

COMMUNITY FOREST MANAGEMENT PLAN & RISK TREE INVENTORY

VILLAGE OF CANTON
ST. LAWRENCE COUNTY, NY

LAND

Beyond the Sea

Ecological Design



RISK TREE INVENTORY AND MANAGEMENT PLAN
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THANKS TO THE FOLLOWING WHO AIDED WITH THIS PROJECT:

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C H A P T E R O N E

INTRODUCTION



Introduction

HOW IT STARTED

In 2015, the Village of Canton received a New York State Department of Environmental Conservation (DEC) Urban and Community Forestry Grant to complete a Tree Inventory of the Village which was completed by Matt Randi in 2016, and then updated in 2018.

In 2020, The Village received a New York State DEC Urban and Community Forestry Grant to complete a Community Forest Management Plan (CFMP) for Canton's Urban Forest, for which the Village of Canton put out a Request for Proposals to solicit work. The Village hired LBS Ecological (Land Beyond the Sea) to inventory risk trees in the urban forest, and assist in developing the Village's second CFMP (The first CFMP was accomplished in December 1999 to address the 1998 Ice Storm Damage, prepared by Jon Montan of the St. Lawrence County Planning Office in cooperation with the NYS DEC). This document is the culmination of that work, along with the efforts of The Village Tree Committee and Department of Public Works over the last several years to improve the Village's urban forest management operations.

The goal of the project is to acquire an informed framework within which The Village can manage its public trees, in order to improve upon a wealth of benefits and ecosystem services that trees provide, weave nature into the urban fabric of the Village, and promote public safety by striving to keep trees healthy and less risky.

VISION

Canton's vision is a community of people and their homes, stores, and other structures and spaces within a forest of trees. This forest is made up of trees along our streets, roads and highways, in our parks and other public spaces, and around our buildings and structures. This forest is diverse and beautiful and provides many benefits to the people who live, work or visit here. This forest also protects the land and water, purifies the air, and provides habitat for birds and other wildlife. The underlying purpose of our Community Forest Management Plan will be to guide our decision-making toward the best practices for the conservation and maintenance of existing trees and planting new trees that will enhance this forest and our community.

DEC PROGRAM

This project was funded by the NYS Department of Environmental Conservation's Urban and Community Forestry Program. The Program is a partnership between DEC forestry professionals, public and private individuals, and volunteer organizations who care about trees in urban settings. It supports and assists communities in comprehensive planning, management, and education to create healthy urban and community forests to enhance the quality of life for urban residents.

The NYS Urban and Community Forestry Program provides technical assistance to communities through local DEC Urban Foresters and ReLeaf volunteers. Technical assistance includes presentations, training workshops,

(Previous page)
Main Street Canton.

[Image]
Getting ready to work on the risk tree inventory.



brochures, booklets, information on their website, and helpful links to other U&CF related websites. Financial assistance is available from the State through competitive cost-share grants. Eligible project categories included tree inventories and management plans, tree planting, and maintenance and educational programming. Funds are made available from the Environmental Protection Fund and managed and allocated by the DEC. Grant proposals are evaluated for cost effectiveness, projected benefits, use of recommended standards in implementation, community outreach and education, support, and regional impact.



[Image] DEC logo.



[Image] Some street trees on Main Street have died due to lack of watering.



[Image] A group of shovel-ready volunteers gets ready to plant trees in the Fall of 2021 at the Bend in the River Park.

URBAN FORESTRY INFORMATION (from www.dec.ny.gov)

What is Urban and Community Forestry?

Forestry is traditionally associated with management of large tracts of timberland and smaller woodlots. Often these forests are quite distant from the daily lives of most people. However, all of the trees within a town, village, or city make up the "community forest." The community forest can include street and yard trees, parks, cemeteries, school grounds, and undeveloped green spaces. Urban and Community Forestry is the management of community forests to establish and maintain healthy trees for air and water quality benefits, energy savings, environmental health, as well as to enhance the quality of life for urban residents. The urban and community forests also contain wildlife, waterways, built roads and structures, and people.

Why is Urban and Community Forestry Important?

Trees provide numerous environmental, social, and economic benefits for people, yet urban areas present challenging environments for trees to grow and survive in. The urban environment and human actions cause different stresses to urban trees, some of which include: restricted root-growth area, road-salt exposure, soil moisture extremes, compacted soil, reduced soil fertility, pollution, improper pruning, trenching, and damage from lawn-care equipment, snow plows, or vandalism. These stressful growing conditions can cause a decline in tree health and may eventually result in death, if not corrected in time. By actively managing community forests, these valuable resources can be protected and preserved, and enhance the resulting benefits.

What are Benefits of Trees in Urban Areas?

Studies show that trees improve air and water quality, reduce flooding, reduce cooling and heating energy needs, increase property values and improve the quality of life for people and wildlife around them. Trees remove air and water pollutants through both their root systems and their leaves. Tree canopies shade buildings, sidewalks, streets and other structures keeping them cooler which reduces air conditioning and other energy needs in summer. Strategically placed trees, and correct tree species selection, can shelter buildings from cold winds in winter months reducing heating costs. The positive effects trees have on human health and well-being are numerous. Studies have found that exposure to trees reduces the symptoms of stress and depression, can aid in the recovery from surgery, and reduce the incidence of domestic violence. People are more likely to exercise if parks are nearby. When people utilize parks and shady street trees, they are more likely to meet and establish bonds with their neighbors, which helps to create a sense of community. When people enjoy spending time in their neighborhoods, they develop

pride and a sense of ownership in their communities. The presence of trees and the proximity to parks can also increase residential and commercial property values.

PURPOSE, PROCESS, & SCOPE

LBS Ecological, on behalf of the Village of Canton, NY has prepared this CFMP as a technical and planning document for the trees of Canton's Urban Forest. As a technical guidance document, the CFMP identifies current conditions of trees within the Village. As a planning document, the CFMP provides a baseline of information regarding the issues/opportunities/constraints for Urban Forestry in Canton's urban forest and identifies and provides management recommendations.

The project addresses the condition of the urban forest in Canton, and includes the use of the current inventory, a risk assessment of declining and trees in poor health, and the development of a CFMP.

Use of Inventory

The data from the existing inventory informs the management plan. This tree data will be used to determine the urban forest's composition, ecosystem services that the trees provide, and potential pests and pathogens of the urban forest. In addition, the health ratings collected in the inventory were used to determine trees to assess during the risk tree survey.

