritization Tool, and has built partnerships with several environmentally focused non-governmental organizations to support the urban forest.

Recent updates to the City’s urban forestry website, outreach initiatives supported by the OMTP strategy, and the urban forest art contest held as part of the UFMP project have helped to encourage engagement, but broader, coordinated, and sustained efforts are required to build community awareness of the vital importance of trees, promote urban forest stewardship, and achieve the goals of the One Million Trees Program and the UFMP.

Strategies

Building awareness about the urban forest and its importance will encourage stewardship on private lands and promote participation in caring for, protecting, and growing Brampton’s urban forest. Awareness-building can be achieved through a variety of outreach tools and tactics, ranging from classroom and virtual seminars, to online and social media content, to support for various partner programs, among others.

Efforts to directly engage community members in the urban forest should also be expanded. Examples of effective engagement opportunities may include basic tree monitoring and maintenance (watering and mulching) through an ‘Adopt-a-Tree’ program, heritage tree hunts and tours, community tree planting events, direct civic engagement, or support for community science (allowing community members to share their own data about the urban forest).

Expanded efforts to build awareness and encourage engagement should be coordinated under an engaging, diverse, and consistent program or campaign overseen by an Urban Forest Engagement Coordinator. The coordinator should also work to maintain existing partnerships in the urban forest and explore opportunities for innovative and successful collaboration with new urban forest partners.

Tracking progress

Progress towards realizing Brampton's vision for the urban forest will be tracked by monitoring key urban forest metrics and regularly assessing performance against targets established in the UFMP.

Metrics are measurable indicators of urban forest structure, management performance, or other factors. Targets are the metrics that are, or will be, set to be achieved through the implementation of recommended UFMP actions.

Brampton's UFMP establishes performance targets based on the 28 criteria outlined in the Vibrant Cities Lab Community Assessment and Goal-Setting Tool (see page 5). UFMP actions have been designed to move the City towards achieving these targets, and progress will be monitored through the UFMP review and updating process established through UFMP actions 1.5 and 1.6.

Establishing targets for some urban forest metrics—especially those related to structure and function—requires accurate and up-to-date knowledge of existing baseline conditions. As the availability of such information is currently outdated or limited, Brampton's UFMP does not establish target metrics for the urban forest, such as canopy cover, diversity, or function. Instead, UFMP actions support measurement and monitoring of key urban forest metrics and the future establishment of targets on the basis of these findings, which will be undertaken through the UFMP review process.

Urban forest metrics to be monitored by the City and its urban forest partners will include:

- Urban tree canopy (UTC)
- Tree health and condition
- Taxonomic (species, genus, and family) diversity
- Tree age and size class distribution
- Tree establishment on public and private lands
- Community engagement

Additional metrics, described in the UFMP technical supporting documents, may also be monitored through field-based assessments or desktop analyses of existing or new data. Some urban forest metrics can be monitored with limited, if any, increases in existing program resources, and data can be obtained through collation of routinely-collected information or minor procedural changes.



URBAN FOREST ACTION PLAN

Brampton's UFMP includes 36 action items, organized according to the plan's five strategic goals, to be implemented within the ten-year planning horizon. These actions are summarized in this section of the UFMP. This draft action plan summary includes the action item title, description, and partners. Where applicable, associated One Million Trees Program (OMTP) actions are also listed. Prioritization of actions and associated resource requirements will be completed through the plan finalization process.

Funding the action plan

As in most communities in Canada, urban forest management in Brampton is primarily funded through tax and fee-supported general funds and the City's operating and capital budgets. This requires urban forestry to compete with other vital municipal services and projects for limited resources. However, other funding sources and tools may be available and should be explored to support the implementation of the UFMP, including:

- Community Benefits Charges
- Density bonusing
- External grants
- Urban forestry reserve funds
- Cost recovery
- Fundraising and philanthropy

Implementation partners

The Urban Forestry section of the Parks Maintenance and Forestry division of the Community Services Department is currently the 'home' of urban forest management in Brampton, and will be the lead division responsible for the implementation of most UFMP actions. However, the support of internal and external partners and the community will be necessary to successfully carry out many of the UFMP's recommendations and achieve Brampton's vision for its urban forest.

UFMP partners

City of Brampton (internal)

- Corporate Support Services Dept. (CSS)
- Green City Working Team (includes various divisions)
- Legislative Services Dept. (LS)
- Office of the Chief Administrative Office (CAO)
- Planning, Building, and Economic Development Dept. (PBED)
- Public Works and Engineering Dept. (PWE)

Agencies, groups, and other partners (external)

- Building Industry and Land Development Association (BILD)
- Conservation Authorities (CVC, TRCA)
- First Nations
- Peel Region (incl. Peel Urban Forest Working Group)
- Residents and community members
- School boards (Peel District / Dufferin-Peel Catholic)
- Other external partners (as identified)

Conceptual renderings

The UFMP Action Plan includes four rendered illustrations that conceptually depict the implementation of a number of recommended UFMP actions or action elements. The four conceptual drawings, interspersed throughout the Action Plan, include:

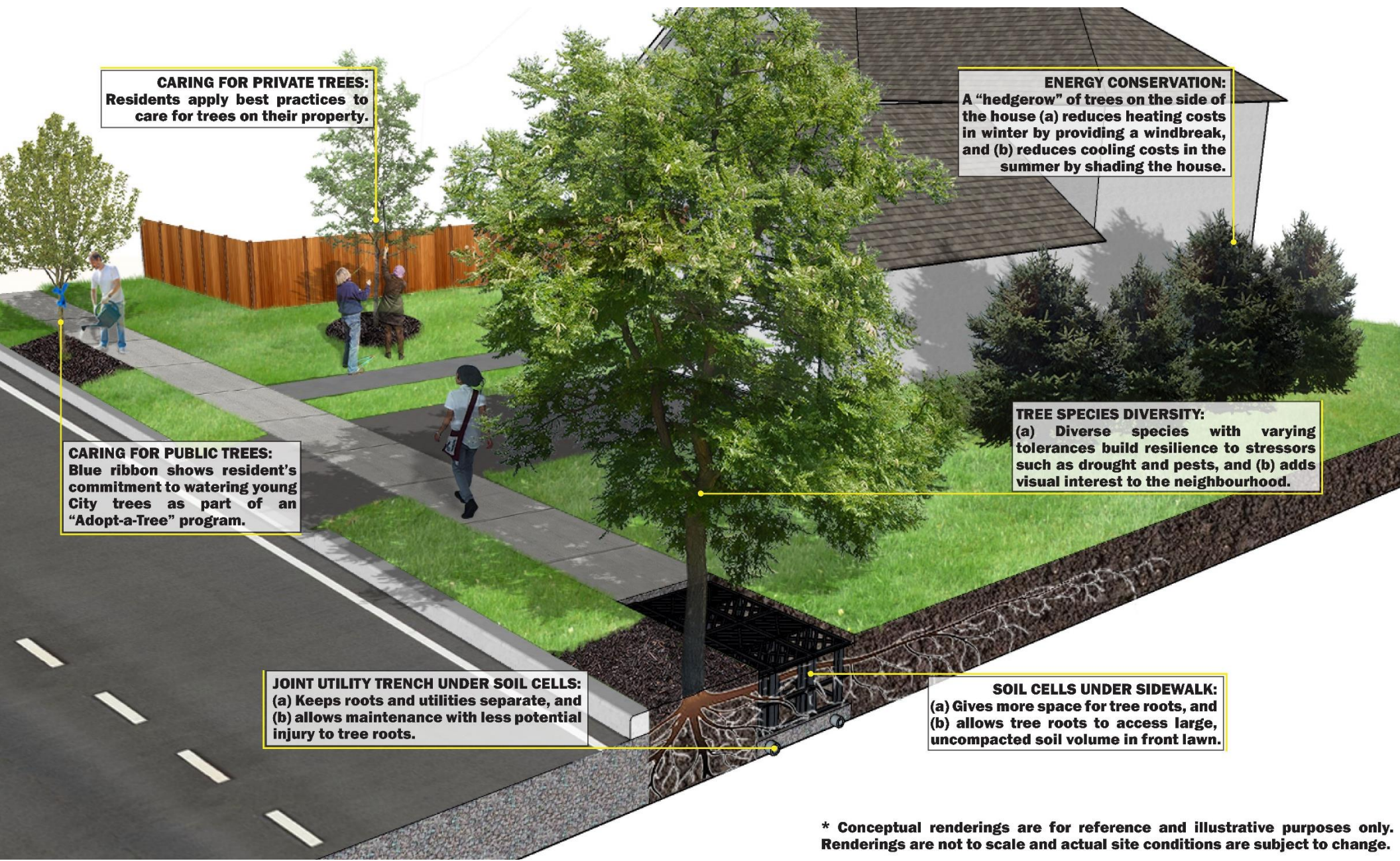
- Residential streetscape
- Urban streetscape
- Parking lot
- Parkland and woodland edge

Dimensions, actual site conditions, and other details are subject to site-specific constraints and implementation. As such, the renderings shown in the Urban Forest Management Plan are not to scale and intended for reference and illustrative purposes only.

