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**GUIDE** 

# **ACKNOWLEDGEMENTS**

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GMF is a globally unique and catalyzing mix of funding and capacity building that leverages a \$2.4 billion investment from the Government of Canada to give municipalities the tools they need to accelerate their transition to a resilient, net-zero, sustainable future. For more than two decades, GMF has helped communities adopt high-performing climate solutions and practices faster.





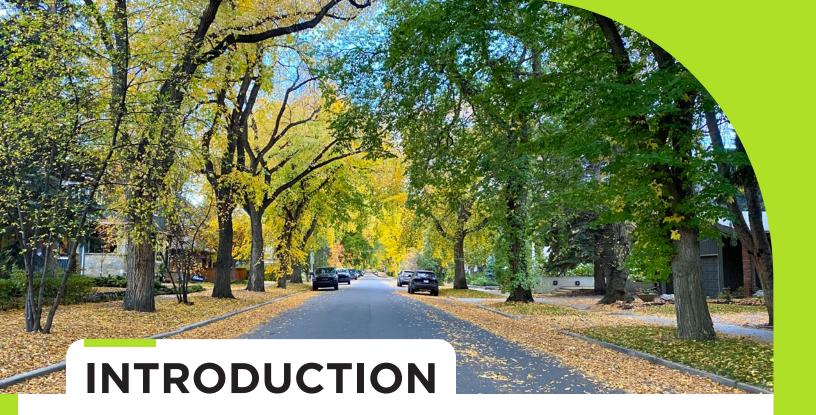






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A key step in the journey to a healthy and resilient urban forest is creating an **urban forest management plan (UFMP)**. A UFMP establishes a long-term vision and sets clear goals for growing, protecting and maintaining the urban forest, serving as a roadmap to ensure the urban forest provides maximum social, environmental and economic benefits to the entire community.

With informed planning and management, communities can set priorities for tree planting and maintenance, engage and educate residents, and respond effectively to challenges like extreme weather or pests. Proactive planning also supports more efficient decision-making and reduces the need for reactive responses.

A well-designed UFMP empowers communities to protect and manage their urban forests. This guide outlines how to develop and implement a UFMP that promotes long-term sustainability and community wellbeing.

This guide uses **urban forest management plan**,
or UFMP, to describe any
comprehensive, long-term
plan or strategy focused on
managing, enhancing and
sustaining urban forests. Some
communities may use a different term, such as urban forest
strategy or urban forest master
plan, to describe similar types
of plans.

#### WHO IS THIS GUIDE FOR?

Municipal staff who are leading urban forestry work in their communities will find this guide particularly useful as they create and implement a UFMP. It will help you:

- Identify who should be involved in creating and implementing the plan.
- Explain the importance of proactive research and planning in urban forest management.
- Compile and assess key data and information to drive your urban forest priorities.

- Engage the community and develop a shared vision for your community's urban forest.
- Set goals, targets and actions for urban forest management.
- Determine how you will implement your plan, including additional plans, policies or guides that support implementation.



For an overview of the value of urban forest planning, review our factsheet on how to plan for long-term success.

If your community is just starting out, you may wish to follow this guide step by step. If you have already done some urban forest planning work, you might choose to skip or rearrange steps to fit your needs.

# GMF's **Growing Canada's Community Canopies**

provides funding, resources and training related to urban forestry plans and studies.

Visit <u>GreenMunicipalFund.ca/</u> trees for more information.

#### HOW TO USE THIS GUIDE

This guide takes you through a six-step process to develop a UFMP, as follows:



1. Who needs to be involved?



2. What do you have now?



3. What do you want to achieve?



**4.** How do you get there?



5. How do you stay on track?



6. What comes next?

# SCOPE AND LIMITATIONS OF THIS GUIDE

This guide is a reference and a starting point to help you create or update your community's UFMP. You are encouraged to consider your community's local context and needs when deciding which steps to take and what to prioritize. Consider what research will ensure your plan is relevant, actionable and tailored to your community and be sure to obtain professional guidance from a dedicated project team.



A well-designed urban forest management plan (UFMP) takes a structured approach to tree planting, maintenance and preservation. It enables communities to make informed decisions about how to manage their urban forests by setting clear and achievable goals, such as establishing canopy growth targets, improving policies, adjusting maintenance schedules and increasing community engagement.

Once approved by council, UFMPs can be used to help secure funding and resources for the life of the plan.

UFMPs are also effective communication and collaboration tools. Internally, they help staff track progress and coordinate efforts across departments. Externally, they promote transparency, foster public support and encourage community involvement in sustaining the urban forest.

Before you start developing a UFMP, it is helpful to build a clear narrative to explain why your community needs the plan. Identifying **drivers** and **barriers** can help.

- Some common drivers include climate change, pests, diseases and development pressures, all of which can put stress on the urban forest and motivate efforts to increase urban forest resilience. You may also be motivated by a desire to plan more efficiently, reduce replanting and maintenance costs, mitigate urban heat in your community or any similar reasons.
- Certain barriers may limit your ability
  to manage the urban forest, such as
  limited resources (staff or budget),
  time constraints or competing priorities.
  Acknowledging barriers can help you
  explain the need for a UFMP, and the
  plan itself will help you overcome these
  barriers—for example, by allocating new
  resources to the urban forest or setting
  out a schedule for priority actions.



The development of an urban forest management plan (UFMP) is usually led by planning or urban forestry staff with support from other relevant municipal departments and/or external participants.

Departments working directly in the management of urban trees often include parks and recreation, urban forestry, environment and public works. Other departments such as community services, planning, engineering or emergency services may not manage urban forests directly but are affected by how they are managed. These departments may have plans or initiatives that align or conflict with urban forestry goals and therefore should be consulted during the planning phase. In Ontario, conservation authorities are also typically involved in urban forest management planning. Although they are distinct from municipalities, they are responsible for managing and monitoring many natural habitats within municipal boundaries.

