WELCOME

CITY OF SARNIA
URBAN FOREST MANAGEMENT PLAN

Phase 1 Engagement

The Urban Forest Management Plan (UFMP) will be a long-term strategy to guide the City and its partners in the maintenance, protection, and enhancement of the **urban forest** across Sarnia.

Your input will help create a plan that reflects Sarnia's unique values, needs, and opportunities. *Thank you for helping to develop Sarnia's first-ever UFMP!*

City of Sarnia project sponsor:

Community Services Division,
Parks & Facility Operations Department,
Forestry and Horticulture Services
parksandrecreation@sarnia.ca

Project consultants:

URBAN FOREST INNOVATIONS INC
Lead consultant - urbanforestinnovations.com

PLANIT GEO™
mapping a greener future
Geospatial partner - planitgeo.com

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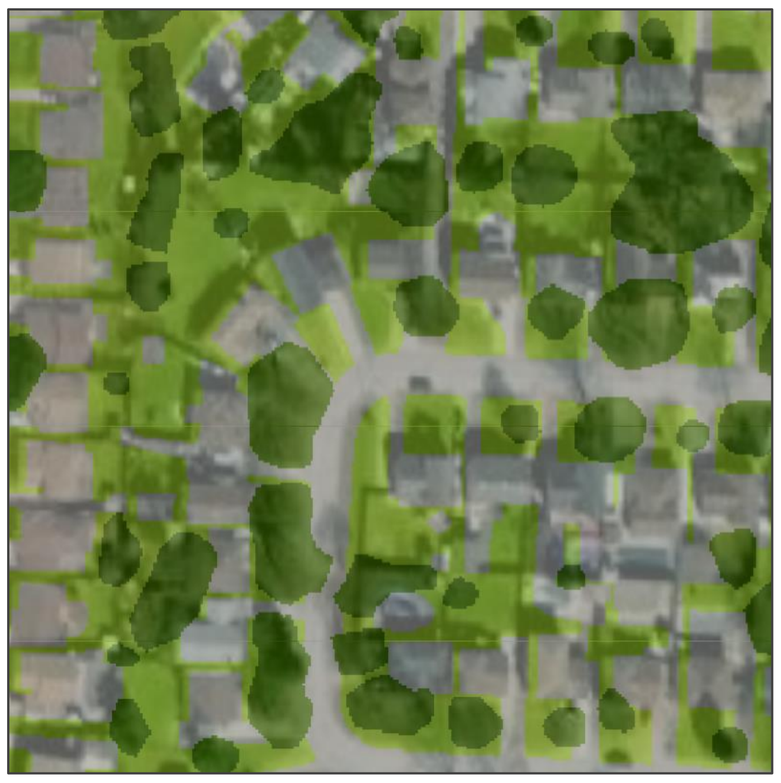
WHAT IS THE URBAN FOREST?

In short, Sarnia's urban forest includes **all trees and their growing environments** within the city. These include trees in parks and natural areas, along city streets, and on private residential, commercial, and institutional lands.

How big is Sarnia's urban forest?

An in-depth analysis of 2019 aerial imagery found that approximately 17% (2,726 hectares) of Sarnia is covered by tree canopy. Sarnia's urban area has 22% (1,635 ha) tree cover, while the rural area has just 12% (1,092 ha) tree cover. About 60% of Sarnia's total tree cover is found in the urban area, as the rural area is largely agricultural.