Concept: Residential streetscape

The residential streetscape conceptual rendering depicts the implementation of engineered growing environment solutions including root break-out zones that allow the roots of trees situated in narrow boulevards to access the large volumes of uncompacted soil in adjacent yards, and joint utility trenches below sidewalks which prevent root/infrastructure conflicts and facilitate maintenance while minimizing the risk of root damage and tree injury.

The concept also shows engaged residents applying best practices for tree care and maintenance, such as watering newly planted street trees and structurally pruning young trees on private property. The concept also depicts a diverse range of tree species, which promotes urban forest resilience, and trees planted in ways that maximize the services they provide to the community (such as shading and providing windbreaks to the adjacent house).



CARING FOR PRIVATE TREES:
Residents apply best practices to care for trees on their property.

ENERGY CONSERVATION:
A “hedgerow” of trees on the side of the house (a) reduces heating costs in winter by providing a windbreak, and (b) reduces cooling costs in the summer by shading the house.

CARING FOR PUBLIC TREES:
Blue ribbon shows resident’s commitment to watering young City trees as part of an “Adopt-a-Tree” program.

TREE SPECIES DIVERSITY:
(a) Diverse species with varying tolerances build resilience to stressors such as drought and pests, and (b) adds visual interest to the neighbourhood.

JOINT UTILITY TRENCH UNDER SOIL CELLS:
(a) Keeps roots and utilities separate, and (b) allows maintenance with less potential injury to tree roots.

SOIL CELLS UNDER SIDEWALK:
(a) Gives more space for tree roots, and (b) allows tree roots to access large, uncompacted soil volume in front lawn.

* Conceptual renderings are for reference and illustrative purposes only. Renderings are not to scale and actual site conditions are subject to change.

STRATEGIC GOAL 1: UNDERSTAND

ACTION 1.1 - Complete and maintain an inventory of City-owned trees and potential tree planting sites

DESCRIPTION

Complete the ongoing collection of its street tree inventory, and expand the inventory to include actively-managed park trees, City facility trees, and vacant tree planting sites on City-owned lands. Enhance the inventory through additional attributes with management utility, and establish a process to keep the tree inventory up-to-date. Integrate newly planted trees into the inventory on a timely basis.

PARTNERS

Digital Innovation and IT (CSS)

ACTION 1.2 - Collect an inventory of high-priority trees on private lands

DESCRIPTION

Collect an inventory of priority species in the context of pest and disease management and rapid response, such as oak trees susceptible to oak wilt disease. To be conducted from the public right-of-way without requiring access to private properties and to include basic attributes. Inventory will be used to guide outreach to tree owners in the event of priority urban forest pest infestation or disease outbreaks, to encourage action.

PARTNERS

Residents and community members

ACTION 1.3 - Complete an urban forest canopy and structure study

Working in partnership with Peel Urban Forest Working Group (PUFWG), undertake a comprehensive geospatial and field-based urban study to update existing and inform new urban forest structure and function analyses.

DESCRIPTION Geospatial analysis metrics and mapping to include urban tree canopy (UTC), potential plantable area (PPA), and potential plantable spaces (PPS), among others. Field-based i-Tree Eco study will inform structure and function assessments. Findings will be used to monitor the urban forest and inform long-term planning.

PARTNERS

- Environment and Dev. Engineering (PWE)
- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG)
- Residents and community members
- Others: Academic institutions



ACTION 1.4 - Complete an urban forest climate change vulnerability assessment

DESCRIPTION	Use tree inventories and other urban forest assessment data in conjunction with climate models to assess exposure, sensitivity, and adaptive capacity of Brampton's urban forest to projected climate change effects. Variables to be considered include, among others: temperature and growing season change, drought tolerance/moisture use, ice storm vulnerability, air pollution, humidity, etc., including potential climate change influence upon of significant urban forest pests, diseases, and invasive species population and distribution. Build on the tree vulnerability analyses completed by CVC and Peel Urban Forest Best Practice Guide vol. 4: <i>Potential Tree Species for Peel in a Climate Change Context</i> .
PARTNERS	<ul style="list-style-type: none">• Conservation Authorities (CVC, TRCA)• Other: Academic institutions, Peel Climate Change Partnership

ACTION 1.5 - Monitor and report on progress towards urban forest targets

DESCRIPTION	Undertake monitoring of recommended UFMP metrics (see page 28) using tools and methods described in the UFMP technical supporting documents, such as inventories, studies and analyses, benchmarking, consultation, etc. Build on existing Tree Tracker tool and per OMTP Action 4.1.2 develop a protocol to track and validate tree planting progress. Review Criteria and Indicators assessment in conjunction with Action 1.6. Develop annual 'State of the Urban Forest' reports.
PARTNERS	<ul style="list-style-type: none">• Environment and Development Engineering (PWE)• Multiple external partners (refer to UFMP technical supporting documents)
OMTP ACTIONS	3.1, 3.4, 4.1.2

ACTION 1.6 - Review and update the Urban Forest Management Plan every five years

DESCRIPTION

Every five years, undertake a comprehensive review and update the status of the UFMP and progress towards targets and action implementation. This should include a compilation and analysis of recent urban forest inventories and assessments (including monitoring), undertaking of scoped internal and external consultations, re-assessment of Criteria and Indicators-based performance indicators, status review/updating of existing targets, establishment of new targets, assessment of overall successes and shortcomings, tracking UFMP action item implementation, re-prioritization of actions (if necessary), and preparation of a UFMP update report.