Risk Tree Survey

All trees from the previous inventory with a health rating of 3 (fair condition) or below were assessed for risk. Risk trees were identified, GPS located, and then assessed for several factors. Factors noted were Location (Lat/Long), street/park location, species, DBH, Crown Dieback, Canopy/Crown Condition, Trunk Condition, Root and Root Collar Condition, Priority Task, Maintenance Recommendation, and Additional Notes/Comments.

Community Forest Management Plan

LBS Ecological has produced this Forest Management Plan based on an environmental benefits analysis that includes:

- Vision for the long-term community forest and strategy to care for the community trees
- Discussion of the current condition and health of the trees and urban forest ecosystem
- Composition of the urban forest
- Urban forest environmental benefit analysis of elements such as water quality, air quality, storm water management etc.
- Vulnerability to health risks and identification of major stressors to the long-term sustainability
- Use of the tree inventory that identifies management needs (such as pruning rotations, tree removal)
- Tree planting opportunities, locations and species options. Bend in the River Park and Rt. 11 Gateway are two areas that were targeted for development of tree planting plans.
- Prioritized strategies and work tasks (with budget and timelines) to meet the long-term vision. This section will serve as the forest work plan for the Village.

The CFMP can be included in aspects of future planning related to the Canton's urban forest. LBS Ecological delivered the Plan to the Village to provide guidance to all those involved with the ongoing maintenance of the tree inventory and implementation of the CFMP. The project will build the capacity of the Village to promote the community's enjoyment of and connection to the urban forest, educate and involve the community in developing an appreciation and understanding of the unique urban forest and local ecosystem, and demonstrate and encourage sustainability concepts and practices that will inspire all of us to live in balance with the natural systems upon which all life depends.



[Image] A large silver maple street tree in Canton.

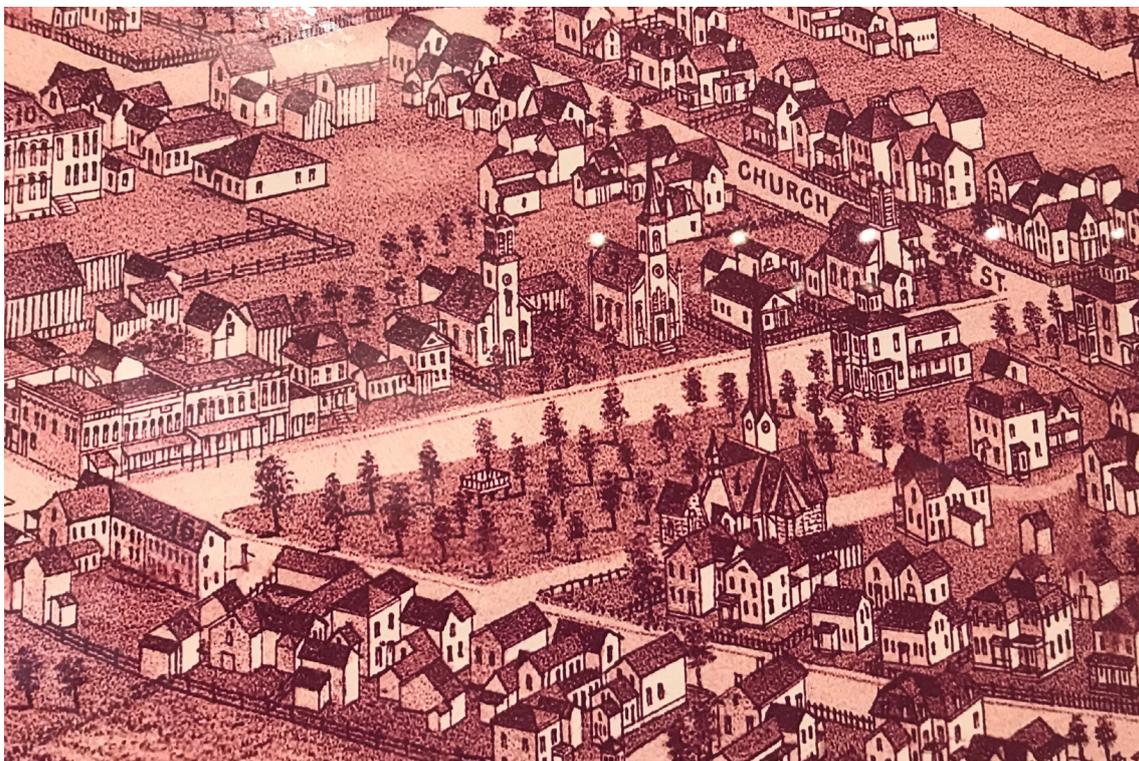
Canton's Urban Forest Background

HISTORY (<https://www.northcountryhistories.org/narrative/canton>)

The Village of Canton is located near the eastern-central portion of the Town along the Grasse River. In 1800, Stillman Foote arrived in Canton and settled a one-square mile area of land, which eventually became the Village. Foote established the first sawmill on the Grasse River and several families soon followed. The population began to build as did opportunities for industry along the Grasse River and agriculture on the rich soils in the area. Industry and the population in Canton continued to grow through the mid-20th Century, creating a vibrant and diverse local economy. The Village contains the community's main business district along Main Street and includes a diversity of small businesses, restaurants and services. The Village also houses educational institutions like SUNY Canton and St. Lawrence University and county and municipal government services. While the Village has experienced a loss of industry and large-scale investment since the mid-20th Century, the community remains vibrant and economically diverse. The vibrancy of the Village is exemplified by its unique small-town feel, cultural and educational institutions and connections to the rich history and people that make up the community.

Prior to European colonists coming to Canton, it was inhabited by Iroquois Confederacy tribes, specifically by the Mohawk, also known as Kanienkehaka (or 'keepers of the flint'). Mohawk lived on both sides of the river and primarily farmed corn, although they also fished and hunted.

The village of Canton was first settled by Europeans in the summer of 1800, by Stillman Foote, from Middlebury, Vermont. Mr. Foote purchased the square mile that would become the center of Canton Village, and returned to Vermont that fall. By the spring of 1802, Stillman Foote returned to Canton with his wife and three children; several Vermont families came not long after. The town became established by the state legislature in 1805 under state law, split from the town of Lisbon. Mr. Foote built a grist mill to compliment his grain mill, and built a forge sometime after, along with other industries.



[Image] An 1885 drawing depicting the Village Green and surrounds.



The Village Green is privately owned but managed by the Village. Centrally located in the Village of Canton, this park is used and frequented by most all of the residents and visitors of the Village.

by the Mayor and Village Trustees. The Village Superintendent is an ex officio member of the Committee. The mission of the Tree Committee is to protect and improve the Village tree canopy, establish both an annual and long-term community tree plan, communicate to others the importance of trees, and implement community tree planting projects.