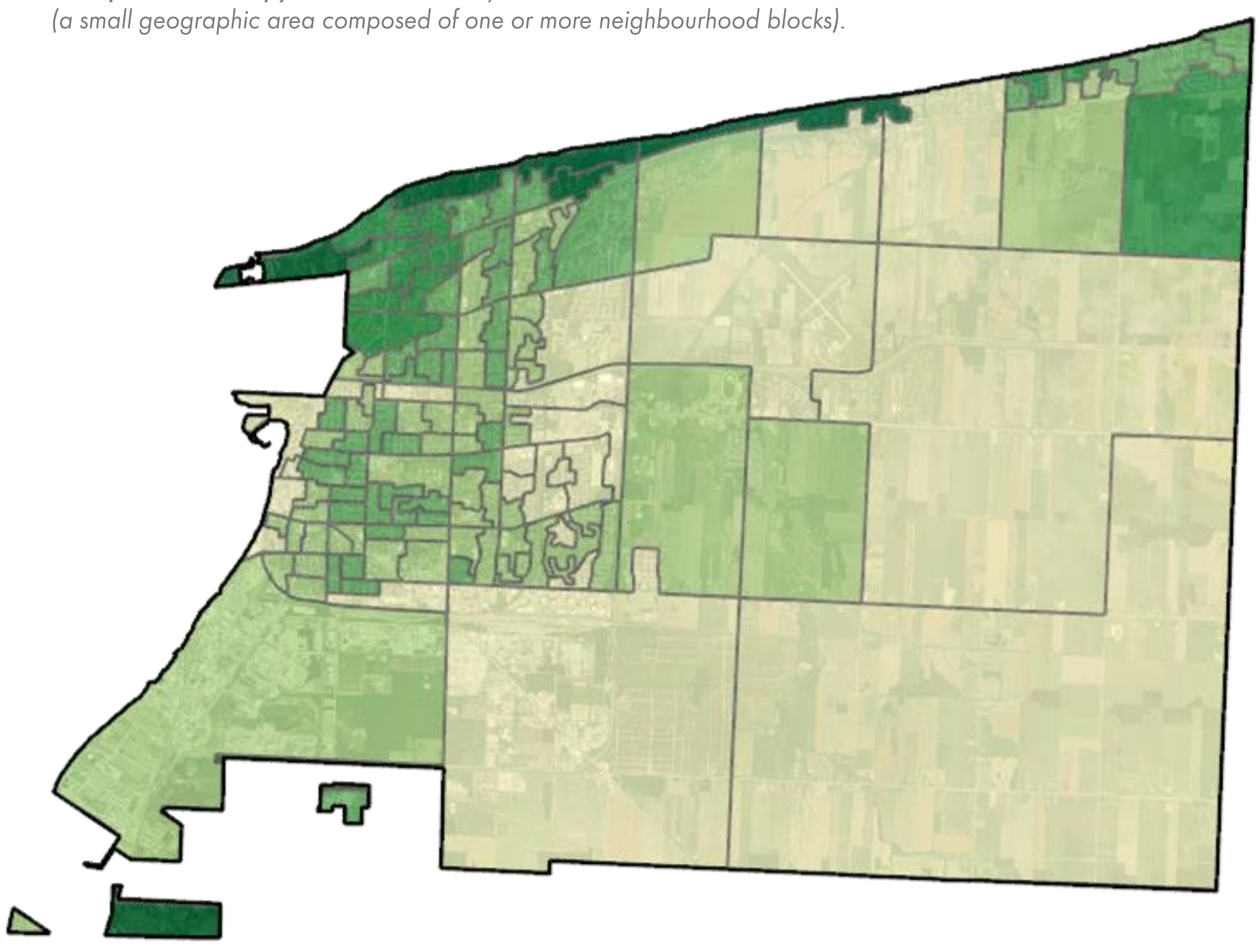
The total number of trees in Sarnia is currently not known. The City maintains nearly 25,000 street trees, with many more trees in parks, natural areas, and on private lands.



Detailed view of tree canopy cover mapping in Sarnia. Darker green areas are tree canopy; lighter green are other vegetation, such as grass.

Can we expand our urban forest?

A map of tree canopy cover in Sarnia by census dissemination area (a small geographic area composed of one or more neighbourhood blocks).



Yes! Detailed geospatial analysis found that more than half of the entire city (52% or over 8,400 hectares) can be considered Potential Plantable Area (PPA) – land that *could* sustain trees to expand the urban forest in the future.

Much of this land is currently needed for other uses, such as agriculture, so it will be important to focus more urban forest planting efforts on other suitable lands such as parks, natural areas, residential properties, and institutional, commercial, and industrial (ICI) lands.

Because some 90% of Sarnia's PPA is found on private properties, engaging landowners in planting and maintaining trees will be critically important to growing Sarnia's urban forest.

