



Natural Heritage &
Urban Forest Strategy

A Guide to Mississauga's Natural Heritage and Urban Forest Strategy

A long-term plan for our Natural Heritage



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Introduction

With more than 2,737 hectares and 2.1 million trees, Mississauga's natural heritage system and urban forest are a significant part of our city's landscape. These woodlands, wetlands, meadows and other natural areas provide us with clean air and water, give us shade from summer heat and protect us from winter winds. They also provide spaces for outdoor recreation which are essential for our physical, mental and spiritual well-being.

Our natural heritage system and urban forest are closely linked with other parts of a larger structure known as the City's Green System that contributes to a valuable natural environment in the city.

What is the Natural Heritage and Urban Forest Strategy (NH&UFS)?

The NH&UFS (or the Strategy) is a plan that outlines ways to keep the natural features we have now and improve them over the long term. It recognizes that for Mississauga to continue to grow and develop in a healthy way we need to plan for the future. By carrying out the NH&UFS we can ensure that we are protecting our natural areas, urban forest and wildlife for present and future generations. Mississauga is the first municipality to combine its natural heritage and urban forest into one complete strategy.

*The NH&UFS study was led by the Park Planning Section, City of Mississauga.
The Urban Forest Management Plan (UFMP) study was led by the Forestry Section, City of Mississauga.*

This guide is prepared for the purpose of convenience only. For accurate reference, the original NH&UFS and UFMP as approved by the City of Mississauga should be consulted.

The City of Mississauga would like to thank all those who kindly gave their time, energy and ideas to develop these important plans.



How will this strategy be used?

The City of Mississauga is considered a leader in natural area and urban forest management. However, like most of southern Ontario, our natural areas and woodlands have faced many challenges – climate change, population growth, new home and road development, severe weather and damage from species that are not native to our region (invasive species). The City is looking at ways to proactively manage these challenges and sustain the long-term health of our trees and natural areas. The NH&UFS will also allow us to become more resilient and able to adapt to climate change.



Mississauga's Natural Heritage System and Urban Forest are closely linked with each other and with other components of Mississauga's Green System

What is:

• **A natural heritage system?**

A natural heritage system is a collection of natural features including woodlands, wetlands, meadows, valleys, rivers, streams and natural landscapes. The urban forest is one of the components that make up the natural heritage system. These natural features are linked to each other by corridors and work together in a system to provide the habitat needed for plants, wildlife and people.

• **The urban forest?**

The urban forest includes all trees, shrubs and understory plants – and the soil that supports them – on both public and private lands.



Developing the Strategy

How was the Strategy created?

Developing the NH&UFS involved extensive research, consultation and collaboration with partners and residents. This included reviewing:

- ✓ Current plans, policies and initiatives in the city and surrounding municipalities
- ✓ Best practices in natural heritage and urban forest management
- ✓ The condition of Mississauga's natural heritage system and urban forest
- ✓ Areas that could be added to the City's natural heritage system
- ✓ Policy choices
- ✓ Ways to connect to the UFMP

The NH&UFS was built on the ideas and input of a wealth of individuals and groups, including:

- Aboriginal organizations
- Business and development organizations
- City Council committees
- Community groups
- Environmental groups
- Government agencies
- Local arboriculture firms
- Local utility and transit companies
- Local conservation authorities
- Neighbouring municipalities
- Recreational groups
- Region of Peel
- Residents and resident associations

How is Mississauga's natural heritage system doing?

Research shows several changes to our natural heritage system have happened over time. Some of these are cause for concern, including fewer small wetlands, changes in plant communities and less variety of amphibians (frogs, toads and salamanders) found across the city. At the same time, more naturalization projects have expanded the natural heritage system in some areas.

Overall, the studies point out the need to:

- Strengthen protection for natural areas, particularly woodlands and small wetlands
- Focus attention on protected areas that are owned by the City or conservation authorities
- Improve the ability of habitats to support different plants and animals and, where possible, expand these habitats
- Help to lower the impact climate change is having, especially with respect to our amphibians
- Increase support for stewardship projects that are already happening in Mississauga



Looking north along the Credit River, Streetsville Memorial Park is located on the right

How is Mississauga's urban forest doing?

The City is further ahead than many other municipalities in terms of forest management. Our urban forest canopy cover is approximately 15 per cent of the city's neighbourhoods. Most trees are maple and ash and they range in size from small to large.

Studies completed on our urban forest point out the need to:

- Plant trees in places with low canopy cover
- Care for recently planted trees so they can mature to have larger canopies
- Plant different types of trees on public and private land to make sure the urban forest is able to recover from threats
- Recognize the importance of our neighbourhoods and remaining natural areas for tree canopy cover

Directions for the Future

The vision

The vision, guiding principles and objectives that guide both the Strategy and the UFMP give us clear direction for the next 20 years. The vision is:

“Together we will protect, enhance, restore, expand and connect Mississauga's Natural Heritage System and Urban Forest to sustain a healthy community for present and future generations.”