The Committee focuses its work on Village-owned properties, but it also partners with other public, quasi-public and private property owners on matters related to the village urban forest. In the past, other groups and individuals have worked in a similar manner to improve the Village. As a result of these efforts, past and present, Canton is more beautiful, has a more pleasant climate and environment, and is more biologically diverse.

Planning efforts of the Tree Committee have resulted in a 5-year plan (2018-2023) that has acted as guidance to develop this plan. Its purpose was to guide the Committee's efforts and inform the Village Board of Trustees and the community as a whole of the Committee's work and aims. The current Tree Committee 5-Year Plan Draft is an update of the 2015 Plan. The Committee views this Plan as a work in progress that will be regularly reviewed and updated as time passes and conditions change. The 5-Year Plan includes projects, programs and priorities including planning for the Tree Committee, tree inventory, new tree plantings, mitigating the threats to existing trees, and details for program and project planning and management.

The Tree Committee aids in management of the urban forest and integrates with other Village entities and operates as follows:

Program and Project Planning and Management.

The 2015 5-year Tree Committee Plan was the Tree Committee's initial attempt at organizing Canton's tree management needs over a period spanning several years. An update in 2018 of the 5-year Tree Committee Plan extends the reach of the 5-year Plan to 2023. By design, the Plan is broad in its scope, reflecting the limitations of an all-volunteer committee whose role in Village government is evolving. The Tree Committee annually reviews and updates the Plan and submits it to the Mayor and Board of Trustees for their information and consideration.

As an all-volunteer group, the success of the Tree Committee relies upon the dedication of its members to pursuing the Committee's mission. Maintaining a productive working relationship with the Village government is essential to carrying out its mission, as is the support of the community as a whole. The Committee had stated a need for this comprehensive CFMP to guide tree work of the Village. Building on the recently completed tree inventory, this plan provides a framework for decision-making regarding maintaining existing trees and planting new ones.

Mayor and Village Board of Trustees.

The Tree Committee has made a concerted effort to keep the Mayor and the Village Board of Trustees informed of its activities. The Mayor issues proclamation for Arbor Day each year and the Trustees approve a municipal resolution for the Tree Committee to apply for State and private grant opportunities. It is noteworthy that the Committee does not directly participate in the annual budget process. Establishing and maintaining effective and productive two-way communication with the Village governing body is an on-going objective.

Village Superintendent and Department of Public Works.

The Village Superintendent directs the work of the Department of Public Works (DPW), which is responsible for planting and maintaining street trees and trees in parks and other public spaces in the Village. The Superintendent also prepares competitive bid announcements for procurement of trees and performs many other functions related to the work of the Committee. This is a complex responsibility and there may be opportunities for streamlining communications.

Tree Experts and Forestry Professionals.

The Committee makes a concerted effort to maintain communications with tree and forestry professionals

with responsibilities in the local region. The NYSDEC Regional Forester and a representative of National Grid regularly attend and actively participate in Tree Committee meetings. The Committee maintains communication with other organizations that include St. Lawrence County Cornell Cooperative Extension, St. Lawrence County Emerald Ash Borer Task Force, and St. Lawrence County Soil & Water Conservation District. Maintaining such communications is an on-going activity of the Tree Committee.

Consideration of new approaches to accessing professional urban forestry services may deserve consideration. Having an arborist or other tree professional on the DPW staff (or training existing staff in various areas of arboriculture, such as non-aerial structural pruning) may be a viable option. Another option may be expanding the responsibilities of the Director of Parks and Recreation to include overseeing the management of the community tree canopy. A third option may be sharing an arborist or other qualified tree professional with another community such as neighboring Potsdam.

Community Information and Education.

Public relations building is an important on-going aspect of the Tree Committee's work. The Tree Committee continues its efforts to educate and inform the public about the benefits of urban trees and tree selection, planting, and maintenance practices. Tree Planting and Care workshops have been scheduled in numerous areas. The workshops are a key component of the collaboration with tree professionals and other organizations.

Tree City USA.

This program is sponsored by the National Arbor Day Foundation and provides direction, technical assistance, public attention and national recognition for urban and community forestry programs in thousands of towns and cities. Canton has been a Tree City USA for 10 years and can be proud of this achievement. The Tree Committee has completed the required certification, ensuring that Canton meets the program's criteria. This certification allows the village to both point to its efforts in on-going management of its tree canopy, serves as a focal point of pride for the community, and assists with public outreach efforts.

Fund Raising.

To a large extent, the Tree Committee's past work has been supported by grants and donations of money and labor. Working in conjunction with the Village's Director of Economic Development, such fund-raising efforts should continue and expand to the fullest practicable extent during the 5-year plan period.

Fund raising has resulted in tree purchases, inventory work, and planning. Goals for the upcoming years should include funding for urban forest canopy maintenance (e.g. tree pruning or removals), tree planting and continued implementation of the maintenance plan. Also recommended is an update to the tree inventory.

Memorial Tree Program.

A Memorial Tree Program was initiated by the Tree Committee in 2010. The objective of the program is to enhance the beauty of Canton through private donations that enable the planting of "Memorial Trees" on Village-owned land. The program targets plantings in parks and other public spaces where new trees would provide shade, natural beauty and other environmental benefits. Many Memorial Trees have been planted under this program, including several in Willow Island Park and Bend in the River Park. This is an on-going effort by the Tree Committee and will be continued.

Volunteer Services.

In the past, many of the Committee's planting and maintenance efforts were carried out by Committee members and other volunteers, young and old, from the community. Tree planting is hard physical work and organizing volunteers can be a time-consuming process. In addition, the reliability of volunteers is sometimes an issue, as is liability. New approaches to using volunteers should also be considered, such as volunteer pruning (<https://treesny.org/citizen-pruners-stewardship/>) or tree watering. Looking to the future, there may be a shift toward greater reliance on nursery and landscape contractors and/or Village DPW personnel.

COMMUNITY FOREST MAINTENANCE BY THE DEPARTMENT OF PUBLIC WORKS

While the Tree Committee works to plan the urban forest, maintenance of public trees including pruning and removals is carried out by the Department of Public Works. The Superintendent of Public Works may be authorized by the Board of Trustees to cut down and remove or trim and prune any tree in any street or public place if the Board determines that such trimming or removing is in the public interest.