There are also external participants who may be invested in the outcomes of a UFMP and can provide valuable local knowledge to help with setting goals and supporting the implementation of the UFMP. These participants include Indigenous communities or organizations, local businesses, community groups, environmental non-governmental organizations, academic institutions and individual residents.

While external participants sometimes serve as part of a project steering committee, more typically they will be involved through community engagement activities, as outlined in <u>Step 3</u>.



Before beginning work on your plan, take some time to define the roles and responsibilities of your project team.

Identify an executive-level project sponsor to act as project champion, as well as the staff member(s) who will manage the development of the plan.

Confirm council support for the plan and identify any existing council committees, or consider the value of establishing one, to provide input as the plan is drafted. Committees can be a great way to get regular input and feedback from internal and external participants who are not directly responsible for researching, designing and drafting the plan.

Ensure your team is well-rounded and that you have representatives with experience in a variety of areas, including urban forestry, strategic planning, facilitation, consensus building, planning and policy development, and budgeting.

Document the specific responsibilities of each team member in a project charter, workplan or other guiding document. Consider using project management tools such as a RACI matrix to assign roles for project deliverables and activities:

- **Responsible:** The individual who is expected to carry out the task.
- Accountable: The individual who is accountable for the successful completion of the task and provides sign-off or approval.
- Consulted: The individual or individuals who provide advice and subject matter expertise to guide task completion (e.g., those who are part of a planning committee).
- **Informed:** The individual or individuals who receive updates on project status or key decisions to maintain transparency.



The <u>Township of Langley</u>, BC formed a Tree Protection Advisory Committee (TPAC) to inform the development of its first community forest management strategy. The TPAC provides advice and guidance on tree planting, preservation and protection efforts, including advising on the strategy, acting as a community liaison and collaborating regularly with municipal staff.

The committee comprises at least two-thirds Township residents or business owners, along with experts in arboriculture, forestry, climate action and ecosystem planning.



#### **WORKING WITH CONSULTANTS**

To develop a UFMP, many communities choose to work with urban forestry consultants who can offer expertise in urban forest management, strategic planning or engagement that may not be available in-house. If you have decided to work with a consultant, here are a few tips to help you build a successful partnership:

- Clarify your project objectives and confirm any assumptions with team members and decision-makers.
- Determine what resources, including budget and staff time, can be allocated to the project and include a contingency fund for unexpected costs.
- Occument your requirements as specifically as possible in your request for proposals, including expected deliverables and formats.
- Require prospective consultants to outline how they intend to guide the development of the UFMP and ask them to provide samples of prior work and references.
- Put a strategy and schedule in place for communicating progress to staff and council. This will help keep the project on schedule, communicate success and keep the municipal team connected to progress. Specify whether the consultant is expected to be part of presentations to council about the plan.
- Start planning for implementation from the outset.



Review our tip sheet on <u>avoiding common challenges when working</u> <u>with consultants</u> to learn more. While these tips are focused on asset management, they are relevant to diverse project areas, including urban forest management.



#### STAFFING, RESOURCE AND BUDGET CONSIDERATIONS

Implementing a UFMP may require the creation of new positions and expanded responsibilities, workload and capabilities within a community's urban forestry team. This is because UFMPs often call for the development or expansion of urban forestry activities such as tree planting, maintenance, monitoring and community engagement initiatives.

Meeting these expanded goals may require additional personnel and resources, which can have significant budget implications for the urban forestry department. It is important to consider this possibility early on in planning and when consulting with council to ensure there is support for an increase in budget and resources.

To support successful implementation, UFMPs or their supporting documents should include a detailed breakdown of staff responsibilities and relevant departments, both for current and new roles. They should also outline the equipment, materials and facilities needed to fulfill the plan's objectives. Additionally, estimated costs for hiring staff and acquiring necessary resources should be clearly presented to ensure informed budgeting and resource allocation. This is covered in more detail in <a href="Step 4">Step 4</a>.



Developing an urban forest management plan (UFMP) requires an in-depth understanding of the current state of your community's urban forest and how it is managed. Determining what your community already has, including challenges, gaps and opportunities for improvement, allows your project team to set a vision and priorities and make evidence-based decisions to inform the development of your UFMP.

This involves collecting and analyzing **data** about the urban forest and your community, as well as documenting **practices**, **plans and policies** that affect the management of your urban forest.

#### URBAN FORESTRY STUDIES AND ANALYSES

To ensure your UFMP is grounded in accurate and current information about the trees and people in your community, you will need to collect and analyze data related to:

- municipal trees
- canopy cover and distribution

- land use and urban forest history
- demographics, including data on equity-deserving groups
- risks (e.g., financial risks, environmental risks)
- climate change

Listed in this section are a number of sources of information that can provide you with the data you need to develop your UFMP and maximize the benefits of your urban forest, ranked from vital to important to optional.

#### Municipal tree inventory - VITAL

A tree inventory is a prerequisite for effective urban forest management, planning and budgeting. It outlines detailed information on individual trees or groups of trees within publicly managed natural spaces, parks and streets.

Tree inventories typically document the species, size (e.g., height, diameter at breast height), structure, health and location of trees in a municipality. This data helps communities understand how different

species and tree sizes are distributed, monitor tree health and risk, and plan for maintenance. When deciding what type of data to collect for your inventory, consider which information will be most useful for the needs of your community.

GIS-enabled tree inventory data can be continually collected in the field to support efficient tracking of key management tasks, such as:

- risk assessment and mitigation
- new tree planting and replacement planting
- maintenance scheduling (e.g., pruning, watering, pest control)
- · pest and disease monitoring
- work history and associated costs

If your community does not yet have a tree inventory database or a municipal database that can be adapted to record tree-related data, consider the intended use of the data (e.g., tracking work orders, monitoring pests), ease of use, available budget and compatibility with existing systems before selecting or updating software.