How are Mississauga's natural heritage and urban forest currently managed?

Since 1996, our natural heritage and urban forest have been managed through a combination of on-the-ground projects, educational programs, policies and guideline initiatives at the provincial, regional and municipal levels. Many activities focusing on natural heritage planning and monitoring are carried out by the City in partnership with Credit Valley Conservation (CVC) and Toronto and Region Conservation Authority (TRCA).





Guiding principles

The Strategy is built on the following principles:

1. Act now
2. First protect – then enhance, restore and expand
3. Make the most of native plant and animal diversity
4. Recognize and build on past and current successes
5. Learn from our past and from others
6. View the natural heritage system and urban forest as part of the City's broader Green System
7. Understand the value of the City's Green System and the key ecological services it gives
8. Make stewardship on public and private lands part of our daily lives
9. Bring climate change factors into natural heritage and urban forest planning
10. Protect, enhance, restore and improve natural connections
11. Track the state of the natural heritage system and urban forest and practice Adaptive Management (an approach to planning that allows us to adapt to changes over time)
12. Recognize natural areas and the urban forest as critical parts of the City's infrastructure



View of the city's downtown core, looking east from Burnhamthorpe Rd.

Objectives

The NH&UFS has nine objectives to work towards over the next 20 years. Briefly, these are to:

General

1. Increase awareness of the value and need of the City's natural heritage system and the urban forest.
2. Expand the city's natural heritage system and urban forest.
3. Strengthen public and private sector partnerships to help carry out the Strategy's vision.
4. Carry out regular monitoring of the natural heritage system and urban forest to check how well it is doing and identify changes that may require closer attention.

Public lands

5. Protect the natural heritage system and urban forest on public lands through management, enforcement and education.
6. Enhance and restore the natural heritage system and urban forest on public lands through services that improve natural areas, connections and tree planting.
7. Manage public open spaces to make the most of their ecological functions while keeping their current uses.

Private lands/properties

8. Protect the natural heritage system and urban forest on private lands through education, enforcement of applicable policies and rules and linking the Strategy to the development review process.
9. Enhance and restore the natural heritage system and urban forest on private lands by promoting stewardship, naturalization, restoration, tree planting and proactive tree care with creative outreach and incentives.

Strategies and Supporting Actions



NH&UFS recommended strategies

The Strategy provides advice on how to best manage Mississauga's natural heritage system and urban forest, while we support our city's growth and economic development. It includes 26 strategies organized under four themes:

- 1 **Planning**
- 2 **Protection and Management**
- 3 **Engagement and Partnerships**
- 4 **Tracking**

Many of these strategies are supported by actions in the UFMP. These actions are specific to on-the-ground activities to help meet the Strategy objectives.

The following pages give a summary of the strategies in each of the four themes.



1 Planning

Good planning must have clear policies that meet the needs of Mississauga while staying consistent with regional and provincial policies.

What are we doing now?

Mississauga's natural heritage is managed through policies outlined in the:

- Strategic Plan
- Official Plan
- Future Directions Master Plan for Parks and Natural Areas
- Living Green Master Plan

Together these plans provide the direction for the City to balance protecting its natural heritage with its need for growth and development.



What should we be doing in the future?

Ten planning strategies create a policy framework which provide greater support to our natural heritage through activities such as:

- Improving how information is shared across City departments and with other municipalities
- Making existing policies stronger, more consistent with provincial and regional policies and easier to understand
- Updating maps of Residential Woodlands
- Making current by-laws that support the natural heritage system and urban forest stronger
- Improving current guidelines and introducing others that help support green infrastructure (see table to the left)

| Grey Infrastructure (built features) | Green Infrastructure |
|---|--|
| <ul style="list-style-type: none"> • Buildings • Roads, highways and parking lots • Storm and sewer lines • Public utilities (e.g., hydroelectric lines and stations, natural gas lines, water pipes and filtration plants) | <ul style="list-style-type: none"> • Trees, shrubs and soil • Rain gardens and naturalized swales • Wetlands (man-made and natural), woodlands and meadows • Green roofs and living walls • Engineered soils and permeable pavement |

2 Protection and Management

We need to protect, maintain and manage our natural heritage system and urban forest to keep them healthy for the long term.

What are we doing now?

Mississauga is a municipal leader in natural heritage conservation and continues to carry out activities that have kept our natural heritage and urban forest as healthy as possible. These include:

- Limiting development in natural areas
- Hosting community tree planting events
- Enforcing tree protection guidelines
- Acquiring valuable natural areas when we can



What should we be doing in the future?