In addition, to promote general welfare, the Village regulates the removal of infected, diseased or dangerous trees on property within the village limits situated adjacent to the street or public rights-of-way after giving due notice to the owner of the tree(s) and tagging them to indicate that the tree(s) are to be removed. The first opportunity for removal is afforded the owner of such trees by giving five days' notice in writing. Thereafter, if the removal isn't accomplished by the owner, it is then removed at Village expense, with the Village having the right to assess such expense against the owner by any means provided by law.

The Village DPW also controls and specifies all tree planting on public property, with help from the Tree Committee and volunteers who play a huge role in grassroots efforts as well. Somewhat uniquely, The Village Superintendent of Public Works is also authorized to enter into written agreements with owners of private property within the village which will provide the village with the right to plant trees on private property within 10 feet of the street or public right-of-way. This allows for potential for planting trees in areas that would otherwise not be possible. Creating and advertising an application process for tree planting on public and public-adjacent private properties (as budgets may allow) would be a positive step in increasing the urban forest canopy, while at the same time educating residents about the benefits of urban trees and potentially increasing volunteer pool.

Public trees in the Village are protected from harm and removal via an adopted code. No person, without permission or a work order from the Village, is allowed to trim (or injure, etc.) any urban trees without consent of the adjacent owner and Board of Trustees. Also, no trees can be planted in the Village between the sidewalk and the street without the same consent.

Documents concerning current Village Legislation/Code and Urban Forest Management Planning including the 5-year plan can be found in the appendix.

The Village of Canton has also taken steps towards combatting climate change and building a more resilient community to withstand its effects. Under the guidance of the Sustainability Committee, the Village has taken the Climate Smart Communities Pledge, the first step as part of the DEC Climate Smart Communities Program that encourages communities across the State to reduce greenhouse gas emissions and improve climate resilience by implementing practices for mitigating and adapting to climate change (Canton Comprehensive Plan). While trees in urban forests are not explicitly the aim of the Climate Smart Communities Program, improved urban forest management will be a positive addition in terms of reducing some of the impacts of climate change (increased heat waves/rainfall), and has an additional benefit in terms of carbon sequestration and storage.

EDUCATION, COMMUNITY INVOLVEMENT AND PUBLIC INPUT

Community participation in planning for and tending to the urban forest in the Village has been critical, and has added a great amount of capacity for tree planting and related tree work. The Tree Committee is made up of volunteers, and community members have planted most of the new trees in the Village.

Past community events and outreach includes several community planting sessions. The Lincoln Street Green Corridor is one example. Tree planting work begun shortly after the Tree Committee's creation in 2010. The Tree

Committee identified a corridor along Lincoln Street from the Buck Street Playground to (and including) Bend in the River Park as a priority area for new tree plantings. With financial assistance via a NYSDEC Urban Forestry Grant, and other assistance from the community, approximately 75 new trees have been planted in this area.

An additional tree planting project has occurred at Bend in the River Park in the fall of 2018. A cooperative venture including the St. Lawrence County Soil & Water Conservation District (SWCD), St. Lawrence County Cornell Cooperative Extension, St. Lawrence County Emerald Ash Borer Task Force, and the Village Department of Public Works and Tree Committee felled and removed 15 ash trees and planted 18 new shade trees along the Park's Grasse River waterfront.

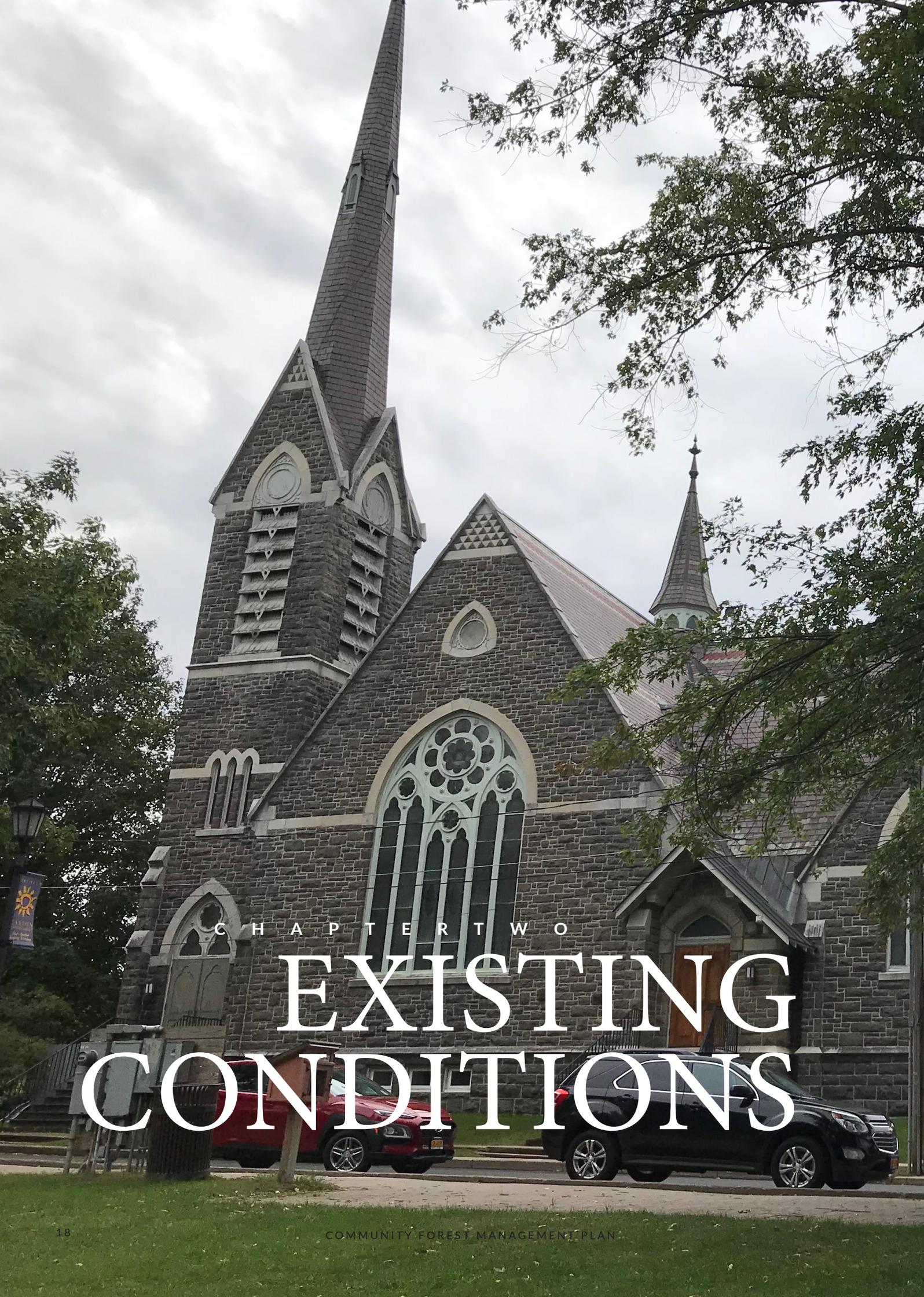
Bend in the River Park also had another large community planting event during the fall of 2021. With the help of the Village DPW and at least 75 volunteers from the Canton community, the Village and Tree Committee planned, procured, and planted a diverse mix of 42 trees in a little more than one week. This was, without a doubt, the most significant tree planting event in the eleven-year history of the Canton Tree Committee. This planting was funded from both the NYS Urban Forestry Council for \$1,000 and the St. Lawrence Eastern Lake Ontario Partnerships for Region Invasive Species Management (SLELO PRISM) for \$5,000.