Tree inventories also provide information that will help you:

- Establish levels of service for activities such as pruning and young tree maintenance.
- Plan for staffing, equipment and budget needs.
- Set measurable actions for urban canopy and ecosystem services growth.
- Understand current and emerging threats to the urban forest, including which trees are most vulnerable to extreme weather events, pests or diseases.
- Communicate the state of the urban forest to decision makers and the public.

Inventories should be maintained cyclically (e.g., with a scheduled pruning cycle) or updated periodically (often every five to ten years) to maintain an accurate picture of the urban tree canopy and track potential hazards.

### FIGURE 1: EXAMPLE OF MAP OF PUBLIC TREES



Source: City of Thunder Bay trees open data portal



The <u>City of Thunder Bay</u>, ON summarizes its tree inventory in its urban forest management plan (pp. 9-15), including graphs that illustrate the distribution of species, size classes and tree conditions, a map of public trees (Figure 1) and recommendations linked to the information tracked in the tree inventory.

#### WHAT IS A PLANTING SITE INVENTORY?

Sometimes integrated with tree inventories, a planting site inventory maps and assesses suitable locations for tree planting based on factors like available space, site conditions and infrastructure constraints. This type of inventory supports strategic planning by providing locations for future plantings, along with an assessment of or plans to assess each site, to better understand potential challenges and the budget and staff needed to prepare a site for tree planting. This information can be collected using both remote sensing and GIS mapping combined with ground-based surveys to verify and evaluate sites.

See how the <u>City of Fredericton</u>, NB presents its plantable area analysis in its urban forest management strategy (pp. 19-20).

#### Canopy cover analysis - VITAL

A canopy cover analysis measures the percentage of land area covered by trees. It assesses the extent and distribution of the urban forest and can be used to monitor change over time. This analysis provides baseline information needed to establish canopy cover targets and pinpoint areas with low canopy cover for targeted planting. You can also integrate this data with demographic and health data to prioritize planting in specific neighbourhoods (see *Planting prioritization study*).

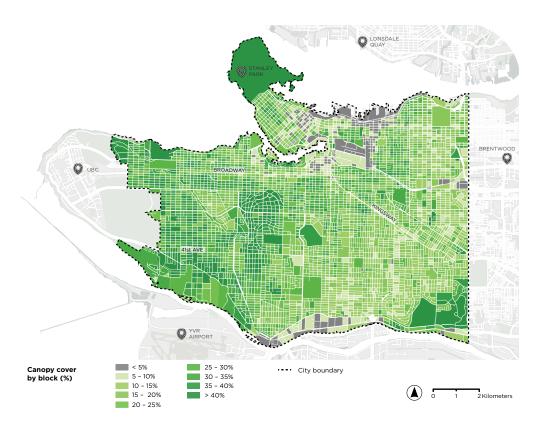
Canopy cover analyses can be completed using different methods, all of which combine remote sensing and GIS analysis. The most common forms of remote sensing methods include the use of LiDAR technology, aerial imagery and satellite imagery.



To learn more about tools used in canopy cover and other urban forest analyses, review our factsheet on urban forestry technology and tools.



FIGURE 2: EXAMPLE OF CANOPY COVER MAPPING BY BLOCK



Source: City of Vancouver Urban Forest Strategy



The <u>City of Vancouver</u>, BC presents its canopy cover by neighbourhood and by block in its urban forest strategy (Figure 2), and tracks changes in the canopy cover over time (pp. 24–30). Additionally, the city explores equity in canopy and street tree distribution by mapping where gaps in the canopy cover intersect with disproportionally impacted populations (pp. 39–44).

#### Canopy growth modeling - IMPORTANT

Canopy growth modeling is a process that predicts how the tree canopy in an area can develop and change over time. It considers factors such as tree growth rates, mortality rates, planting rates, available plantable spaces and tree removal rates. It uses data on existing trees, species characteristics, environmental conditions, plantable spaces and management practices to simulate future canopy cover under different scenarios.

You can use canopy growth modeling to set realistic tree planting goals and canopy cover targets for your UFMP. These models support decision making about how many additional trees to plant and where to plant them; identify locations and conditions that lead to increased mortality; and help plan for various climate, pest and disease management scenarios.

The <u>City of Saskatoon</u>, SK explored its tree canopy's growth potential by performing canopy growth modeling in its urban forest management plan (pp. 27–28). The analysis allowed the city to predict future canopy cover for different tree age classes, including new, young, semi-mature, mature and old trees.



The <u>City of Windsor</u>, ON used canopy growth modeling to set annual tree planting targets in its urban forest management plan (p. 66). In a <u>2020 assessment</u>, the city determined that the existing planting rate of 1,000 to 1,200 trees per year would result in a gradual decline in the canopy cover from 19 to 17 percent by 2050. As a result, the city set a new target annual planting rate of 3,500 trees per year, to increase its canopy cover to 22 percent by 2045.



### Municipal forest structure assessment - IMPORTANT

In forested or woodland areas, it is not practical to inventory every tree individually. A municipal forest structure assessment provides a practical alternative by mapping forested zones into stands (groups of trees with similar traits like species mix, age, size or condition) and applying stratified sampling. This approach enables data on species composition, tree density, diameter at breast height, height and condition to be collected across a representative sample of forest areas, without the prohibitive cost of a complete inventory.

Conducting a municipal forest structure assessment provides insight into the general health and diversity of the forested areas within a municipality. This data establishes a baseline for long-term monitoring, allowing for the detection of changes in forest condition over time. It can also inform the development of specific ecological and biodiversity goals within your UFMP, such as improving habitat quality through targeted restoration or implementing programs to monitor and remove invasive species.

This type of assessment can also support the creation of policies to strengthen protections for natural forest areas, particularly in response to increasing development pressures.

The <u>City of Burnaby</u>, BC presents the structure and composition of its native forests in its urban forest strategy (pp. 31-33; Figure 3).