Mississauga must continue to look for new ideas to build a healthy natural heritage system. There are eight protection and management strategies to ensure we are proactively and strategically protecting our natural heritage, including:

- Expanding and enhancing both the natural heritage system and the urban forest
- Focusing on the protection of areas that connect natural features and protecting them
- Proactively managing and increasing the number of healthy trees on private and public lands throughout the city
- Strategically buying or receiving high priority natural areas and lands
- Ensuring that we apply and enforce the City's natural heritage system and urban forest policies, guidelines and by-laws

The Strategy also promotes continuing partnerships with local conservation authorities to identify ways to protect and improve our aquatic ecosystems.



3 Engagement and Partnerships

We need support from the public and private sectors to reach our strategic objectives.

What are we doing now?

The City of Mississauga, together with its agency partners and nearby municipalities, have extensive programs and projects to educate and engage our community in natural heritage protection. This includes the City's website, pamphlets, fact sheets, and a number of open houses on topics of high interest. The City was one of the first municipalities to develop a city-wide brochure for residents living next to City-owned natural areas that provide guidance "do's" and "don'ts".



Community tree planting where volunteers planted native trees and shrubs along the Credit River

The City works with local businesses, agencies, municipalities, residential land owners, schools, colleges, universities and others through stewardship and partnership activities. Many community groups and individuals in Mississauga are also working on their own to protect our natural heritage system.

What should we be doing in the future?

There are seven strategies in the NH&UFS and 10 actions in the UFMP related to engagement and partnerships that the City will pursue to foster community interest and action. These include:

- Using social media and other innovative means to reach out to more people in the city
- Continuing to support and expand programs that reach out and engage youth, businesses, community groups and residents for stewardship of private lands (e.g., schools, residences, etc.)
- Creating an awareness raising campaign about the natural heritage system
- Making the City's tree inventory available to the public
- Increasing awareness about the City's natural heritage and urban forest policies, by-laws and technical guidelines
- Exploring new funding and cost-effective incentive programs to help reach our natural heritage system and urban forest objectives

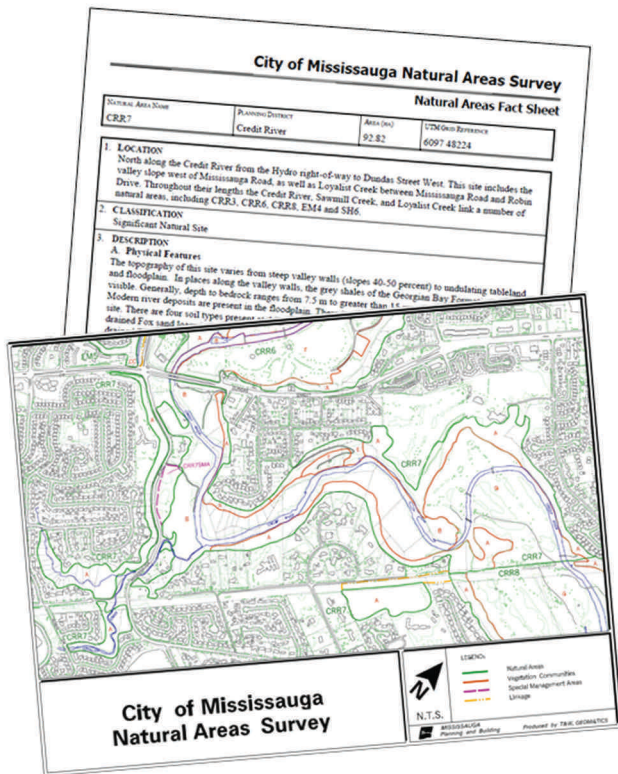
Improving partnerships and looking for joint initiatives with the Region of Peel, agencies, institutions and neighbouring municipalities is also central to this Strategy.

4 Tracking

Tracking and knowing the state of the natural heritage system and urban forest will help protect, enhance, restore and expand them.

What are we doing now?

Mississauga is the only municipality in Ontario that has a natural heritage database with more than 15 years of field research. The City does a high level review of the Living Green Master Plan actions once a year. However, there is no monitoring system to assess the natural heritage system and the urban forest together. Collection and sharing of key pieces of information will help decision-makers provide proactive direction for the management of the City's natural heritage system and urban forest.



What should we be doing in the future?

A key component to this theme involves tracking and reporting the state of the natural heritage system and urban forest. Activities include:

- Adopting the monitoring framework developed as part of the Strategy
- Monitoring the natural heritage system and the urban forest with help from the Region of Peel, local agencies and other partners
- Highlighting major changes to the natural heritage system so that urgent management responses can be made
- Conducting a city-wide state of the NH&UFS report once every four years
- Reporting back in user-friendly formats



The Urban Forest Management Plan

The UFMP is a response to challenges facing the City's Urban Forest as we continue to grow and is tightly connected to the Strategy. It shares the same vision, guiding principles and objectives.