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URBAN FOREST PROGRAMS AND POLICIES

The City of Sarnia has implemented a variety of urban forest programs and policies. A selection is highlighted here. For more information, please visit **sarnia.ca/play/urban-forests.**

Urban forestry – Tree maintenance

Forestry and Horticulture Services is responsible for the care and maintenance of nearly 25,000 street trees, as well as trees in parks and natural areas. Most tree maintenance is done by City arborists. Trees are pruned on a per-request and as-needed basis. Residents can request tree inspection and pruning via email to **customereservice@sarnia.ca,** by calling **(519) 332-0330**, or through the Tree Work Order page on the City website.

Urban forestry – Tree planting

On average, the City of Sarnia plants some 600 trees per year in parks and new communities, and to replace removed street trees. The City has partnered with local community and environmental groups, businesses, schools, the St. Clair Region Conservation Authority (SCRCA), and others on community tree planting and stewardship events by providing trees, materials, and planting sites to grow the urban forest. **Residents can also request a free tree for their front yards (right-of-way) by contacting City of Sarnia customer service.**

Programs, policies and by-laws

The Trees of Distinction program encourages residents to nominate and visit outstanding publicly-accessible trees in the city. The Commemorative Asset Program allows residents to celebrate a special person or event with a City-planted tree.

In 2021, the City of Sarnia adopted a new Tree Canopy Protection and Enhancement Policy. This policy recognizes Sarnia's commitment to "protect and enhance the quality and quantity of tree canopy cover and native vegetation within the city."

Sarnia's new Official Plan (pending Lambton County approval) will guide land use policy and development in the city. New urban forest policies support increasing canopy cover and enable the City to require Tree Preservation Plans if trees may be affected by planned development.

By-law Number 34 (1992) protects all publicly-owned trees against unauthorized harm or destruction and prohibits tree planting on public lands without City permission.

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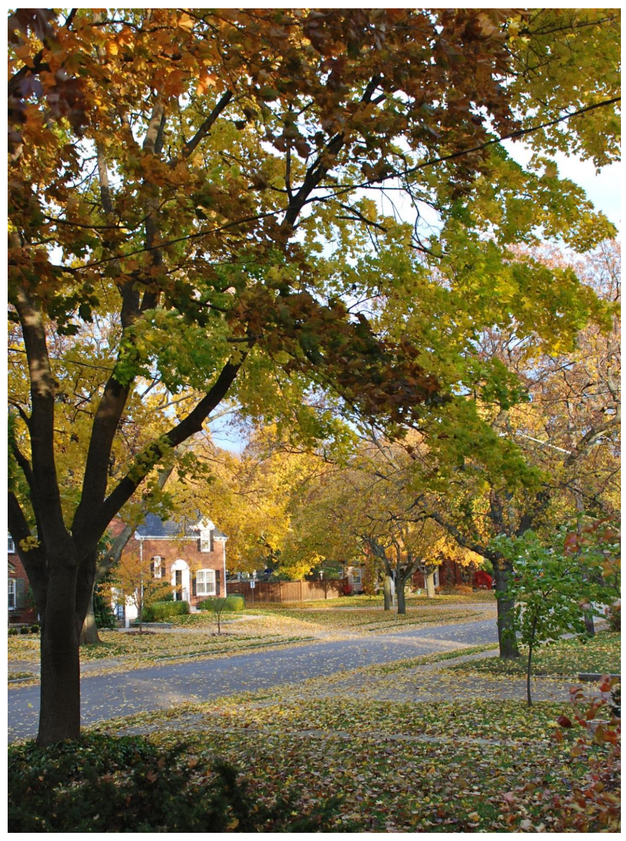
URBAN FOREST BENEFITS

Sarnia's urban forest provides ***treemendous*** services and benefits to all the city's residents. Trees aren't limited by property boundaries and offer their benefits across the entire community, so it's important to grow and protect trees on streets, in parks, and on private properties alike!

Environmental benefits

Urban trees...