### FIGURE 3: EXAMPLE OF FOREST STRUCTURE MAPPING



Source: City of Burnaby Urban Forest Strategy

### Ecosystem services or urban forest function study - IMPORTANT

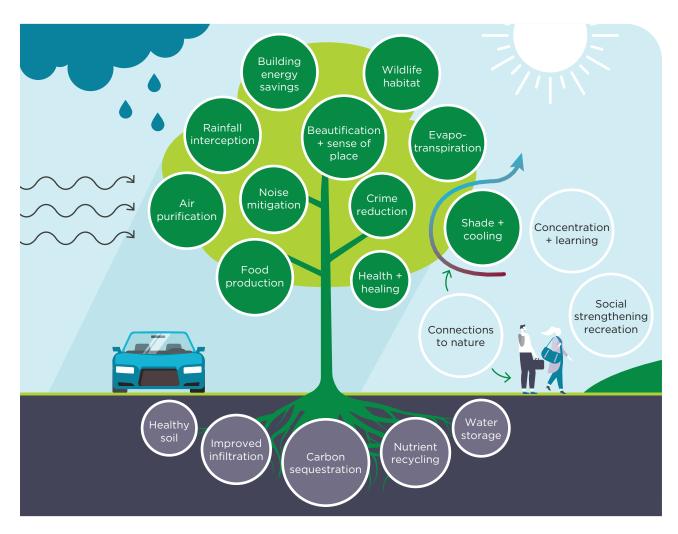
This type of study describes the services or functions provided by the urban forest, using indicators such as leaf area, carbon sequestration, pollutant removal and stormwater interception. These indicators quantify how trees regulate water, clean air, cool neighborhoods and sequester carbon, while also supporting equitable access to green spaces and the physical and mental wellbeing of residents.

Understanding these functions can help inform decisions on planting, pruning, protection and green infrastructure integration. Additionally, ecosystem services can be assigned a monetary value, helping to illustrate the economic benefits that urban trees contribute to your municipality.



The <u>City of Courtenay</u>, BC presents the value of ecosystem services provided by its urban canopy in its urban forest strategy (p. 20) (Figure 4).

FIGURE 4: EXAMPLE OF ECOSYSTEM SERVICES PROVIDED BY URBAN FORESTS



Source: City of Courtenay Urban Forest Strategy, originally developed by Diamond Head Consulting

### Planting prioritization study - OPTIONAL

Planting prioritization studies use data-driven analysis to identify and rank areas for tree planting. They evaluate social, economic and environmental factors such as canopy cover distribution, heat vulnerability and population demographics such as age, income and health factors to determine where planting will have the greatest impact. You can use these studies to guide the selection of suitable planting locations to achieve canopy growth targets and inform municipal tree planting strategies. They are commonly created after a UFMP is developed but can be a valuable tool to integrate into the planning process.

This type of study helps address goals like improving public health, advancing climate adaptation and promoting environmental equity. Common datasets used in planting prioritization studies include tree and planting site inventories, canopy cover studies, current and projected climate data, air quality data, demographic data, heath data, biodiversity and habitat connectivity data.



Halifax Regional Municipality, NS developed a tree equity score to prioritize future planting locations, as shown in the urban forest equity section of its urban forest management plan (pp. 54-59).

### Urban forest climate vulnerability assessment - OPTIONAL

Climate vulnerability assessments evaluate how an urban forest is likely to be affected by current and future climate change. They are often performed as a part of broader climate adaptation strategies to help communities understand the potential impacts of climate-related stressors such as extreme heat, drought, flooding and pests. They usually rely on data from other analyses, including tree inventory data, climate projections and urban tree risk assessments.

These assessments consider both economic and environmental perspectives. From an economic standpoint, they may estimate the additional costs associated with increased tree care, failure, mortality and replacement due to climate stressors. From an environmental standpoint, they help identify vulnerable tree species or planting sites and recommend more resilient species or management interventions that can enhance tree health and longevity in a changing climate.



The <u>City of Guelph</u>, ON describes the effects of climate change on its urban forest and strategies for adaptation in its urban forest management plan (p. 7).

#### CURRENT PRACTICES, PLANS AND POLICIES

Another important part of understanding what you have now is to compile information on practices, plans and policies that influence or impact your urban forest activities, such as:

- current urban forest policies and practices (e.g., maintenance strategy, planting guidelines)
- community engagement practices and guidelines
- organizational structure and operational capacity
- budget and funding sources
- other municipal and regional plans that intersect with the urban forest (e.g., official master plans, climate plans, biodiversity strategies)

All of these play a significant role in determining how the data you collect through your urban forest studies and analyses can be converted into tangible actions in your UFMP. For example, information from related policies and plans can help you align your UFMP goals with other community priorities, while information related to operational capacity and budget can influence your timelines and determine where to focus your efforts. Understanding current community engagement practices and guidelines can also help you plan your next steps appropriately and ensure community perspectives are integrated in the plan.

Other sources of information that can support your UFMP include:

- Academic research that illustrates the environmental, social and economic value of the urban forest, which is useful when communicating the business case for the development of a UFMP.
- Jurisdictional scans of plans, programs and policies created by other communities, which can help with understanding best practices and serve as a source of inspiration.
- Urban forestry program benchmarking and assessment tools (see <u>Additional</u> <u>resources</u> for examples).



The <u>City of Fort Saskatchewan</u>, AB explains in its urban forest management plan how the resources available through the public works department, including staff and budget, are allocated to support urban forestry initiatives (p. 44).



The <u>City of Surrey</u>, BC links its urban forest management strategy to its official community plan; sustainability charter; biodiversity conservation strategy; climate change action strategy; and parks, recreation and culture strategic plan (pp. 7–8).



Your urban forest management plan (UFMP) should set out a **long-term vision** for your community's urban forest, as well as establish clearly defined **goals** (or objectives) and **targets** to achieve that vision.