The planting projects were instructional for students, families and children, property owners and others interested in learning about tree planting practices. The projects were explicitly educational: for example, at several planting events signs were attached to trees that expressed the many benefits of trees. Participants also learned about Village trees and parks' histories. As an example, Bend in the River Park, located along the Grasse River, was created on the site of a former Village dump in 1983 with federal financial assistance.

The project team and volunteers also implemented more effective communications and cooperation between the Tree Committee, the Village Superintendent and the DPW. Working with trees has led to some exciting new ideas for future improvements, such as shade tree plantings on the west side of the softball field, and an educational walkway with signage that addresses the Grasse River watershed and its fish and wildlife, forest cover, and recreational opportunities. The Village also established significant new relationships with the organizations who funded the tree purchases. And finally, plantings have functioned as a learning experience for the Committee and the Village, wherein the Village planted many less-costly bare root trees, rather than containerized stock, to see if this method is more feasible for future plantings.

This CFMP will build on these previous efforts, with hopes to catalyze even more regular tree planting, and support for the urban forest. Well-publicized and well-attended tree planting or other maintenance events in the urban forest (e.g., Citizen Pruner training and active participation) in turn supports the community by educating the community and increasing environmental literacy.

Existing and future efforts in education and outreach should continue to be designed to include events to reach children and teenagers. The Village philosophy includes educating, empowering, and inspiring youth so that they will become stewards of the urban forest as they grow into adulthood. Given the long-term nature of tree growth and urban forest time cycles, young people will be the ones ultimately responsible for seeing urban forest stewardship through.



C H A P T E R T W O

EXISTING CONDITIONS





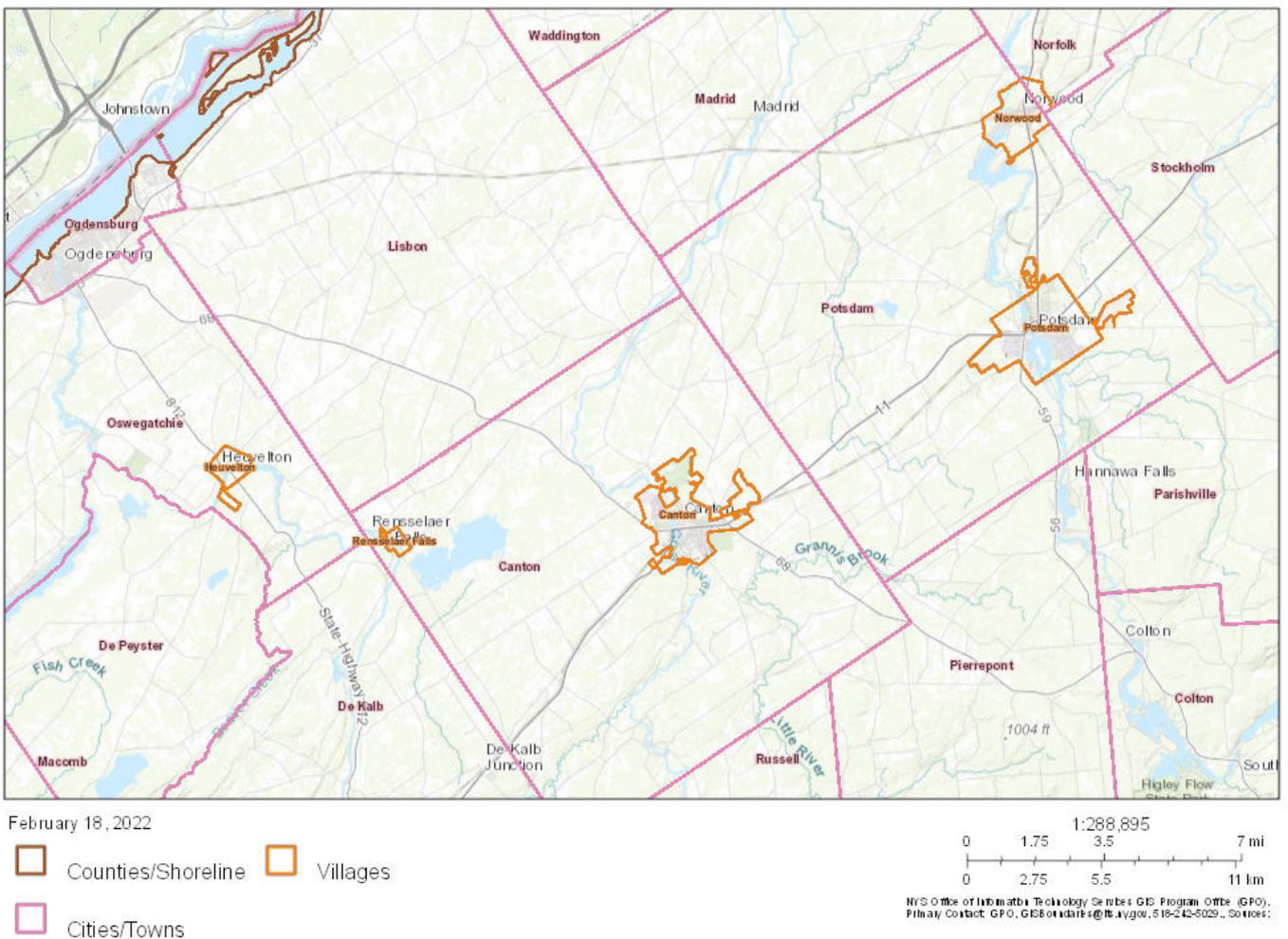
A large silver maple tree street tree next to a remnant of the past.