PARTNERS

None assigned

OMTP ACTION

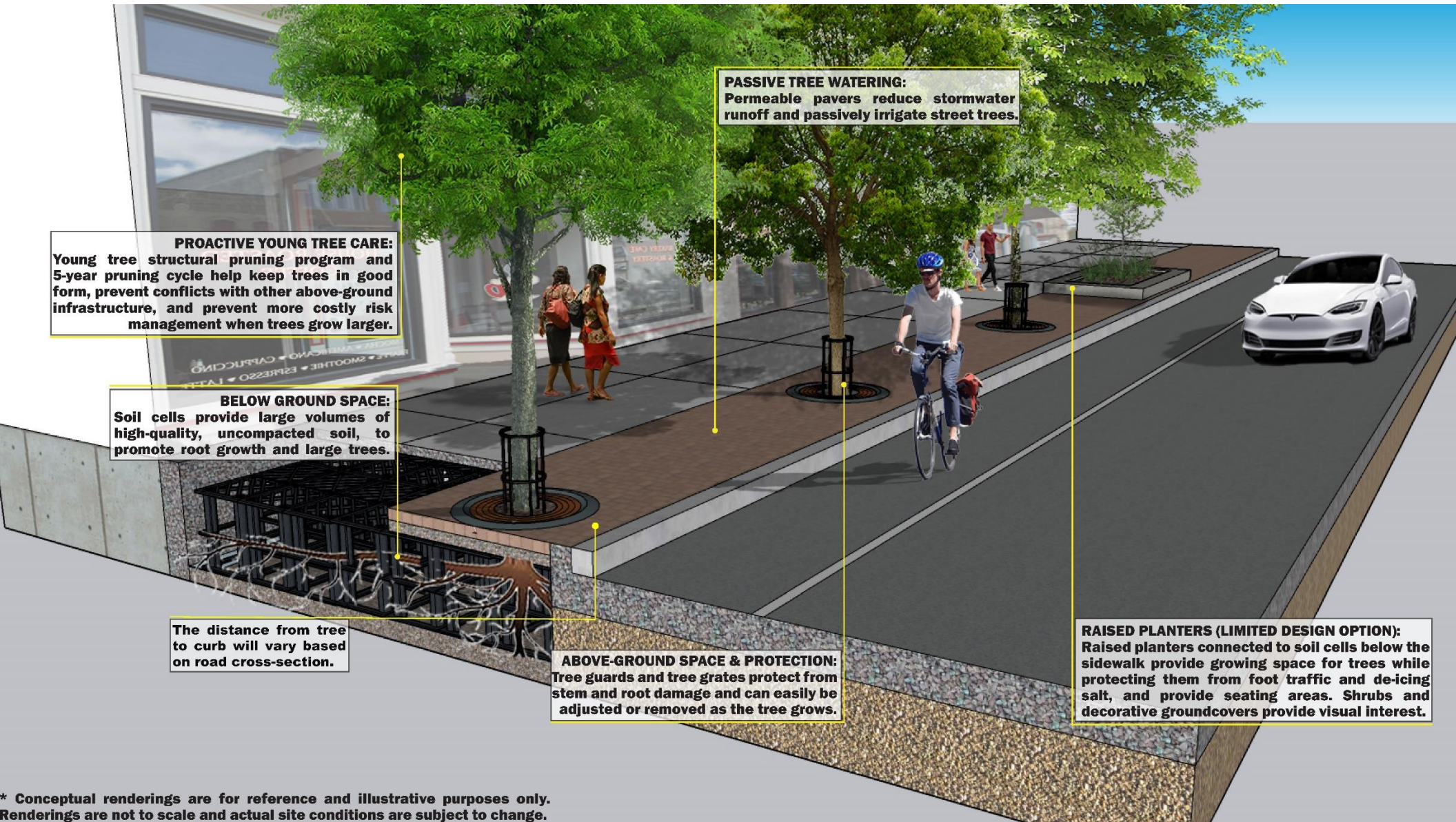
4.5





Concept:
Urban streetscape

The urban streetscape conceptual rendering depicts a downtown “Main Street” scenario. Trees are planted in engineered rooting environments constructed of structural soil cells, that allow tree roots to access large volumes of uncompacted soils while supporting an urbanized “hardscape” above-ground. Trees are protected using removable tree guards and easily maintainable tree grates that can be expanded as the trees grow, to prevent girdling. A diverse range of tree species is planted and maintained according to best practices, such as a 5-year tree pruning cycle, to provide clearance to pedestrians, vehicles, and commercial signage, while providing a dense leafy canopy that contributes to a comfortable, welcoming, and pedestrian-friendly environment. Design options such as permeable pavers or raised-edge planters, which can be implemented where appropriate and feasible, promote tree health by protecting them against de-icing salt contamination and providing passive irrigation through stormwater infiltration.



PROACTIVE YOUNG TREE CARE:
Young tree structural pruning program and 5-year pruning cycle help keep trees in good form, prevent conflicts with other above-ground infrastructure, and prevent more costly risk management when trees grow larger.

BELOW GROUND SPACE:
Soil cells provide large volumes of high-quality, uncompacted soil, to promote root growth and large trees.

The distance from tree to curb will vary based on road cross-section.

ABOVE-GROUND SPACE & PROTECTION:
Tree guards and tree grates protect from stem and root damage and can easily be adjusted or removed as the tree grows.

PASSIVE TREE WATERING:
Permeable pavers reduce stormwater runoff and passively irrigate street trees.

RAISED PLANTERS (LIMITED DESIGN OPTION):
Raised planters connected to soil cells below the sidewalk provide growing space for trees while protecting them from foot traffic and de-icing salt, and provide seating areas. Shrubs and decorative groundcovers provide visual interest.

* Conceptual renderings are for reference and illustrative purposes only. Renderings are not to scale and actual site conditions are subject to change.

STRATEGIC GOAL 2: MAINTAIN

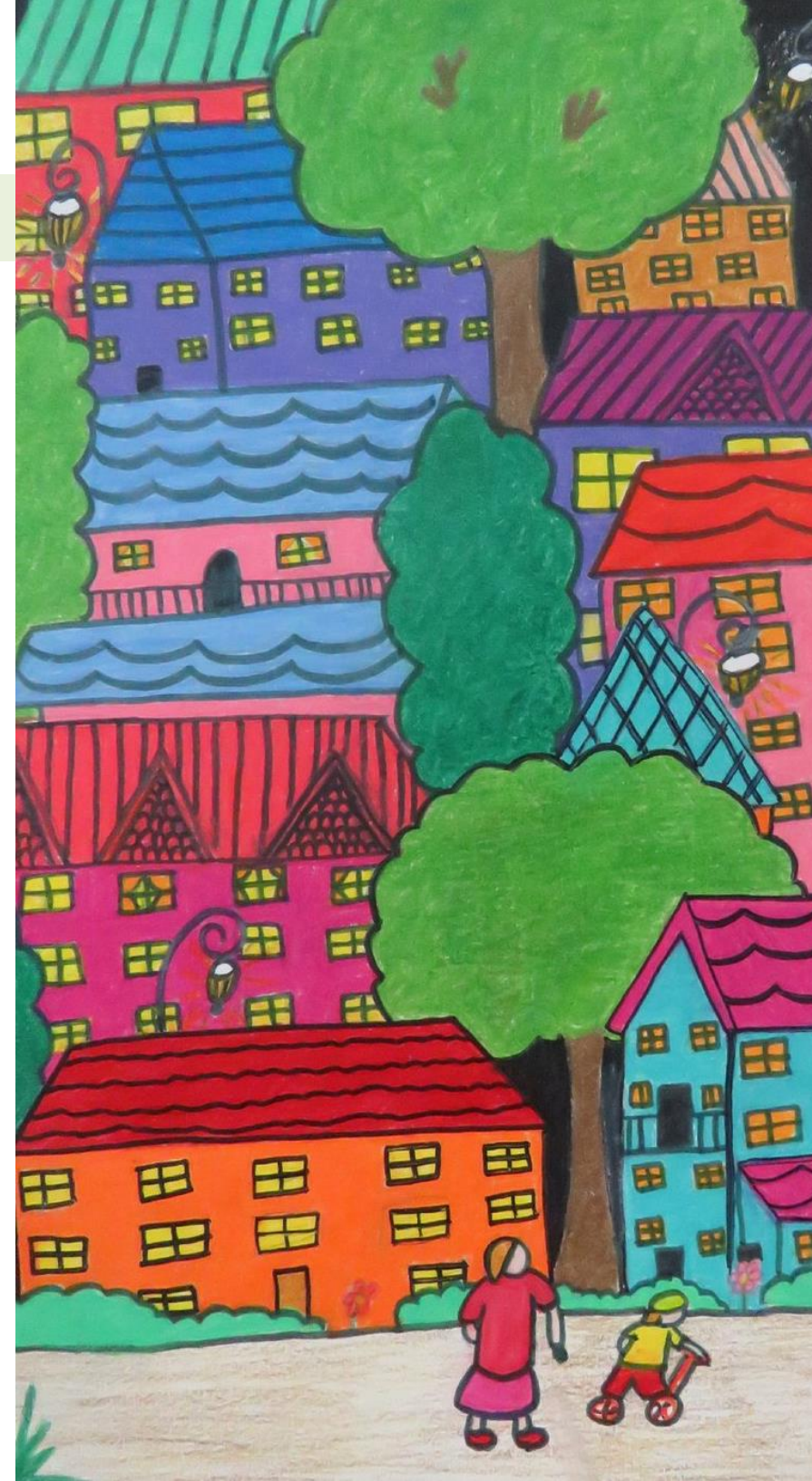
ACTION 2.1 – Update and expand the Urban Forestry section to support implementation of the UFMP

DESCRIPTION

Build capacity and consolidate all urban forestry maintenance operations and planning and strategic initiatives to be incorporated under the Urban Forestry group. Establish Urban Forest Maintenance and Urban Forest Health work units under an Urban Forest Operations section, to be responsible for tree inspection, pruning, removal, planting and post-planting maintenance (operations-based), pest and disease management (Integrated Pest Management/IPM), urban forest monitoring and data analysis, and contract administration for contracted maintenance operations. Establish Tree Protection and Plan Review, Strategic Initiatives, and Outreach and Engagement work units under Urban Forest Planning section, to be responsible for the review and enforcement of tree-related components of planning and permit applications (in coordination with other City divisions) tree by-law permit application review, strategic initiatives, and community and partner engagement.

PARTNERS

- Environment and Development Engineering (PWE)
- Organizational Performance and Strategy (CAO)



ACTION 2.2 - Include urban forest data in the City's Corporate Asset Management Plan and systems

DESCRIPTION

Integrate tree inventory and existing Service Request and Work Order procedures with Brampton's Cityworks™ enterprise asset management and computerised maintenance management systems. Integrate urban forest assets with City asset management plans in accordance with Provincial regulations for non-core assets, and integrate UFMP targets with asset management plans (AMP) as key performance indicators.