TO ACHIEVE?

The vision, goals and targets will need to be informed by the work you completed in <u>Step 2</u>, where you developed a thorough understanding of the current state of your urban forest and your supporting policies and practices. Having this information is an essential part of identifying the challenges and opportunities that will inform your vision, goals and targets.

#### ENGAGING THE COMMUNITY IN URBAN FOREST MANAGEMENT PLANNING

Community engagement is a necessary and important part of the UFMP process. It ensures your plan reflects community needs and values, fosters public trust and transparency, and builds long-term support and stewardship. Creating a truly comprehensive vision for the future of the urban forest requires active community engagement throughout the planning process.

Your community engagement strategy should identify all participant groups and rightsholders that will be involved in or impacted by the UFMP and provide a clear and specific description of how and why each group will be engaged. These groups may include Indigenous communities and organizations, local environmental groups, neighbourhood associations, businesses, academic institutions and members of the public. It is especially important during this phase to engage historically underserved communities to ensure their voices are not only heard but meaningfully included in the plan.

A variety of engagement tools including public workshops, surveys, one-on-one meetings and open houses can be used to gather input on how community members perceive and value the urban forest. As noted in <u>Step 1</u>, an **advisory committee** consisting of local and municipal representatives can also be created for consultation throughout the planning process. The insights gathered through these methods will help you shape a UFMP that addresses local priorities and concerns.



For more information on community engagement strategies, including examples of methods of engagement, review our tipsheet on <u>integrating</u> community engagement in urban forestry projects.

# DEFINING THE VISION, GOALS AND TARGETS

The **vision**, **goals** and **targets** of a UFMP set out the direction for the future of the urban forest. They explain what you hope to achieve over the course of the plan's implementation and how you will measure success. Some communities also integrate **guiding principles**, which are similar to goals but focus on *how* you will do something rather than *what* you will do.

#### **Vision**

The vision statement for your UFMP is a short, qualitative description of the purpose of the plan and what the community hopes to achieve through its implementation. It is developed by the project team in collaboration with key internal stakeholders and community participants. In this way, it reflects a shared vision of the urban forest.

The vision should be inspirational, but also realistic. To develop your vision, you may want to review background materials including the current state of the urban forest, as well as its benefits and existing management practices, and use that information to articulate the desired long-term outcomes of the plan. Most vision statements go through several refinements before being finalized.



The <u>City of Edmonton</u>, AB sets out the following vision statement for its urban forest management plan (p. 19):

"To have a diverse and sustainable urban forest that enhances the beauty of Edmonton and contributes to wellbeing and quality of life for future generations."

#### **Guiding principles**

Guiding principles are core values and constraints that are collaboratively defined by the planning team, stakeholders and community members to reflect shared priorities and local context. These principles are usually presented after the vision statement. While guiding principles are not required to create a functional plan, they can help set the tone for your plan and connect it to the core benefits and values of the urban forest. They can also serve as a framework to evaluate options, guide planning decisions and promote consistency throughout implementation.

Guiding principles are grounded in current policies, data and community input. They help ensure that all actions align with the long-term intent of the UFMP and foster transparency and accountability in decision-making.

The <u>City of Beaumont</u>, AB outlines five guiding principles in its urban forest management strategy (pp. 44-45), to ensure that the actions in the strategy will grow the urban forest in a way that benefits all residents.

- 1. The urban forest is a valued, inter-connected infrastructure asset and should be managed holistically across all areas of Beaumont.
- **2.** The urban forest benefits all Beaumont residents equally.
- **3.** The urban forest promotes climate resiliency and environmental stewardship through abundance and diversity.
- **4.** The urban forest is a shared responsibility which supports the collaborative success of the community.
- **5.** Management of the urban forest is ever evolving and must be adaptive, and data driven.

#### Goals

The goals are the broad focus areas of your UFMP. They need to be grounded in the plan's vision and guiding principles. Goals provide direction for the strategies, targets and actions needed to achieve the plan's vision, and can be short, medium or long term.

A detailed assessment of staffing capacity, available funding or operational needs is not required at the goal-setting stage. Goals are meant to be high level and identify priority issues and opportunities.

Goals are generally informed by:

- an analysis of current urban forest conditions
- stakeholder and community input
- alignment with municipal priorities and policies

Common themes for goals include:

- expanding and protecting the urban forest
- establishing maintenance and monitoring protocols
- enhancing community engagement and education





The <u>City of Winnipeg</u>, MB describes five major goals in its comprehensive urban forest strategy (p. v):

- 1. Plan accountably: To achieve an equitable distribution of connected tree and forest assets that will improve the health of our people and communities
- **2. Plant strategically:** To grow a robust and sustainable urban forest that will maximize benefits for human health and ecological function
- **3.** Manage adaptively: To improve tree health and safety, achieve planned levels of service, and respond to unplanned demand for services
- **4. Protect prudently:** To preserve and protect Winnipeg's urban forest canopy where it will maximize benefits for human health and ecological function
- **5. Partner purposefully:** To foster reconciliation and stewardship that will build capacity to achieve goals and respond to challenges

#### SPOTLIGHT: INDIGENOUS PERSPECTIVES IN UFMPS

While not commonly included in UFMPs, more communities are making efforts to integrate Indigenous knowledge, perspectives and worldviews into their UFMPs. Below are two examples of how municipalities are reflecting Indigenous knowledge in their plans:

- The <u>City of Fort Saskatchewan</u>, AB integrates the concept of *etuaptmumk*, or Two-Eyed Seeing, in its urban forest protection and enhancement plan (p. 3). This concept was developed by Mi'kmaw Elder Albert Marshall and describes the integration of both Indigenous and Western ways of knowing. The city also embeds seven sacred teachings in its urban forest vision and guiding principles, using the imagery of the seven layers of a food forest (p. 6).
- Halifax Regional Municipality, NS similarly adopts a Two-Eyed Seeing approach in its urban forest management plan and includes Indigenous language, storytelling and imagery designed by Indigenous graphic designers.