Existing Conditions of Canton's Urban Forest

CANTON'S LOCATION

The Village of Canton is located near the eastern-central portion of the Town of Canton along the Grasse River, chosen by initial European colonists for its position along the river allowing for establishment of a sawmill. The population grew in the area as a result of agricultural opportunities on the rich soils in the area, ample timbering opportunities, and subsequent opportunities for industrial build-up along the Grasse River. The Village contains the community's main business district along Main Street and includes a diversity of small businesses, restaurants and services. The vibrancy of the Village is exemplified by its unique small-town feel, cultural and educational institutions and connections to the rich history and people that make up the community.

Village of Canton



[Image] (above)
 Location of Village of Canton.

ASSOCIATION WITH BROADER LANDSCAPE & ECOREGION

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources; they are designed to serve as a spatial framework for research, assessment, management, and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance (Bryce and others, 1999). These generalized ecological regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernmental organizations that are responsible for different types of resources within the same geographical areas (Omernik and others, 2000).

Canton is located in the Eastern Great Lakes Lowlands Ecoregion of New York (Ecoregion 83). The Eastern Great Lakes Lowlands ecoregion surrounds the highland ecoregions of northern New York State. Valleys and lowlands are underlain by interbedded limestone, shale, and sandstone rocks that are more erodible than the more resistant rocks composing the adjacent mountainous areas. The topography and soils of the lowlands have also been shaped by glacial lakes and episodic glacial flooding. Limestone-derived soils are fine-textured, deep, and productive. As a result, much of the region was cleared for agriculture or urban development and less native forest remains than in surrounding ecoregions like the Northeastern Highlands (58) or the Northern Allegheny Plateau (60). Most agricultural activity is devoted to dairy operations, although orchards, vineyards, and vegetable farming are important locally, particularly near Lake Ontario and St Lawrence River.



[Image] (above)

Ecoregion, and Association with the Broader Landscape of Canton, NY.

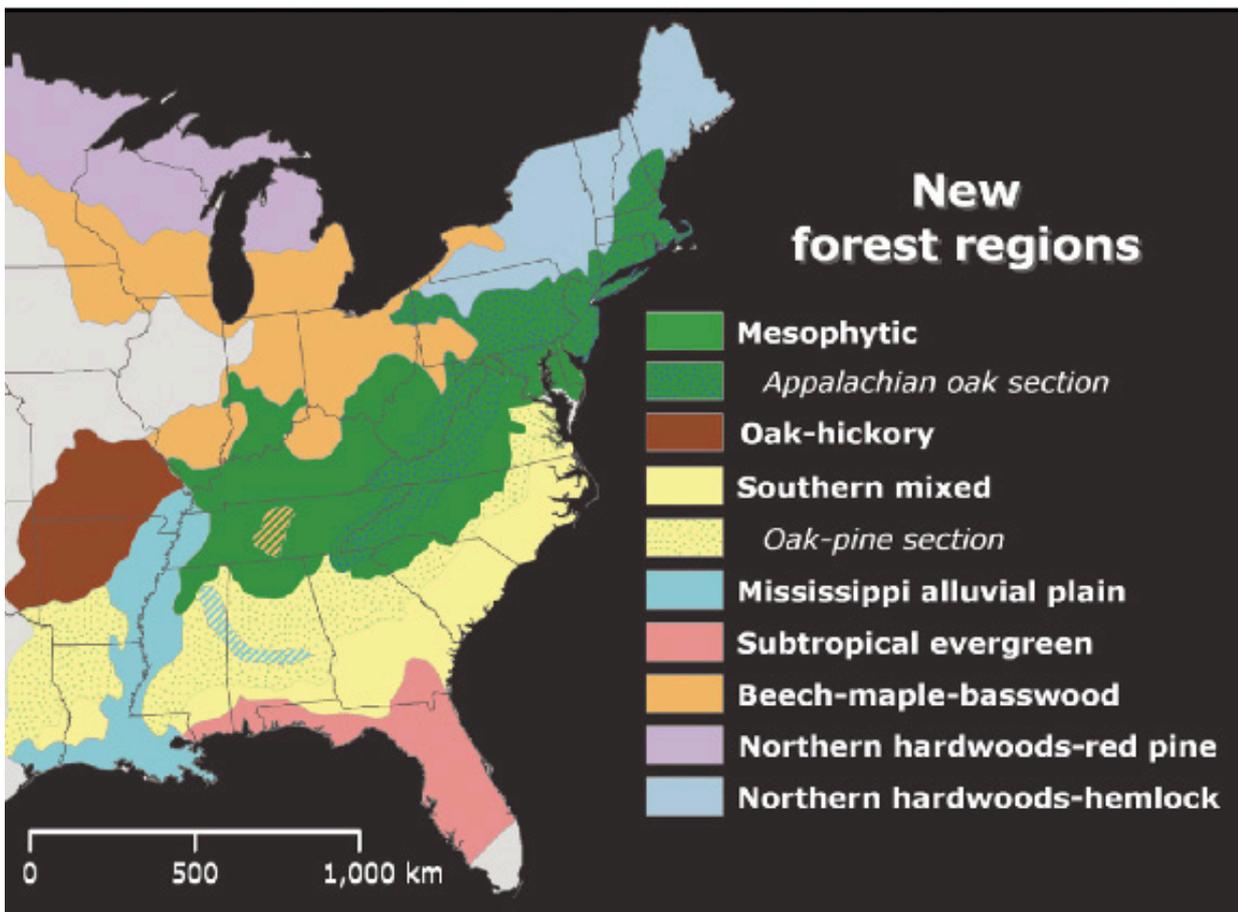
More specifically, Canton is located the St. Lawrence Lowlands ecoregion (83d). The St. Lawrence Lowlands ecoregion covers the lowest portions of the St. Lawrence Valley, including level glacial lake and marine plains and scattered low ridges. The climate of the St. Lawrence Lowlands is temperate with moderately warm summers and cold winters. The St. Lawrence River has a moderating effect on temperatures, although it is not as strong as the effect of Lake Ontario on the Erie/Ontario Lake Plain (83a) and Ontario Lowlands (83c). Precipitation amounts are generally lower than in other areas of the state, except the Champlain Lowlands (83b). A belt of limestone and another of sandstone form the parent material for St. Lawrence soils. Most soils are frigid in temperature regime, differing from lowland soils elsewhere in the state that are typically mesic. Although there is little forest land left in the St. Lawrence Lowlands, remnant forest vegetation varies according to soil conditions. Forests on clay soils include sugar maple, beech, and hemlock; sandy soils support black and red oak, white pine, pitch pine, and red maple. Red maple, swamp white oak, white ash, and elm grow in wetland soils. Sand and clay soils found in the glacial lake and marine plains have been cleared for agriculture since the late 18th century. Farms produce hay, grain, potatoes, and dairy products.