PARTNERS

- Digital Innovation and IT (CSS)
- Finance (CSS)

ACTION 2.3 - Develop an urban forestry Levels of Service manual

DESCRIPTION

Establish and define Levels of Service (LoS) for common urban forestry operations in divisional policy or an operations manual. Approved LoS should be published on the City website to promote public awareness of expected service levels, similar to Brampton's Road and Traffic (snow removal operations) LoS.

PARTNERS

None assigned



ACTION 2.4 - Develop a tree risk management policy

DESCRIPTION Develop a departmental policy to frame the scope of tree risk management. Among other considerations, the policy should address the Standard of Care, roles and responsibilities, risk thresholds, minimum training and qualifications for risk assessors, frequency and levels of assessment, record and evidence retention, and program monitoring. The policy is to guide the application of current industry standards and best practices, including ANSI A300 Part 9 and support conservation-focused tree risk mitigation wherever feasible.

PARTNERS Insurance and Risk Management (LS)

ACTION 2.5 - Enhance tree risk management capabilities and practices

DESCRIPTION Support urban forestry staff in obtaining tree risk assessment training and industry qualification. Develop tree risk assessment priority zones and undertake both proactive and reactive risk assessments at appropriate levels. *ANSI A300 (Part 9-2017): Tree, Shrub and Other Woody Plants Management – Standard Practices (Tree Risk Assessment a. Tree Structure Assessment)* and the International Society of Arboriculture (ISA) *Tree Risk Assessment Best Management Practices, Second Edition (2017)* are the current industry standards for tree risk assessment.

PARTNERS None assigned

ACTION 2.6 - Continue and enhance existing tree maintenance programs and practices

DESCRIPTION Ensure ongoing and fully resourced implementation of existing urban forestry maintenance operations, including pruning cycles. Upon completion of tree inventories, investigate increased pruning cycle frequency. Review and revise urban forestry operations contracts and specifications to ensure conformity to industry standards and best management practices. Conduct periodic performance audits of urban forestry contractors, increase monitoring of newly planted trees, and monitor trends in tree service requests.

PARTNERS None assigned

ACTION 2.7 - Implement a young tree structural pruning program

DESCRIPTION Implement a '3-in-10' Young Tree Structural Pruning (YTSP) program for all newly planted, City-managed caliper trees, focusing on development of good long-term tree structure. Monitor naturalization plantings and implement YTSP once target trees have reached appropriate size. Ensure pruning crews have appropriate training to implement YTSP correctly, as tools and methods differ from mature tree maintenance pruning.

PARTNERS None assigned



ACTION 2.8 - Develop an urban forest pest, disease, and invasive species strategy and priority response plans

DESCRIPTION

Develop a citywide strategy to identify and prioritize pests, diseases, and invasive plant species threats to Brampton's urban forest. Develop and apply an Integrated Pest Management (IPM) approach and establish resources required for an enhanced management approach. Explore education and collaboration opportunities with partners, and identify priority sites and pilot/trial projects. Rapid response plans for Asian longhorned beetle, oak wilt, and others should be enacted when priority species are suspected or known to be in proximity to Brampton, and should provide guidance for multiple aspects of management. Align with/build upon similar strategies developed by CVC and TRCA.

PARTNERS

- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG)

ACTION 2.9 - Enhance urban forest pest, disease, and invasive species management

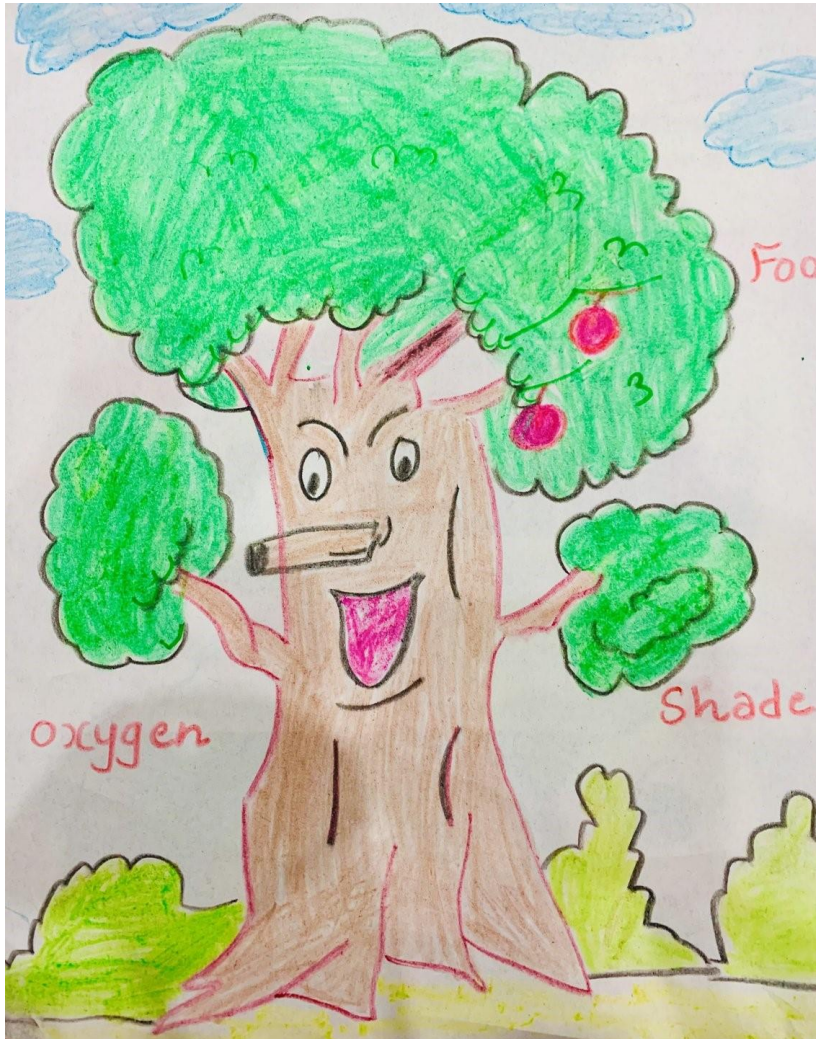
DESCRIPTION

Establish Integrated Pest Management work unit (see Action 2.1) to undertake pest, disease, and invasive species management. Enhance outreach and awareness regarding priority species, and engage the community and other partners in safe, limited-scope invasive species management activities such as "community weed pulls". Continue existing partnerships with Conservation Authorities and Peel Urban Forest Working Group (through Invasive Subcommittee) to collect and maintain invasive species population inventories on public lands and on early detection monitoring. Develop roster of private natural area ownership in Brampton and engage landowners in invasive species management.

PARTNERS

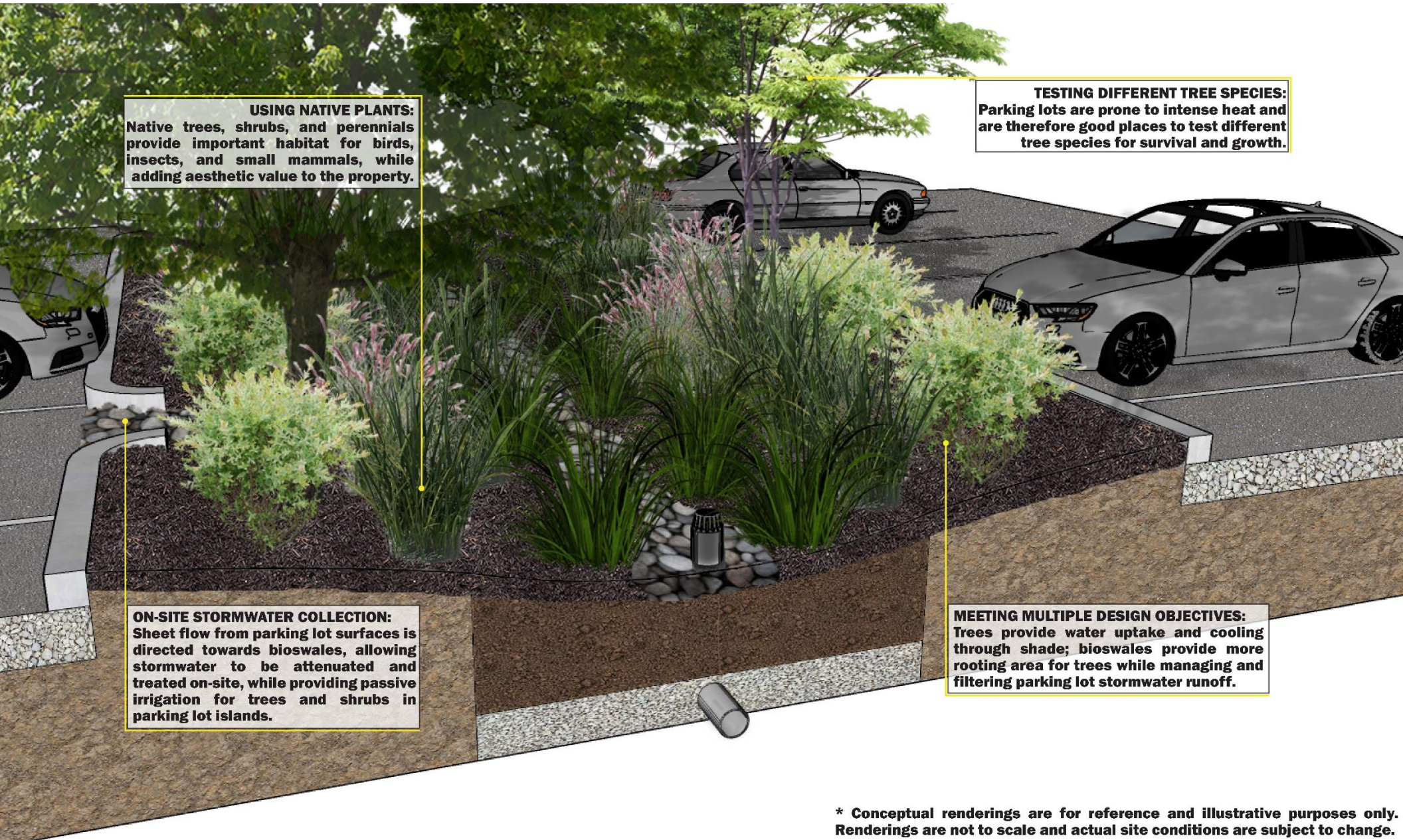
- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG – Invasive Subcommittee)