- **Trap airborne pollutants**, improving the quality of the air we breathe. In Sarnia, this service is estimated to be worth over $370,000 annually as trees remove more than 95,000 kg of air pollutants every year!
- **Provide shade**, making the surrounding environment cooler and more comfortable.
- **Absorb and filter stormwater**, reducing the amount of runoff and pollution in waterways. In Sarnia, this service is estimated to be worth nearly $100,000 annually as trees reduce runoff by an estimate 31 million litres every year!
- **Provide habitat** and food for wildlife such as mammals, birds, and insects.
- **Sequester and store carbon**, playing a small part in global climate change mitigation efforts. In Sarnia, this service is estimated to be worth over $603,000 annually as trees sequester some 2,400 metric tonnes of carbon every year. The carbon storage value of Sarnia's urban forest is estimated at over $21.5 million, with nearly 86,000 metric tonnes of carbon stored.



Social benefits

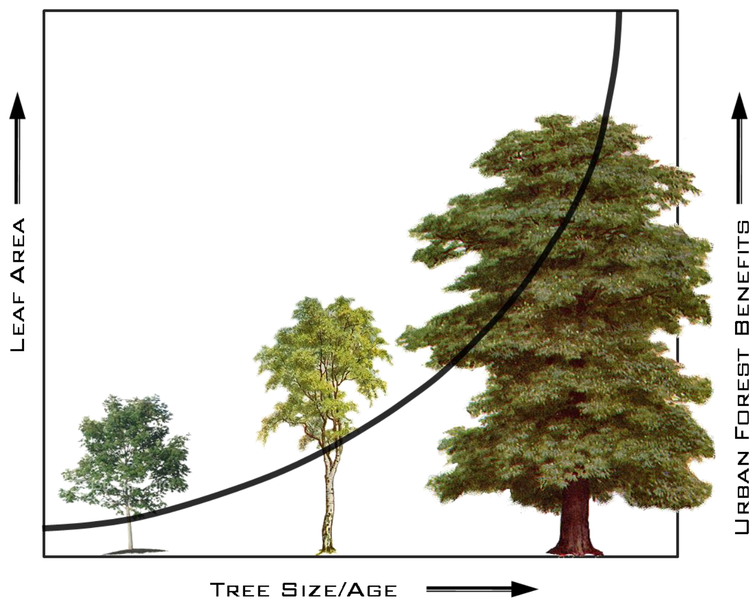
Urban trees...

- **Improve mental health** and well-being, as exposure to nature and green spaces has been proven to reduce heart rates, increase relaxation, and even improve cognition.
- **Beautify neighbourhoods** and properties and block undesirable views or noises.
- **Increase community engagement** by creating inviting spaces for community members to socialize and engage in outdoor activities. Trees can also foster a 'sense of place' and boost community pride.
- **Improve neighbourhood safety** by making streets look and feel narrower and encouraging drivers to slow down.

Economic benefits

Urban trees...

- **Reduce energy use** needs for heating (by sheltering from cold winds) and cooling (by providing shade), reducing costs and greenhouse gas emissions.
- **Encourage economic development** by creating attractive places that encourage tourism and businesses.
- **Complement other municipal infrastructure** and potentially reduce the need for costly infrastructure construction and repair.
- **Increase values** and reduce time-on-market for residential and other properties.



In general, bigger trees provide more services because they have more leaves, so it's important to plant and grow large and long-lived trees in the urban forest.

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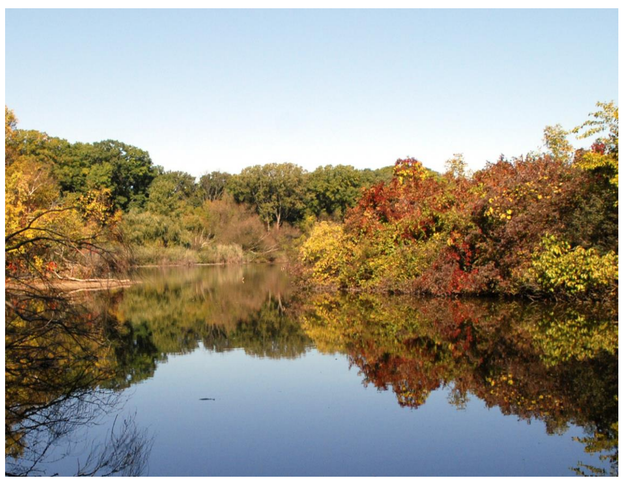
THE URBAN FOREST MANAGEMENT PLAN

Many communities in Ontario have developed and are now implementing long-term strategic Urban Forest Management Plans (UFMPs). While every community's plan is different, most UFMPs share common elements and provide a detailed roadmap towards achieving the community's vision, goals, and targets for its urban forest. These include:

Vision and guiding principles

Every plan needs a vision – an aspirational statement that paints a vivid picture of what the community will achieve by implementing the UFMP. Guiding principles will ensure that urban forest management reflects the community's unique values and needs.