Canton also borders the Upper St. Lawrence Valley ecoregion (83e) and therefore shares some characteristics with this region as well. The Upper St. Lawrence Valley ecoregion which is the more elevated and rolling portion of the valley, located south of the more level glacial marine and lake plains of the St. Lawrence Lowlands (83d) and slowly rising in elevation from about 500 feet to over 1400 feet near the boundary of the Northern and Western Adirondack Foothills (58ab). It includes the toeslopes of the Adirondack Foothills and the narrow Black River Valley between the Adirondacks and the Tug Hill Plateau. The underlying geology in the east is mostly sandstone; in the west, it is a mix of quartz, gneiss, and marble. Northern hardwoods dominate the hills, although small farms also occur in a landscape mosaic with abandoned fields and woodlots. Farms produce hay, grain, potatoes, and dairy products. In the Upper St. Lawrence Valley, the network of intersecting glacial outwash channels dominating the northern Adirondack Foothills (58ab) coalesces to form flowages, a series of swampy channels that feed the major rivers flowing north to the St. Lawrence River (e.g., the Salmon, St. Regis, Raquette, Grasse, and Oswegatchie rivers).

NATURAL VEGETATION

Canton exists in the Northern Hardwoods-Hemlock region of the Deciduous Forests of Eastern North America.

The Northern Hardwoods-Hemlock Forest is a mixed forest that typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps. Eastern hemlock (*Tsuga canadensis*) is codominant with any one to three of the following tree species: American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), red maple (*A. rubrum*), black cherry (*Prunus serotina*), white pine (*Pinus strobus*), yellow birch (*Betula allegheniensis*), black birch (*B. lenta*), red oak (*Quercus rubra*), and basswood (*Tilia americana*). The relative cover of eastern hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20% of the canopy cover. Striped maple (*A. pensylvanicum*) is often prominent as a mid-story tree. This is a broadly defined and very widespread community with many variants. For example, in the Hudson Valley, eastern hemlock is sometimes codominant with red oak; in the Adirondacks, yellow birch and sugar maple are sometimes codominant. (NYNHP)



[Image] (above)

Forest Regions of the Eastern USA (Dyer, 2006).



[Image] (above)

During a tree planting event the Village posted signs that list benefits of the urban forest.





CHAPTER THREE

FOREST INVENTORY

Current State of the Urban Forest

I-TREE ECOSYSTEM ANALYSIS, URBAN FOREST EFFECTS AND VALUES

The Village of Canton in 2016-2019 prepared an inventory of trees on public lands within the Village. Local arborist Matt Randi was hired under contract to undertake the inventory. The inventory was completed with a grant from NYSDEC. The data collected was added to the Village infrastructure GIS database managed for the Village by the Development Authority of the North Country (DANC). The Tree Committee discovered some errors and omissions in the inventory, which have since been corrected.

Data from the Inventory was analyzed using the i-Tree Eco model. i-Tree Eco is designed to use standardized field data from forest plots and local hourly air pollution and meteorological data to quantify urban forest structure and its numerous effects (Nowak and Crane 2000), including:

- Tree Characteristics and urban forest structure (e.g., species composition, tree health, leaf area, etc.).
- Amount of pollution removed hourly by the urban forest, and its associated percent air quality improvement throughout a year.
- Total carbon stored and net carbon annually sequestered by the urban forest.
- Structural value of the forest, as well as the value for air pollution removal and carbon storage and sequestration.
- Potential impact of infestations by pests, such as Asian longhorned beetle, emerald ash borer, gypsy moth, and Dutch elm disease.

All field data were collected during the leaf-on season to properly assess tree canopies. Data collection included tree cover, individual tree attributes of species and stem diameter (Nowak et al 2005; Nowak et al 2008).



[Image] (above)

A street with no trees planted in the ROW (right of way). Many new plantings could be achieved here.



[Images] (above)

An additional benefit of the urban forest. Families enjoy tapping maple trees to make maple syrup in the spring.

i-Tree Analysis Findings

I-TREE SUMMARY

Understanding an urban forest's structure, function and value can promote management decisions that will improve human health and environmental quality. An assessment of the vegetation structure, function, and value of Canton's street and park trees was conducted during 2021. Data from 859 trees located throughout Canton were analyzed using the i-Tree Eco model developed by the U.S. Forest Service, Northern Research Station.

- Number of trees: 859
- Tree Cover: 6.811 acres
- Most common species of trees: sugar maple, apple, white ash
- Percentage of trees less than 6" (15.2 cm) diameter: 35.5%
- Pollution Removal: 246.9 pounds/year (\$396/year)
- Carbon Storage: 531.5 tons (\$90.6 thousand)
- Carbon Sequestration: 4.383 tons (\$748/year)
- Oxygen Production: 11.69 tons/year
- Avoided Runoff: 17.01 thousand cubic feet/year (\$1.14 thousand/year)
- Structural values: \$1.57 million