The City's Forestry staff is responsible for managing, maintaining, growing and restoring both the natural heritage system and the urban forest. The City uses both proactive and responsive measures to maintain and monitor the health of the City's publicly-owned trees and natural areas. Existing programs, such as One Million Trees Mississauga, focus on expanding the urban forest through tree planting with community involvement. These programs are run by municipal staff and contractors, private property owners and various types of volunteers.

The City also has a mix of policies, by-laws and guidelines that support the protection of trees and has been actively engaging residents, private landowners and other groups across the city to support the sustainability of the urban forest.



Extensive restoration planting along Highway 403

Many of the previously described strategies from the Strategy are supported by actions in the UFMP. These recommended actions in the UFMP are more specific, on-the-ground activities organized under five key themes to meet the Strategy objectives.

1. Urban forest management and administration

Efficient, effective management and administration will help improve tree protection. It allows us to adjust activities in a way that responds to changing needs and priorities in Mississauga.

The UFMP has five actions to improve the management of the City's urban forest, through data collection, partnerships and sharing information.

The actions include:

- Adopting the monitoring framework developed for Mississauga's NH&UFS
- Working with the Region of Peel, local agencies and other organizations to monitor the status of the natural heritage system and urban forest
- Reinforcing co-ordination and information sharing between City's forestry and planning staff
- Improving city-wide tree preservation and planting guidelines
- Keeping an up-to-date list of city street and park trees



3. Tree establishment, naturalization and urban forest expansion

Being more strategic in tree planting locations, keeping track of where naturalization projects are happening and providing good standards for planting trees in development areas will benefit urban forest expansion and create better linkages between natural areas.

The UFMP has actions that build on the City's current efforts to grow our urban forest based on land use and ecosystem criteria. These actions include:

- Identifying areas that are a priority for tree planting
- Mapping naturalization projects that are happening around the city and continuing to find ways to increase support for these projects
- Promoting best practices for tree planting in development projects that ensure good growing conditions for trees



2. Tree and natural area health and risk management

More frequent attention to trees and better management of potential threats will help improve tree health.

The UFMP has actions to improve the way the City assesses tree and natural area health and manages risk. The actions highlight what should be done to proactively maintain tree health:

- Ensuring street and park trees are inspected and maintained as is needed for their health
- Designing a maintenance program to care for young street and park trees
- Developing a risk management protocol for street and park trees

The actions also show the need for short-term and long-term activities to manage invasive species, disease and pests by preparing an Urban Forest Pest Management Plan and by introducing targeted actions to control invasive plants throughout the city.



4. Tree protection and natural area management

Updated and effective by-laws, policies and guidelines will promote urban forest sustainability and showcase Mississauga as a proactive leader in tree and natural area management.

The UFMP includes actions that focus on by-laws and policies, including:

- Updating existing by-laws (e.g., Public Tree Protection By-law, Erosion Control By-law, Nuisance Weeds and Encroachment By-laws and Private Tree Protection By-law)
- Including proactive measures to protect trees during private and public development projects
- Creating Conservation Management Plans for City-owned Significant Natural Areas



This program will see one million trees and shrubs planted in Mississauga by 2032

5. Promotion, education, stewardship and partnerships

Appreciation of the full value of the urban forest, broad engagement in stewardship activities and strong partnerships are critical to the sustainability of the urban forest.

The UFMP will strengthen awareness, engagement and partnerships that support urban forest sustainability through actions such as:

- Forest stewardship activities
- Continuing to develop and expand partnerships for urban forest stewardship, monitoring and research
- Designing a City Arboretum/Memorial forest for people to build and expand their spiritual connections to nature
- Ensuring good information sharing about the urban forest between the City, the Region of Peel and neighbouring municipalities

Putting the Strategy into Action

How will the Strategy be executed?

Two implementation guides have been created that outline what needs to happen to carry out the NH&UFS and the UFMP over the next 20 years. For each of the recommended strategies and actions, the guides include:

- Timeline for carrying out activities
- Leading City departments
- Specific tasks
- Estimated staffing and funding needed
- Possible community partnerships and/or funding

What can I do to help?

With a significant portion of the natural heritage system in Mississauga located on private land, we need the participation of landowners, businesses and residents, along with other City partners to make the NH&UFS successful.

There are many ways for residents to get involved in the efforts to protect our natural heritage and urban forest:

- Participate in tree planting and stewardship events
- Adopt a park or street through the Volunteer Cleanup program
- Visit our parks and green spaces
- Visit our website to get more information
- Learn more about our natural heritage and urban forest
- Provide feedback at public meetings

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