Concept:
Parking lot

The parking lot conceptual rendering depicts a municipal or commercial parking lot that meets multiple design objectives, including stormwater management, urban heat island mitigation, and promotion of biodiversity (among others). The bioswale captures and filters stormwater runoff while providing a large soil volume to support mature shade trees, and provides an opportunity to plant a diverse range of tree species, including novel and underutilized varieties. Shading of parked cars and pavements cools the local microclimate while also reducing fuel evaporation from gas tanks, thereby protecting air quality.



USING NATIVE PLANTS:
Native trees, shrubs, and perennials provide important habitat for birds, insects, and small mammals, while adding aesthetic value to the property.

TESTING DIFFERENT TREE SPECIES:
Parking lots are prone to intense heat and are therefore good places to test different tree species for survival and growth.

ON-SITE STORMWATER COLLECTION:
Sheet flow from parking lot surfaces is directed towards bioswales, allowing stormwater to be attenuated and treated on-site, while providing passive irrigation for trees and shrubs in parking lot islands.

MEETING MULTIPLE DESIGN OBJECTIVES:
Trees provide water uptake and cooling through shade; bioswales provide more rooting area for trees while managing and filtering parking lot stormwater runoff.

* Conceptual renderings are for reference and illustrative purposes only. Renderings are not to scale and actual site conditions are subject to change.

STRATEGIC GOAL 3: GROW

ACTION 3.1 - Identify and prioritize tree establishment areas based on equity, services, and climate change adaptation

DESCRIPTION

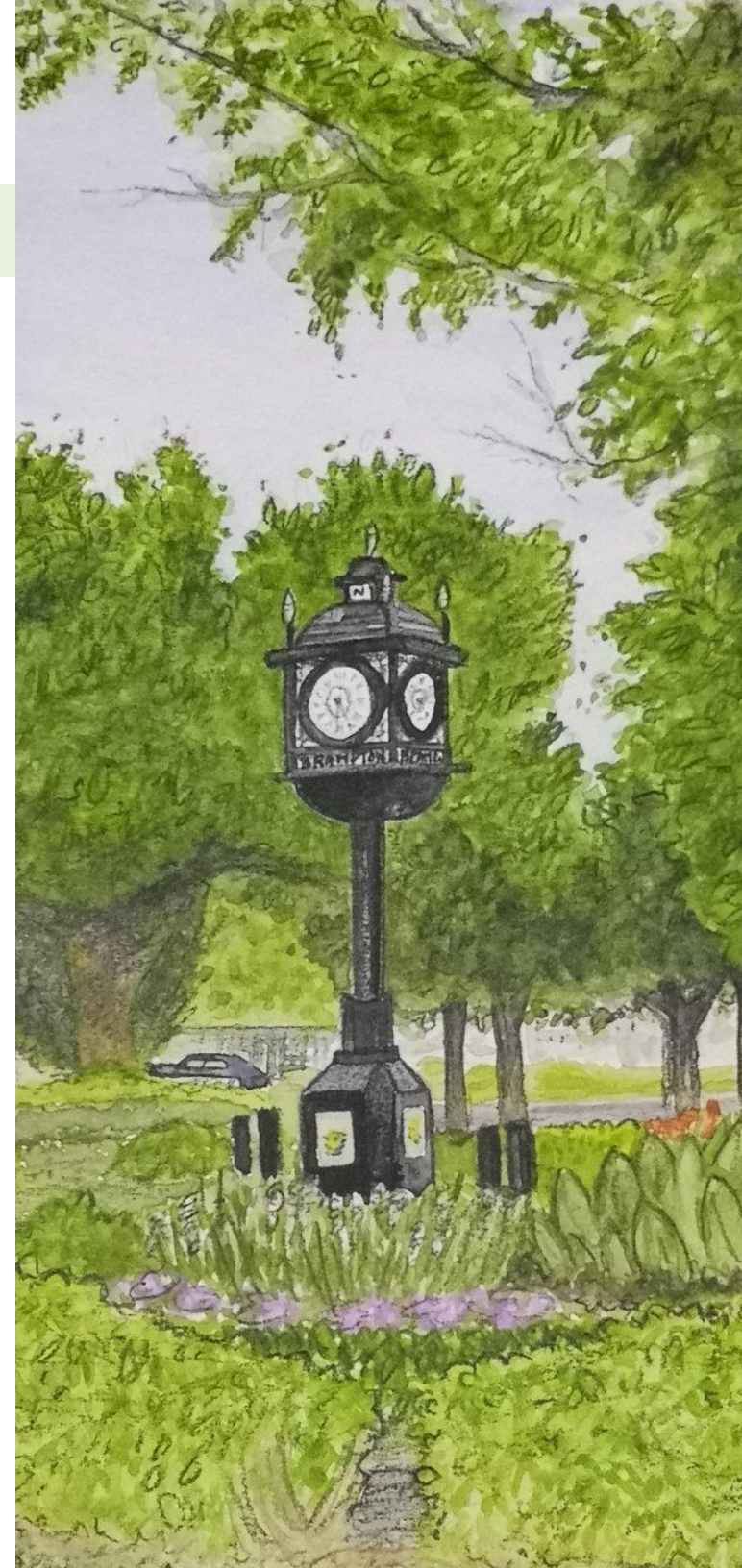
Collaborate with Peel Urban Forest Working Group to update the Tree Planting Prioritization Tool (TPPT). Deploy the TPPT when planning tree establishment through City operations, capital projects, naturalization, community events, and other programs. Where possible, prioritize planting in areas where multiple needs overlap. Priority needs include mitigating urban heat islands, promoting active transportation, improving air and water quality, promoting environmental justice and equity, increasing ecosystem connectivity, and economic value. In accordance with community input through the UFMP process, focus plantings in parks and natural areas, along neighbourhood streets, and around community buildings and facilities.