#### **Targets**

Targets are measurable milestones that you use to monitor progress toward the plan's strategies and broader goals on an ongoing basis.

Developing effective targets requires using the information you collected in previous steps, including:

- the current state of the urban forest, informed by studies such as tree inventories, canopy cover studies and risk assessments
- current policies and practices including tree protection bylaws, tree planting and replacement policies, maintenance standards and public engagement policies
- public and stakeholder input and priorities
- staffing, budget and resource capacity
- related municipal-wide public health, climate resilience or equity targets to which the urban forestry program contributes

Reviewing these factors will help your planning team identify gaps, needs and opportunities for improvement that your UFMP may need to address, and inform the creation of realistic, achievable targets and timelines based on available resources.

When developed thoughtfully, targets become clear, time-bound commitments that guide strategy implementation and enable ongoing evaluation of success. While most targets will be quantitative, for example, "increasing municipal canopy cover by 10 percent by 2050," some may be qualitative, such as "strengthening relationships with underserved communities".

For each target, you will need to define an associated **performance indicator**. Performance indicators are measurable values that indicate progress towards reaching a target. For example, if a target is to ensure 85 percent of newly planted trees survive for at least three years, the performance indicator is the tree survival rate after three years.



The <u>City of Burlington</u>, ON outlines indicators and targets for each of its planned goals, along with associated actions, in its urban forest master plan. For example:

#### 8.5 Preserve and Protect

#### 8.5.1 Private Tree Protection

**Goal:** Protect trees on private land whenever possible, or otherwise seek compensation where removals are necessary.

*Indicator:* Tree canopy cover on private property.

**Target:** Canopy growth between measures.



The next step in creating a UFMP is to develop specific **strategies** and **actions** to achieve your goals and targets. Community engagement is a key component of this step as well, to ensure community values and concerns are heard and reflected.

#### STRATEGIES

In a UFMP, strategies are the approaches that will be taken to achieve the goals and targets. Usually, each goal in a UFMP will have multiple associated strategies that link the high-level goal and the specific actions.

Developing strategies involves:

- Ensuring approaches are aligned with accomplishing the goals and reaching the targets of your UFMP.
- Understanding urban forest best practices to guide the types of strategies used.
- Reviewing the current state of the urban forest to prioritize strategies.
- Reviewing current policies and practices that can continue or be improved.
- Obtaining public and stakeholder input on priorities.
- Assessing staffing, budget and resource capacity to provide realistic strategies.
- Understanding the goals and targets of other municipal departments and how the urban forest department may be able to collaborate with them.

As an example, if one of your goals is to expand public outreach, stewardship and education programs, your strategies could include:

- Improving urban forest communications and stakeholder relationships.
- Increasing outreach in equity-deserving neighbourhoods.
- Expanding urban forestry education at public events and in youth programs.
- Offering consistent opportunities to receive public feedback.
- Offering more tree giveaway funding and opportunities for community groups.



The <u>City of Kelowna</u>, BC describes four major goals in its sustainable urban forest strategy, each with two to three strategies to attain them (pp. 51-58):

#### Goal 1: Protect, connect, and expand the urban forest

- Strengthen policy, planning, and implementation to protect, connect, and expand tree canopy
- Expand the urban forest equitably in Urban and Core areas
- Improve the quality and suitability of trees being planted for the site and climate requirements

#### Goal 2: Maintain a healthy, safe, and viable urban forest

- Clarify City procedures and standards to improve efficiency and manage risk
- Transition from reactive to proactive maintenance of City trees
- Ensure resourcing is sufficient to deliver levels of service that maximize urban forest benefits

#### Goal 3: Involve people and organizations in urban forest management

- Improve awareness of and participation in urban forest management
- Build relationships with syilx/Okanagan communities, First Nations Governments and Indigenous peoples through urban forest management

#### Goal 4: Monitor and innovate to achieve our urban forest vision

- Monitor change, report, and adapt management to new information
- Trial innovative approaches to dryland urban forestry

#### ACTIONS

Actions are the concrete tasks or initiatives that will be taken to implement each strategy and achieve the broader goal. Actions can be developed using a step-by-step process:

- **1.** Break down each strategy into the smaller actions needed to achieve it.
- **2.** Assess the feasibility of completing each action, which requires:
  - a. interdepartmental collaboration to clarify which departments or teams are responsible for each action
  - a comprehensive understanding of the available and required staff, budget and resource capacity to complete proposed actions
  - an understanding of any dependencies, legal or policy barriers to completing an action
- **3.** Prioritize each action in terms of cost, staffing needs, resource needs, impact on achieving the strategy and time sensitivity.
- **4.** Assign responsibility to departments, teams and supporting external partners like environmental non-governmental organizations, community groups or contractors.
- **5.** Develop performance indicators for each action that can be monitored and adjusted if required.

When fully developed, each action should have:

- a clear task or set of tasks
- an associated timeline and priority level
- designated responsible staff
- allocated resources
- · a relative cost estimate

These components enable effective tracking of progress, proper budget allocation, adaptive management and clear accountability.

The <u>City of Gatineau</u>, QC includes a detailed breakdown of each action identified in its urban forest management plan (pp. 63–118; *in French only*). This comprehensive plan proposes 23 actions, with a description of the activities involved, the goal supported by the action, related challenges and potential solutions, who will lead and support the work, and indicators of success.





To ensure your urban forest management plan (UFMP) stays on track and delivers meaningful results, it is essential to incorporate monitoring and adaptive management.

Ensuring you have detailed goals and actions for your UFMP and including information on how progress will be monitored is a great way to begin the monitoring process. The actions in your UFMP should include enough information to support operations for the short-term implementation of the plan. However, medium- and long-term actions will likely need to be adjusted over time as resources and priorities shift or if unforeseen events, such as an extreme weather event or pest outbreak, impact the urban forest or broader community.