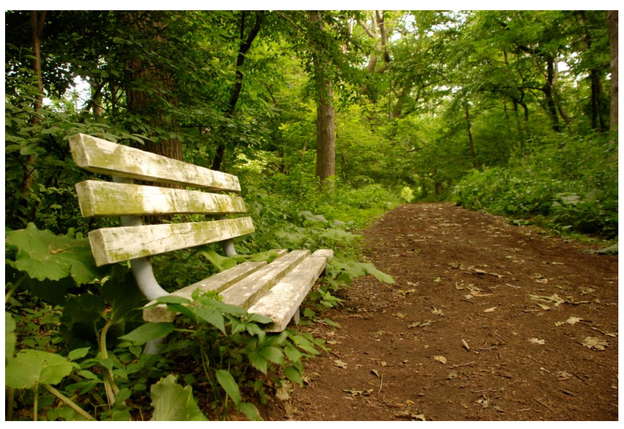


Goals and objectives

Goals are broad strategic statements that address identified needs by spelling out what is to be achieved. Like goals, objectives express desired or necessary outcomes but are more detailed and specific.

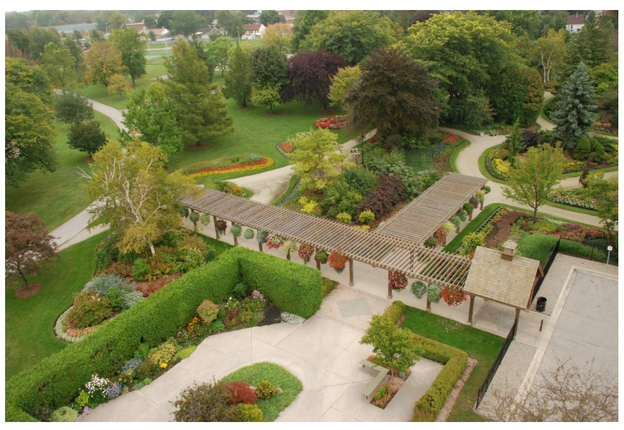
Targets

Targets are measurable objectives. Common examples of urban forest targets include a desired level of tree canopy cover within a specified timeframe or planting a certain number of trees every year.



Action items

Action items describe specific actions to be taken to achieve the UFMP vision and realize plan goals and targets. They identify the departments and partners responsible and the resources required, assign priority levels, and provide detailed guidance for implementation.



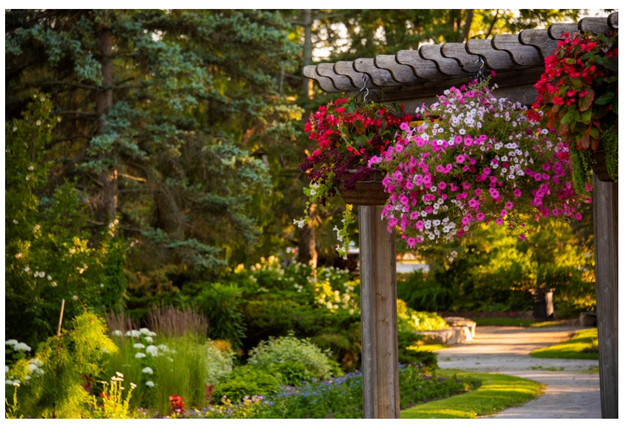
Monitoring

A plan to monitor the urban forest and its management on an ongoing and periodic basis will track Sarnia's progress towards achieving its urban forest vision and realizing its urban forest goals and targets.