PARTNERS

- Environment and Development Engineering (PWE)
- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG)
- School boards (Peel District / Dufferin-Peel Catholic)
- Community members, including representatives of climate vulnerable groups/populations
- Others: Association for Canadian Educational Resources (ACER), Peel Climate Change Partnership

OMTP ACTIONS

1.1.1, 1.1.2, 2.1.7, 2.2.2, 2.3.1 to 2.3.3., and 3.7



ACTION 3.2 - Plant more trees in parks and open spaces where they will not conflict with formalized park uses

DESCRIPTION	Build on priorities identified in Action 3.1 to undertake and prioritize naturalization in accordance with the City's Valleys and Parks Naturalization Program and Natural Heritage Restoration Program (NHRP). A diversity of site-appropriate native non-invasive species should be used for such projects, including species anticipated to be tolerant of conditions in the context of climate change.
PARTNERS	<ul style="list-style-type: none">• Conservation Authorities (CVC, TRCA)• Peel Region (incl. PUFWG)• Multiple external implementation partners
OMTP ACTION	2.8.1

ACTION 3.3 - Update and consolidate tree establishment policies and guidelines

DESCRIPTION	Undertake a comprehensive technical review and update of all City tree establishment guidelines, standards, specifications, etc. Consolidate all guidance in a single compendium document, to be applicable in all tree establishment scenarios under City jurisdiction, and to encourage application of best practices on private lands. Enhance tree diversity guidelines (with focus on native, non-invasive species), planting stock standards, tree growing environment design standards and specifications, and species selection tools.
PARTNERS	<ul style="list-style-type: none">• Building Design and Construction (PWE)• Capital Works (PEW)• City Planning and Design (PBED)• Development Services (PBED)• Environment and Development Engineering (PWE)• Building Industry and Land Development Association (BILD)• Conservation Authorities (CVC, TRCA)• Peel Region (incl. PUFWG)
OMTP ACTIONS	1.2.2, 2.2.2, 2.6.6 and 2.8.2

ACTION 3.4 - Undertake tree performance trials to diversify the urban forest and identify climate-ready trees

DESCRIPTION	<p>Trial at least 15 novel or underutilized tree types (species, cultivars, etc.) by planting across different land types and microclimates on City lands. Undertake regular monitoring and use trial findings to revise tree species lists for programs, operations, capital projects, and other planting scenarios. Draw on the tree vulnerability analyses completed by CVC and Peel Urban Forest Best Practice Guide vol. 4: <i>Potential Tree Species for Peel in a Climate Change Context</i>.</p>
PARTNERS	<ul style="list-style-type: none">• Conservation Authorities (CVC, TRCA)• Other: Academic institutions, Association for Canadian Educational Resources (ACER), local tree suppliers

ACTION 3.5 - Enhance all aspects of tree establishment for both City- and developer-planted trees

DESCRIPTION	<p>Increase rigor, quality, and oversight of tree planting contract specifications, pre- and post-inspection, procurement, and sequencing. Enhance maintenance of City plantings (e.g., more frequent watering, mulching, inspection, erosion and sediment control, etc.), and require developers to undertake and document basic maintenance pre-acceptance. Refer to Peel Urban Forest Best Practice Guide vol. 2: <i>Urban Forest Management Best Practices Guide for Peel</i>.</p>
PARTNERS	<ul style="list-style-type: none">• Building (PBED)• Capital Works (PWE)• Development Services (PBED)• Environment and Dev. Engineering (PWE)• Building Industry and Land Development Association (BILD) and non-member builders and developers



ACTION 3.6 - Expand community involvement in tree planting and care on public lands

DESCRIPTION

Enhance existing, and develop new, engagement materials to encourage residents to water and monitor trees. Initiate contact between residents and tree crews to communicate basic tree maintenance (water, mulch) needs. Develop an 'Adopt-a-Tree' program to encourage residents, groups, or businesses to formalize their commitment to water, weed, and monitor City street, park, or facility trees. Work with partners to engage the community in basic woodlands stewardship, such as litter pick-up, invasive plant "weed pulls", naturalization, community science, etc.)

PARTNERS

- Environment and Development Engineering
- Conservation Authorities (TRCA, CVC)
- Peel Region (incl. PUFWG)
- Others: Association for Canadian Educational Resources (ACER), EcoSource, Evergreen, LEAF, Tree Canada

OMTP ACTIONS

2.1.5 and 2.8.1



Concept:
Park and woodland edge

The parkland and woodland edge conceptual rendering illustrates a city park where an existing woodland has been retained and where the local community has been engaged in growing and caring for the urban forest. Trees removed through urban forestry operations have been repurposed as play structures and park furniture, sequestering carbon and reducing waste, and trees are planted strategically to provide shade and cooling and improve air quality near the playground. Community members are actively engaged in caring for woodlands and natural areas through invasive species management, and safe harvesting of urban forest foods, such as berries, is encouraged. Naturalized forest edges encourage nature connection and provide habitat for a wide range of species, and community members are engaged in planting and caring for young trees throughout the park to sustain and expand the urban forest.



LOCAL WOOD RE-USE:
City trees, removed through urban forestry operations, are repurposed as durable park furniture. Salvaged wood is diverted from the waste stream and stores carbon.

FOREST FOOD:
Harvesting fruit from native plants, such as Serviceberries, for community consumption through local food banks, providing local and organic nutrition.

CARING FOR OUR FORESTS:
(a) Forest edges naturalized with diversity of small native trees and shrubs, and (b) community members engaged in invasive species 'weed pulls' - protecting forest health and improving ecological function.

COMMUNITY HEALTH BENEFITS:
Trees are strategically placed to provide natural shade for playground structures, providing cooling, improving air quality, and protecting people from harmful UV rays.

COMMUNITY TREE PLANTING:
Community partners establishing trees on park lands, helping to meet the goal of planting one million trees by 2040.

* Conceptual renderings are for reference and illustrative purposes only. Renderings are not to scale and actual site conditions are subject to change.

STRATEGIC GOAL 4: PROTECT

ACTION 4.1 - Ensure that the urban forest is considered in all aspects of city planning

DESCRIPTION Ensure that the UFMP vision, goals, objectives, targets, and relevant policies related to the urban forest, are considered and incorporated as new strategies, plans and guidelines are developed, and as existing documents are updated.

LEAD City Planning and Design (PBED)

PARTNERS Parks Maintenance and Forestry (CS)

ACTION 4.2 - Update the Official Plan with policies specific to the urban forest

DESCRIPTION As part of the ongoing Official Plan update process, ensure all urban forest-related and relevant land use planning policies are aligned with the current strategic and policy direction at the local, Regional, and Provincial levels. Develop policies to recognize the value of, and support sustaining and enhancing, Brampton's urban forest. Draw on planning and policy guidance from Peel Urban Forest Best Practice Guide vol. 1: *Best Practices Guide for Urban Forest Planning in Peel*.

LEAD City Planning and Design (PBED)

PARTNERS

- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG)

ACTION 4.3 - Review and update tree by-laws every five years

DESCRIPTION

Undertake regular review of Brampton's tree by-laws to ensure alignment with current urban forestry strategic goals and objectives, reflection of community values, and effective and efficient implementation. Consider reducing tree size (diameter) threshold for regulation. Further guidance for specific enhancements is outlined in the UFMP technical supporting documents.

PARTNERS

- Enforcement and By-law Services (LS)
- Legal Services (LS)



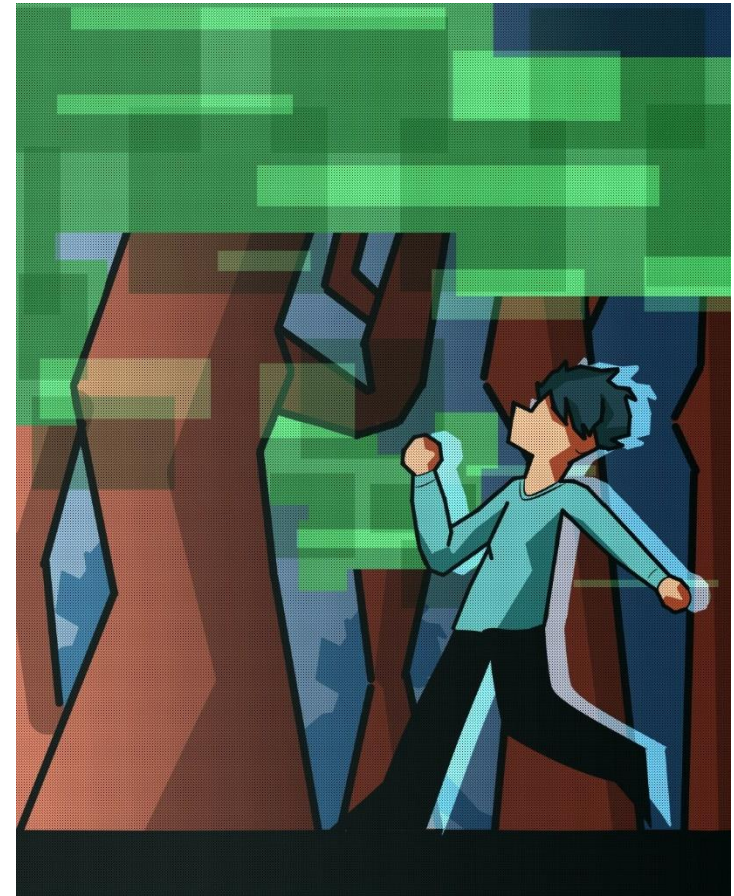
ACTION 4.4 - Increase the City's capacity to ensure that tree protection and planting plans are implemented properly on development sites

DESCRIPTION

Build awareness of City tree protection requirements by developing a tree protection brochure that summarizes all relevant aspects of the tree protection process. Ensure that trees are protected during other municipal operations (e.g., road repair, snow removal) and that City staff involved in development plan review and capital projects are aware of tree-related City policies and guidelines. Ensure that qualified staff are engaged early in the planning process to advise on constraints and opportunities. Incorporate a 'Tree Declaration' as part of Building Permit and related permit applications to facilitate screening for potential tree impacts. Ensure that applicable tree compensation measures are consistently obtained wherever required. Collect tree securities to ensure implementation of approved tree-related plans. Enhance compliance inspection and enforcement processes. Explore feasibility of various tree protection incentives, and deploy accordingly.