Some communities develop **urban forest operational plans** (sometimes referred to as implementation or action plans) to support the implementation and monitoring

of their UFMP goals and actions. These are short-term plans that usually cover five years or less. They help a community keep its UFMP on track by:

- Translating big-picture goals and actions into detailed steps (e.g., planting, pruning, monitoring for pests) and following their progress.
- Assigning roles and responsibilities about who is doing what, where, and when.
- Setting realistic timelines based on staff, equipment and budget, and updating these timelines based on progress toward targets.
- Tracking performance indicators to measure progress.
- Providing feedback loops to enable course corrections when needed, without compromising long-term goals or causing significant delays.



Operational plans often include a summary of strategies, an update on the state of the urban forest, actions for the next phase of the operational plan, completed work and current challenges. For example, if you have already had a UFMP for ten years, your next operational plan might review progress over the previous ten years, perhaps using a "report card" format, to provide an update on future actions for the next operational phase and challenges to achieving the identified goals.

Either within the UFMP or as part of an operational plan, you will need to establish a system to monitor progress toward your UFMP goals and strategies. This system should align with your established targets and may include metrics such as tree planting rates, annual canopy cover growth and species diversity trends. It should also outline who is responsible for data collection, how often monitoring will occur and what methods will be used. You'll need to assign staff or partners to carry out these activities and schedule regular check-ins to evaluate progress and assess whether your current strategies are effectively supporting your goals and targets.

To maintain transparency, share your monitoring results with the public on a regular basis. If progress falls short, use monitoring data to investigate the root causes and make informed adjustments to keep your plan aligned with its long-term objectives.

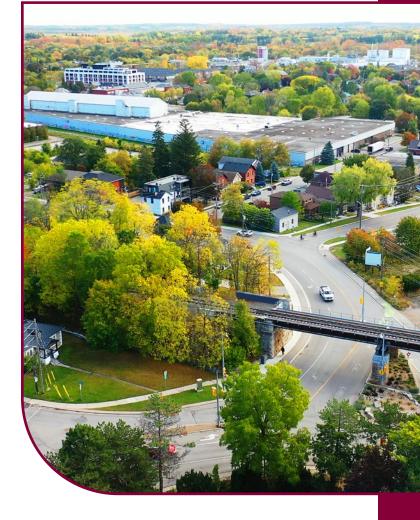
The <u>City of Saskatoon</u>, SK's urban forest operational plan, *Pathway to a Sustainable Urban Forest*, complements its urban forest strategy. The operational plan provides background and the current status of the actions outlined in the strategy, specific initiatives to occur over a five- to ten-year period, key performance indicators, and who is responsible for supporting each initiative.

FIGURE 5: EXAMPLE OF PLANNING CYCLES FOR URBAN FOREST MANAGEMENT



Source: City of Guelph urban forest management plan 2013-2032, (p.4)

The City of Guelph, ON published an urban forest management plan in 2012, intended to provide strategic guidance until 2032. The city completes an evaluation of progress and updates policies and practices every five years (Figure 5). The latest update, published in 2020, explains the city's most recent accomplishments; outlines how it monitors progress; and identifies gaps, challenges and opportunities. It also sets out a second phase plan that explains prioritized actions based on an assessment of the first phase of implementation.





Once you have developed your urban forest management plan (UFMP), the next step is to obtain council approval and put the plan into action. Council approval and adoption is a vital part of ensuring that budget and resources are available for implementation.

If you used the services of a consultant, be sure to include them as part of the presentation to council.

As part of implementing your UFMP, you may also need to develop additional guiding policies, plans or bylaws to support the actions in your UFMP. The work you did in Step 2 to review and evaluate current plans, processes and priorities, as well as the strategies and actions you identified in Step 4, will help you determine what other policies or plans might be required to support the implementation of your community's UFMP.

Below are examples of supporting plans, bylaws and guidelines that some communities use to support UFMP implementation. While these are not required, they can enhance the overall management of urban forests.

# TREE PLANTING MASTER PLANS

A tree planting master plan is a focused, short- to medium-term (usually around five to ten years) document that guides which trees should be planted in a community, as well as where and how they should be planted. It sets clear goals for increasing tree abundance, expanding canopy cover and promoting equitable tree distribution.

This master plan can support many UFMP targets and strategies such those related to increasing canopy cover, equitable planting, biodiversity and community stewardship targets. It is informed by technical assessments such as canopy cover studies, tree inventories and planting prioritization studies. The plan identifies priority planting areas, establishes species selection guidelines, sets measurable targets, and outlines design and maintenance standards. It also helps ensure that planting efforts are coordinated across departments, informed by data and implemented strategically.



The <u>City of Montreal</u>, QC's tree planting master plan for the Mercier-Hochelaga-Maisonneuve district (*in French only*) is designed to help the city attain a goal of planting 11,800 new trees on public lands in Mercier-Hochelaga-Maisonneuve by 2027, and includes guidance on how and where to plant trees.

Other examples of tree planting master plans include the <u>City of New Westminster</u>, BC and the <u>City of Toronto</u>, ON.

# TREE AND URBAN FOREST PROTECTION BYLAWS

Tree and urban forest protection bylaws support urban forest management by ensuring the preservation and sustainable management of urban trees and sensitive ecosystems. Many UFMPs explicitly call for bylaws to be created or updated as part of long-term targets.

These bylaws regulate the preservation, removal and injury of trees in urban, developing and environmentally sensitive areas by requiring permits for work which may require the injury or removal of public or private trees of a certain size. They support targets such as tree canopy protection, replacement and mitigation requirements, preservation of sensitive ecosystems and increasing community awareness regarding the value of trees. Once adopted, implementation of these bylaws requires enforcement staff and legal support to manage appeals or disputes.