Urban forest management themes

Sarnia's UFMP will be focused around five key themes, including:

1. Urban forest assets: canopy cover, diversity, tree health, etc.
2. Maintenance: pruning, risk management, pests + diseases, etc.
3. Protection: development plan review, guidelines, by-laws, etc.
4. Enhancement: planting programs and practices, standards, etc.
5. Engagement: outreach, education, stewardship, partners, etc.



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URBAN FOREST CHALLENGES

As in communities everywhere, Sarnia's urban forest faces many challenges to its sustainability. These challenges threaten tree health and longevity, and may reduce the amount, quality, and value of services and benefits that trees provide. Some of these challenges are highlighted here.

Difficult growing conditions

Trees have evolved to grow in forests. Urban trees face much harsher growing conditions and must compete for space with other infrastructure. Soil compaction, de-icing salt, high temperatures, drought, and poor drainage, are just some of the difficult growing conditions facing Sarnia's urban forest.

Pests, diseases, and invasive species

In the urban forest, invasive species may crowd out or outcompete indigenous species and degrade ecosystem quality and function. Emerald Ash Borer (EAB) has nearly eliminated Sarnia's ash tree population, and other insect pests such as spongy (LDD) moth or Asian long-horned beetle (ALB) threaten trees. Tree diseases (pathogens)—perhaps most urgently, oak wilt—can also have devastating effects on the urban forest.

Resource limitations

Urban forest management must compete with other essential municipal services for limited resources. As a result, some urban forestry best practices, such as a tree pruning cycle, cannot currently be resourced. This contributes to a maintenance backlog and requires a largely reactive (instead of proactive) approach to tree care and maintenance.

A large share in private ownership

87% of Sarnia's tree cover is privately-owned. While residential lots and other private lands may provide excellent opportunities for growing trees, some property owners may not adequately care for their trees or may remove them even if they are healthy and safe, reducing urban forest cover and benefits.

Climate change

Among other stresses, climate change is expected to bring higher temperatures, "drier dries and wetter wets", more freezing rain and wind gust events, and more frequent windstorms. These changes may result in more tree damage and drought stress, among other challenges.

Disservices

The undesirable aspects of some trees in the urban forest must be acknowledged. Among these can include pollen allergies, damage caused by falling branches or heaving roots, and maintenance costs. For some individuals or communities, these trade-offs may outweigh the many positive benefits trees provide and hinder support for tree establishment or urban forest management more broadly.