PARTNERS

- Capital Works (PWE)
- Enforcement and By-law Services (LS)
- Road Maintenance, Operations and Fleet (PWE)
- Building Industry and Land Development Association (BILD) and non-member builders and developers



ACTION 4.5 - Develop and apply standards for City-owned woodland management

DESCRIPTION

Where woodlands will come into City ownership, develop or require the development of multi-year Woodland Management Plans and implement initial management measures. For all woodlands under City ownership, establish minimum standards for site-specific Woodland Management Plans. Develop and maintain an inventory of all City-owned woodlands to inform asset planning, inventory/monitoring, maintenance, and management. Work with the community and other partners (e.g., local schools) to encourage low-impact woodland use. Where feasible, retain deadfall and snags for wildlife habitat and nutrient cycling benefits and functions. Work with partners to undertake ecological restoration and monitor long-term ecological condition and use of City-owned woodlands.

PARTNERS

- Building Industry and Land Development Association (BILD) and non-member builders and developers
- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG)
- Residents and community members



STRATEGIC GOAL 5: ENGAGE

ACTION 5.1 - Develop and implement an Urban Forest Awareness and Engagement Program

DESCRIPTION

Develop a new full-time Urban Forest Engagement Coordinator staff position to oversee the implementation of OMTP Awareness and Engagement Strategy and other outreach and stewardship-related OMTP and UFMP actions. Example initiatives include green industry and internal (staff and Council) engagement, the Residential Tree Planting Program, heritage tree hunts and tours, community tree planting events, and September “Tree Month” activities.

PARTNERS

- Environment and Development Engineering (PWE)
- Strategic Communications, Culture and Events (CSS)
- Multiple external partners

OMTP ACTIONS

3.1.1, 3.1.2, 3.1.3, 3.1.4, and 3.6

ACTION 5.2 - Support urban forest community-based science

DESCRIPTION

Share selected urban forest data and integrate mapping/data with online service request function. Engage community in long-term monitoring of naturalization plantings and other projects. Allow residents to publicly share basic urban forest data (subject to verification), such as planting sites, private tree inventory, heritage trees, pest/disease reports, service requests, etc. Promote public use of EDDMaps Ontario invasive species mapping tool.

PARTNERS

- Digital Innovation and IT (CSS)
- Environment and Development Engineering (PWE)
- Strategic Communications, Culture and Events (CSS)
- Conservation Authorities (CVC, TRCA)

ACTION 5.3 - Enhance urban forest online and social media content

DESCRIPTION

Build on and enhance existing “Trees” portal on City website, including “Count My Tree” tracker. Expand successful series of videos with content based on timely and relevant topics (e.g., LDD moth, invasive species, OMTP and tree tracker, Brampton Tree Month, etc.) Develop a coherent brand and key messaging across City’s major social media platform accounts, with coordinated yet platform-specific content. Establish process for rapid review, approval and posting of high-priority content (e.g., in response to emergency situations). Develop evergreen, seasonal, and responsive content, as appropriate. Favour video-based content due to higher engagement rates, where feasible. Leverage and interact with existing local “green network” partners to share and amplify content.

PARTNERS

- Digital Innovation and IT (CSS)
- Strategic Communications, Culture and Events (CSS)

ACTION 5.4 - Develop an urban forest products and foods utilization program

DESCRIPTION

With partners, coordinate the safe harvesting of urban forest foods from fruit- and nut-bearing trees in City parks and on other public lands. Identify suitable locations for, and preserve existing, ‘urban forest orchards’ and increase diversity of food-bearing trees and shrubs in these locations and across the city. Identify sources of wood waste suitable for higher-value usage. Develop a process for pre-registration of interested end-users of higher-end urban wood raw materials. Continue participation in urban forest product working groups (e.g., Partners in Project Green) as opportunities arise.

PARTNERS

- Conservation Authorities (CVC, TRCA)
- Peel Region (incl. PUFWG)
- Residents and community members
- School boards (Peel District / Dufferin-Peel Catholic)
- Other: Partners in Project Green partnership



ACTION 5.5 - Encourage and recognize urban forest stewardship

DESCRIPTION

Provide recognition for notable contributions to urban forest stewardship. For example, celebrate neighbourhoods, individuals, businesses, and other partners involved in the Adopt-a-Tree Program in urban forest communications. Recognize developments meeting “aspirational”-level urban forest targets outlined in the Sustainability Metrics and Sustainability Assessment Tool (SAT). Explore incentives such as partial reduction in landscaping requirements or compensation for effective tree preservation, or stormwater charge credits for maintaining impervious surface or tree canopy cover. Collaborate with CVC through SNAP, Greening Corporate Grounds, Sustainable Home Landscapes (Your Green Yard) and other programs to encourage and recognize urban forest stewardship.

PARTNERS

- Strategic Communications, Culture and Events (CSS)
- Conservation Authorities (CVC, TRCA)

OMTP ACTION

3.2

ACTION 5.6 - Develop partnerships for tree establishment and urban forest stewardship on institutional and corporate lands

DESCRIPTION

Partner with schools to increase tree canopy cover on school grounds, and in the development of urban forest-related curriculum support materials to build awareness and engagement among students. Work with Economic Development to conduct appropriate outreach to local ICI sector and other large landowners to explore opportunities for urban forest stewardship on their lands.

PARTNERS

- Economic Development (PBED)
- Environment and Development Engineering (PWE)
- Conservation Authorities (TRCA, CVC)
- Peel Region (incl. PUFWG)
- School boards (Peel District / Dufferin-Peel Catholic)
- Other: Association for Canadian Educational Resources (ACER), Brampton Board of Trade, Business Improvement Areas (BIAs) EcoSource, Evergreen, LEAF, Partners in Project Green, Tree Canada.

OMTP ACTIONS

Schools: 2.4.1, 2.4.2, 2.4.3 and 3.5
Places of worship: 2.5.1, 2.5.2, 2.5.3, and 2.5.4
Corporate lands: 2.7.1, 2.7.2, and 2.7.3)



ACTION 5.7 - Expand the Residential Tree Program in partnership with others

DESCRIPTION

Continue to develop and expand the Residential Tree Program (OMTP Action 2.6.2), which launched in September 2021, by integrating promotion of this program within the broader Outreach and Engagement Program (UFMP Action 5.1). Implement multiple supporting OMTP actions (2.6.2 to 2.6.7).

PARTNERS

- Conservation Authorities (TRCA, CVC)
- Peel Region (incl. PUFWG)
- Others: Credit River Anglers' Association (CRAA), LEAF, Tree Canada, Tree for Me, TreeMobile, others

OMTP ACTIONS

2.6.2, 2.6.3, 2.6.4, 2.6.5, and 2.6.7

ACTION 5.8 - Enhance urban forest information sharing and cooperation across City departments

DESCRIPTION

Continue to leverage Peel Urban Forest Working Group relationship for information sharing and joint projects between local municipalities. Continue and expand the Green City Working Group to facilitate interdepartmental information sharing on high-level and project-specific basis.

LEAD

Green City Working Group

PARTNERS

- Conservation Authorities (TRCA, CVC)
- Peel Region (incl. PUFWG)

OMTP ACTION

3.7

ACTION 5.9 - Partner with institutions, agencies, and organizations in urban forest research

DESCRIPTION

Proactively approach potential partners to express interest in supporting applied urban forest research with mutual benefit and management utility. Support may include access to study sites, staff time, supervisory and technical oversight, or additional in-kind or other contributions. Potential areas of partnership may include pest, disease, and invasive species management; urban forest analysis, urban forest health and climate change adaptation/resilience; social dimensions of urban forestry; others, as identified by partners or management needs.