If you are thinking about developing private tree bylaws, assess in advance how likely they are to be accepted or opposed by the public, local landowners and businesses. Conducting meaningful consultation early in the process will address concerns, build trust and increase the likelihood of council approval.

The <u>City of Dieppe</u>, NB has a tree protection bylaw that details specific requirements, including permits for removal and requirements for replanting cut trees to maintain the urban tree canopy.

# TREE TECHNICAL MANUALS AND GUIDELINES

Manuals and guidelines can be used to establish the technical elements, standards and specifications necessary to preserve, protect and maintain trees as a community grows and develops. They also describe the professionals or bodies responsible for implementing the standards, specifications and guidelines.

Manuals and guidelines often include information about:

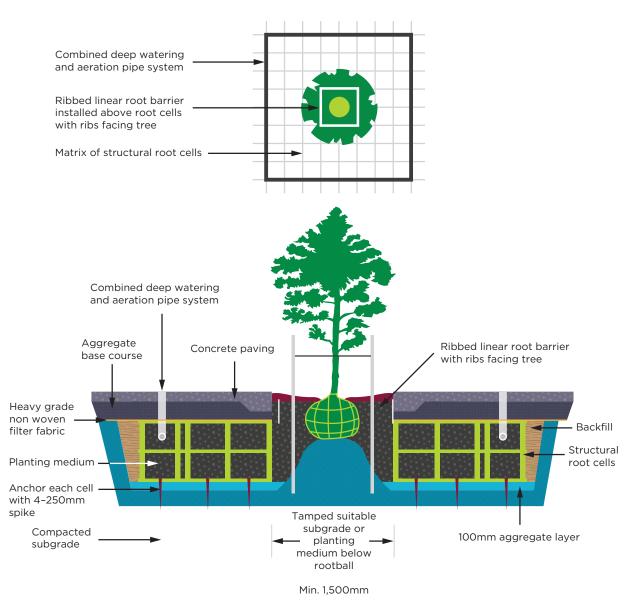
- requirements for tree-related plans and reports (e.g., specific data to collect for tree inventory and preservation plans)
- specifications for tree protection measures (e.g., tree protection zone minimums)
- compensation formulas for removed trees
- tree risk assessment procedures
- tree establishment standards
   (e.g., soil volume, irrigation requirements)
- maintenance standards (e.g., pruning protocols)

These documents help communities reach many of their UFMP targets and goals by improving tree survival rates, reducing maintenance costs and promoting canopy retention. By following consistent standards, you can increase the likelihood of newly planted trees growing to maturity and retaining mature trees.



The <u>City of Guelph</u>, ON's tree technical manual outlines detailed specifications to establish, protect and maintain trees on private and public lands in the community (Figure 6).

# FIGURE 6: EXAMPLE OF TECHNICAL DRAWINGS DETAILING PLANTING SPECIFICATIONS



Source: <u>City of Guelph Tree Technical Manual</u> (p.50)

# URBAN FOREST ASSET MANAGEMENT PLANS

Urban forest asset management plans are strategic, data-driven, operational documents that outline the activities and programs needed to achieve the desired level of service from the urban forest, while efficiently managing the risks and costs associated with its assets. They are long-term plans, spanning anywhere from 10 to 50 years, which treat individual trees and woodlots as critical infrastructure assets comparable to roads or water treatment facilities.

These plans differ from UFMPs by emphasizing the practical, day-to-day management of tree assets and the strategies and investments needed to maintain required service levels.

These plans often align with the goals (e.g., climate resilience, public health, quality of life) of municipal-wide strategic

plans including municipal plans, natural area management plans or urban forest management plans. Like UFMPs, urban forest asset management plans are updated periodically, often through operational plans, to support adaptive management over time.



The <u>City of Edmonton</u>, AB's urban forest asset management plan documents the forecasted costs associated with managing the city's urban forest over the next 50 years. It describes the characteristics and condition of the urban forest as publicly managed assets; the expected levels of service; and the planned actions, costs and strategies to achieve the desired levels of service.





We hope you found this guide helpful for understanding the key steps in developing and implementing your urban forest management plan. While every plan is unique to each community's context and may have different requirements, the approach outlined here provides ample guidance to plan for, protect and grow your urban forest.

Seeking input from qualified professionals when developing a UFMP can be immensely helpful. GMF's <u>Growing Canada's Community Canopies</u> initiative offers funding and resources, including expert guidance from urban forestry coaches, to support you in creating and implementing a UFMP for your community.

#### ADDITIONAL RESOURCES

<u>Urban Forestry Roadmap</u>
 (Vibrant Cities Lab)

This online resource includes a series of actions for developing a robust urban forestry program, including building an inclusive coalition, setting priorities, engaging your community and planning the future of the urban forest.

• Growing Green Cities: A Practical
Guide to Urban Forestry in Canada
(Tree Canada)

This comprehensive guide to urban forestry in Canada covers a variety of topics related to urban forest planning and management.

Mapping Canada's Urban Forestry
 Footprint (Tree Canada and the University of Toronto)

This tool tracks urban forestry activities across Canada by identifying which communities have urban forestry departments, tree protection bylaws, UFMPs and other related programs.

A Guide to Urban Forest Plans
 (The Green Infrastructure Center Inc.)

This resource helps local governments and community organizations understand what types of plans can help them manage their urban forests and offers a self-assessment tool for the current state of urban tree care in their communities.

<u>Urban Forest Management: A Primer to Strategic Planning for Municipal Governments</u> (University of Florida and the US Forest Service)

This detailed guide explores the steps required for long-term strategic planning of urban forests.

The Sustainable Urban Forest:
 A Step-by-Step Approach
 (US Forest Service and Davey Institute)

and resource management.

This guide on developing sustainable urban forests includes a section (Part IV) on measuring success, including key performance indicators for areas related to urban trees, community involvement