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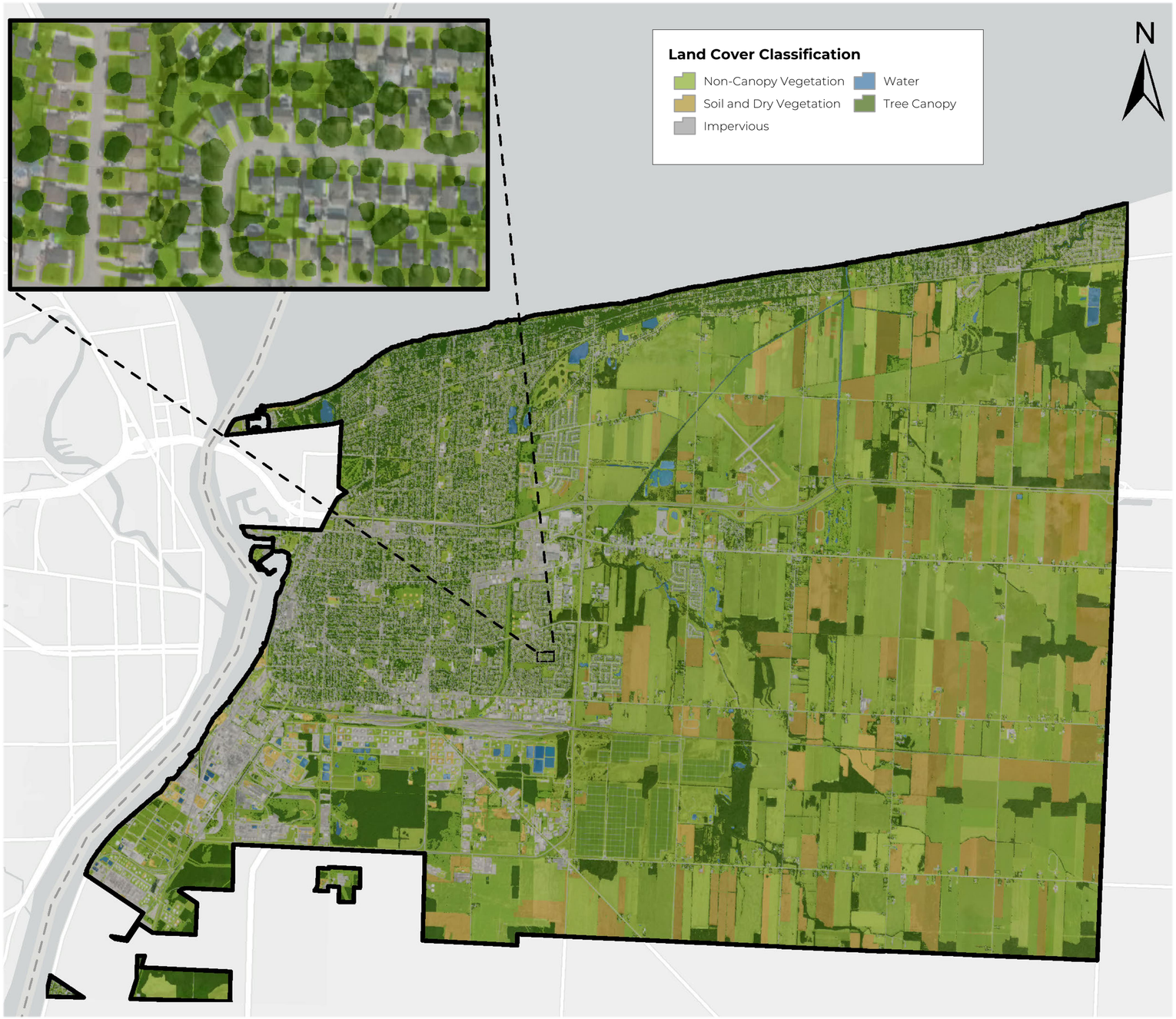
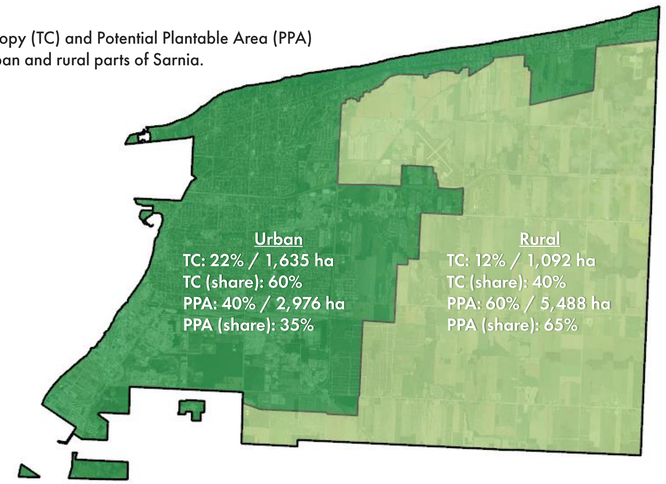
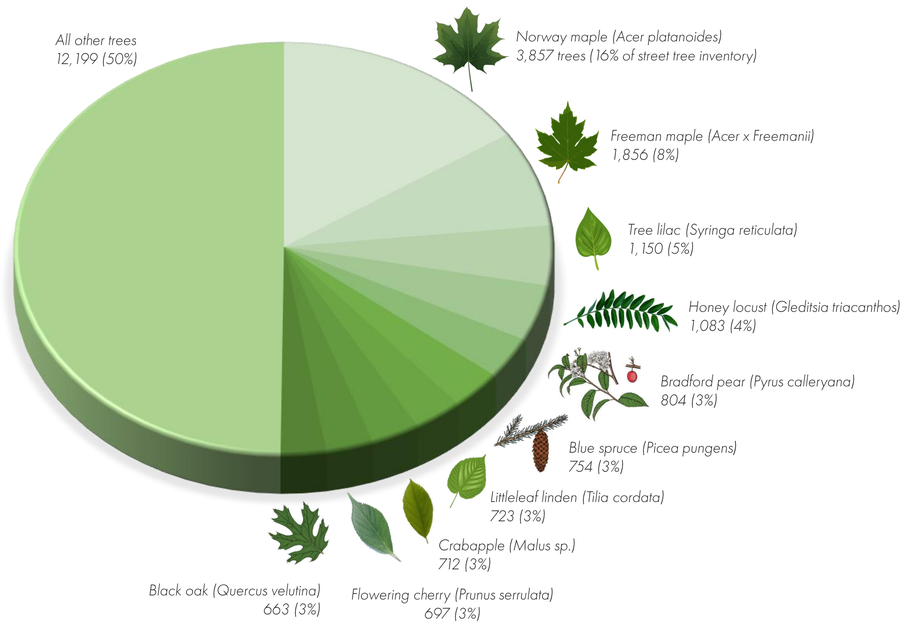