PARTNERS

- Conservation Authorities (TRCA, CVC)
- Peel Region (incl. PUFWG)
- School boards (Peel District / Dufferin-Peel Catholic)
- Others: Academic institutions, Forests Ontario

ACTION 5.10 - Identify and pursue innovative urban forestry resourcing opportunities from external sources

DESCRIPTION

Implement and promote a Brampton Million Trees Donation Program (OMTP Action 3.3) to support tree establishment across the city. Expand the Residential Tree Program through partnerships and/or other sources of subsidized and/or free trees and/or planting services for residential properties. Explore potential funding and resource sharing opportunities from organizations focused on tree and environmental initiatives. Explore potential public sector funding and resource sharing opportunities, including sources that may not be exclusively aligned with the urban forest. Engage with local First Nations to identify shared goals related to the urban forest and mechanisms for successful collaboration. Work with Peel Region and other area municipalities to advocate for dedicated Provincial support for urban forest planning and management.

PARTNERS

Multiple external partners

OMTP ACTIONS

2.6.1 and 3.3

Glossary

Asset management (asset management planning)

An ongoing and long-term process that allows municipalities to make the best possible investment decisions for their infrastructure assets. This includes building, operation, maintenance, renewal, replacement, and disposal. In many parts of Ontario, existing infrastructure is degrading faster than it is being repaired or replaced, putting services at risk. To help address this issue, the Province implemented the *Asset Management Planning for Municipal Infrastructure Regulation, O. Reg. 588/17*, effective January 1, 2018.

Best practices (best management practices)

Procedures accepted, prescribed or demonstrated by scientific and technical research or industry peers, as producing optimal results and proposed as standards suitable for widespread adoption.

Climate change adaptation

Actions taken by communities to adjust to the impacts of a changing climate.

Equity

In an environmental context – protection from environmental risks as well as access to environmental benefits and services, irrespective of income, race, and other characteristics.

Function

The capacity of trees in the urban forest to provide a diverse range of environmental, economic, and societal and health benefits and services to community members.

Genus (plural genera)

A principal taxonomic category of organisms that ranks above species and below family, and is denoted by a capitalized Latin name, e.g., *Acer* (maple).

Greenfield (i.e., Designated Greenfield Area)

Lands within settlement areas (not including rural settlements) but outside of delineated built-up areas that have been designated in an Official Plan for development and are required to accommodate forecasted growth to the horizon of *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020*. This term typically, but not always, refers to agricultural lands designated for future development.

Green infrastructure

The natural vegetative systems and green technologies that provide society with a multitude of economic, environmental and social benefits. These may include urban forests and woodlands; bioswales, engineered wetlands and stormwater ponds; wetlands, ravines, waterways and riparian zones; meadows and agricultural lands; green roofs and green walls; urban agriculture; parks, gardens and grassed areas; soils in volumes and qualities adequate to sustain green infrastructure and absorb water; technologies such as porous pavements, rain barrels and cisterns; and others.

Integrated Pest Management (IPM)

The maintenance of detrimental insects, weeds and other organisms at tolerable levels utilizing a combination of cultural, physical/mechanical, biological, and microbial/chemical pesticide control methods to keep environmental impacts to a minimum.

Invasive species

A plant, animal or pathogen that has been introduced to an environment where it is not native and where it may become a nuisance through rapid spread and/or population growth, often to the detriment of indigenous species or ecosystem functions.

Inventory (tree)

A tabular and/or geospatial database containing attributes pertaining to the entirety or a subset of the tree population in a defined area. A tree inventory is typically used to inform urban forest maintenance operations and long-term planning.

ISA Certified Arborist®

An arborist who has passed an exam administered by the International Society of Arboriculture (ISA) and maintains the certification credential through continuing education.

Keystone

In an ecological context – a species, system, or function upon which other elements of the ecosystem largely depend, such that if it were removed the ecosystem would be drastically changed or degraded.

Leaf area

The surface area of a leaf or leaves. Most urban forest services increase directly or indirectly with an increase in the leaf area of the urban forest.

Potential Plantable Area (PPA)

Land that is suitable for indefinite use as tree habitat and not constrained by competing existing or projected site uses or land use values.

Sequestration (carbon)

The process of removal of atmospheric carbon dioxide gas (CO₂) by plant tissues. In the context of urban forestry, carbon sequestration is typically expressed on an annual basis as the difference in estimated carbon storage between year x and year x+1.

Species

A group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding. The principal natural taxonomic unit, ranking below a genus and denoted by a binomial, e.g., *Acer platanoides* (Norway maple).

Stewardship

The careful and responsible management of something entrusted to one's care.

Storage (carbon)

A measure of the carbon that is stored within above-ground and below-ground woody vegetation. Trees and other plants sequester atmospheric carbon dioxide gas through photosynthesis and store carbon in stems and roots. Stored carbon can be released back into the atmosphere as plants die and decompose, when it can reform into carbon dioxide gas and contribute to climate change. Carbon sequestered by trees can be permanently stored in wood products.

Structural pruning

Tree pruning with a primary objective of developing solid tree structure, typically characterized by strongly dominant central leader, adequately spaced and well-attached branches, and appropriate stem taper.

Tree

A woody perennial plant, typically having one dominant trunk and capable of attaining a considerable mature height.

Urban forest

The mix of the remnants of native forest cover and planted trees and vegetation on all private and public lands in and around the built-up areas. The urban forest includes municipally-owned street, park and facility trees, trees in valleys and woodlands, and privately-owned trees on residential properties or on commercial, industrial, and institutional lands, among others.

Urban forest (tree) canopy cover

The spatial extent or coverage of vegetation (generally trees), commonly expressed as a simple area or as a percentage of total land area.

Urban Heat Island

A significant and observable increase in ground level temperatures in urban areas relative to surrounding rural areas due to the presence of structures and paved areas with greater thermal mass and different surface reflective properties. The temperature differential is typically most apparent and greatest at night, when winds are weak, and during summer and winter. Urban heat islands have the potential to directly and adversely influence the health and welfare of urban populations through direct and indirect causes. Also known as the heat island effect.

Image credits

Most images in the Brampton UFMP appear courtesy of community members who submitted their original artwork to the Brampton Urban Forest Art Contest, held in late 2020. The UFMP project team would like to thank all contestants for their submissions, and regret that space limited the number that could be showcased in this document.

<i>Cover - Sujana Haider</i>	<i>Pg. 35 - Mehnoor Wachhair</i>
<i>Table of Contents - Kasturi Bhatt</i>	<i>Pg. 37 - Roshani Badheka</i>
<i>Pg. 4 - Amanda Ocampo</i>	<i>Pg. 38 - Chantal Crabbe</i>
<i>Pg. 8 - Anna Sizova</i>	<i>Pg. 40 - Maanasvi Satish</i>
<i>Pg. 10 - Cristina Jordan</i>	<i>Pg. 41 - Dhruvi Patel</i>
<i>Pg. 11 - Jagtar Singh Jaura</i>	<i>Pg. 43 - Keshvi Vaghela</i>
<i>Pg. 12 - Dolson P.S. Grade 2 Class</i>	<i>Pg. 45 - Pratishtha</i>
<i>Pg. 13 - Nimesh Shah</i>	<i>Pg. 46 - Tejvansh Malik.</i>
<i>Pg. 15 - Mei Le Wong</i>	<i>Pg. 48 - Hannah Spice</i>
<i>Pg. 16 - @maryperkinspaintings</i>	<i>Pg. 51 - Karen</i>
<i>Pg. 17 - Yzabelle Bisa</i>	<i>Pg. 52 - Sarmistha Pal</i>
<i>Pg. 18 - Malika Haider</i>	<i>Pg. 55 - Deva De Silva</i>
<i>Pg. 22 (left) - Rachel Lim</i>	<i>Pg. 56 - Julio Echia</i>
<i>Pg. 22 (top right) - Johal</i>	<i>Pg. 57 (top) - Shannia Lewis</i>
<i>Pg. 22 (bottom right) - Ranjeeta Saimbhi</i>	<i>Pg. 57 (bottom) - Shriyans</i>
<i>Pg. 25 (left) - Perli Modi</i>	<i>Pg. 60 - Viraat</i>
<i>Pg. 25 (right) - Gurkamal Kaur</i>	<i>Pg. 61 (left) - Sandeep Sandhu</i>
<i>Pg. 26 - Tara Monterroso</i>	<i>Pg. 61 (right) - Paramjit Goraya</i>
<i>Pg. 30 - Hirnakshi Joshi</i>	<i>Back cover - Amrita Kaur</i>

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