Tree Canopy (TC) and Potential Plantable Area (PPA) in the urban and rural parts of Sarnia.



Top 10 species in Sarnia's inventory of 24,498 street trees. Sarnia's street tree diversity is quite good relative to other municipalities and recommended best practices, but a greater variety of species should be planted to promote urban forest resilience and to provide a wider range of benefits.



Notes: 2019 land cover data sourced from Ecopia Tech Corporation. Geospatial analysis by PlanIT Geo™. All data are preliminary and may be subject to revision.

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UFMP COMMUNITY SURVEY

Over 150 people completed the Phase 1 Urban Forest Management Plan survey. ***Thank you to all respondents!*** Your input will be instrumental in shaping Sarnia's UFMP. More detailed survey results will be presented in an Engagement Summary report available in late Spring 2023. Here are some key takeaways from the survey.

The importance of the urban forest

Nearly 9-in-10 (88%) respondents agreed that **trees are very important** to their quality of life and their enjoyment of Sarnia as a place to live, work in, or visit. Just 6% of respondents said trees were less than "somewhat important" to them.

"I think it is crucial that we increase our canopy as we have lost so much already and newer pests seem to be on the horizon..... I think it would be great to incorporate this learning in schools and get kids involved as their future is directly affected." - Phase 1 UFMP survey respondent

Most valued benefits

The top three categories of urban forest benefits and services most valued by survey respondents are:

- **Environmental benefits** (cleaner air and water, reduced soil erosion and flooding, etc.)
- **Climate change adaptation and mitigation benefits** (shade and cooling; energy use reduction; carbon capture and storage; etc.)
- **Ecological benefits** (wildlife habitat, biodiversity, food for pollinators, etc.)

Urban forest challenges

The top three challenges facing Sarnia's urban forest as identified by survey respondents are:

- **Not enough trees being planted** or trees not being planted and cared for properly
- **Pests, diseases, and invasive species** that can damage or kill trees and forests
- **Trees being damaged or removed** during construction

"Trees have an aesthetic value that cannot be matched by artificial landscaping. More trees will lift the standard of beauty across our city." – Phase 1 UFMP survey respondent

Support for more resources

An overwhelming majority of respondents (91%) **support some level of increased resourcing** for urban forest management. 25% of respondents would support an increase of up to $100 per household per year to enhance urban forest management in Sarnia.

Barriers to engagement and stewardship

The biggest barrier to participating in urban forest stewardship identified by survey respondents (68%) is a **lack of information about opportunities** to get involved. Other significant barriers include a lack of tree knowledge and experience, health or mobility limitations, and financial constraints.

"Sarnia should be a leader in tree planting and maintenance ... we should be known as a city of trees." – Phase 1 UFMP survey respondent

Regulating privately-owned trees

66% of respondents somewhat or strongly support some form of regulation of the injury or removal of privately-owned trees. 25% of respondents somewhat or strongly oppose such regulation.

Incentives for enhancing the urban forest

Private lands in Sarnia account for the majority of Potential Plantable Area (PPA) to expand the urban forest. Two-thirds (67%) of respondents strongly support encouraging tree planting on private lands through subsidies, rebates, tree giveaways, or other incentives.

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