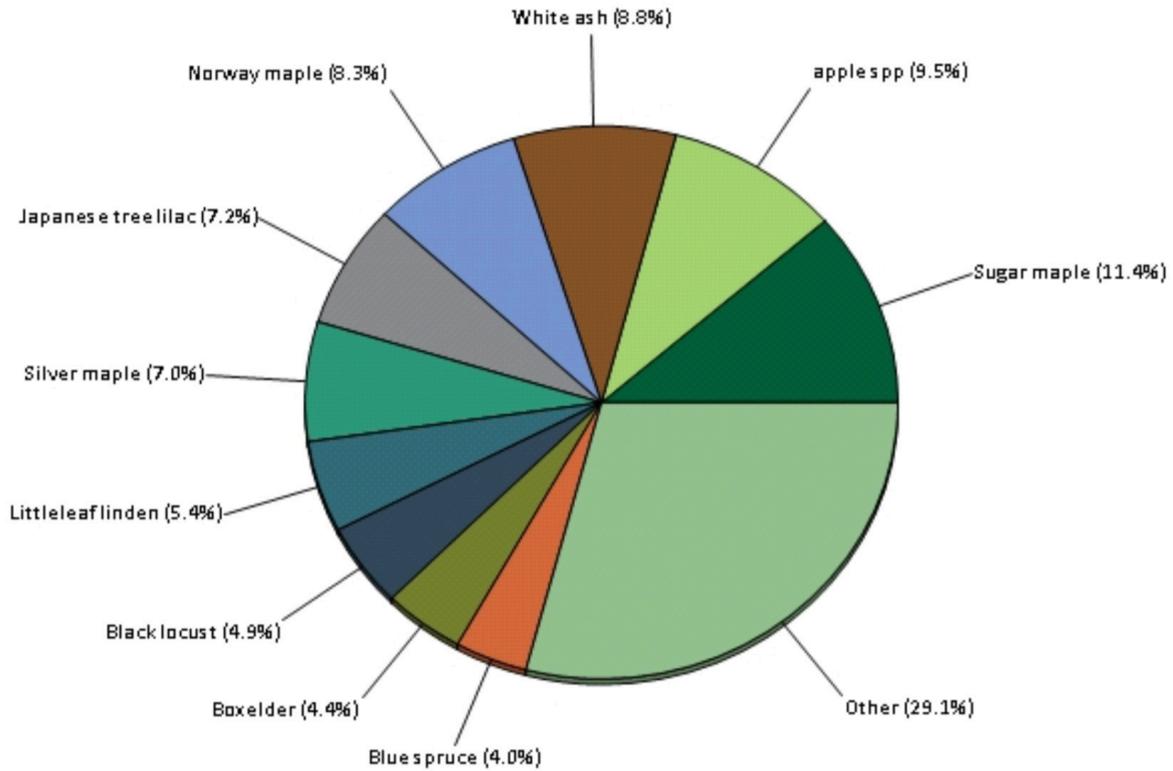


[Image]

As this young gingko tree grows it will remove more pollution, store and sequester more carbon, produce more oxygen, and stop more runoff. This tree was planted at the request of former Mayor Charlotte Ramsay, who originally formed the Canton Tree Committee.

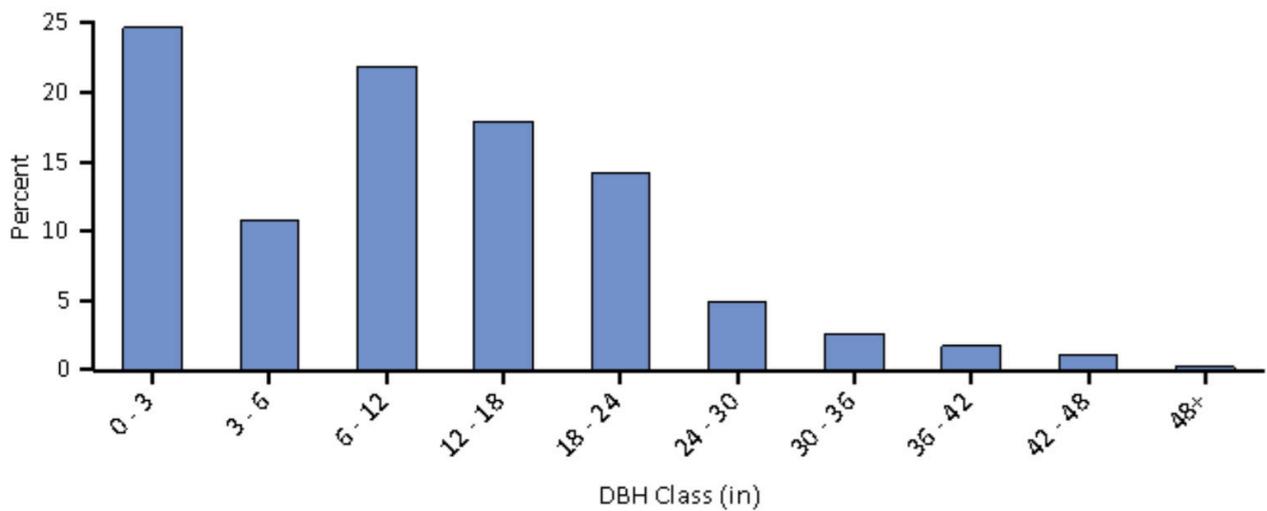
I-TREE CHARACTERISTICS OF CANTON'S STREET AND PARK TREES

The urban forest of Canton has 859 trees with a mixed tree cover. The three most common species are sugar maple (11.4 percent), apple spp. (9.5 percent), and white ash (8.8 percent)

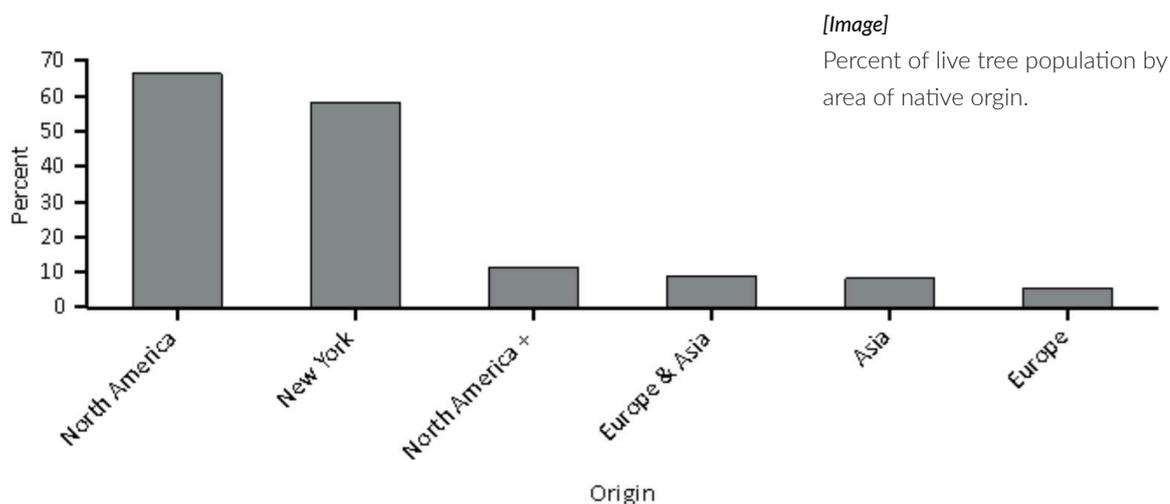


[Images]

Tree Species Composition (above), and % Population by Diameter Class (below).



Urban forests are composed of a mix of native and exotic tree species. Thus, urban forests often have a tree diversity that is higher than surrounding native landscapes. Increased tree diversity can minimize the overall impact or destruction by a species-specific insect or disease, but it can also pose a risk to native plants if some of the exotic species are invasive plants that can potentially out-compete and displace native species. In Canton, about 66 percent of the trees are species native to North America, while 58 percent are native to New York. Species exotic to North America make up 34 percent of the population. Most exotic tree species have an origin from North America + (11 percent of the species).



Invasive plant species are often characterized by their vigor, ability to adapt, reproductive capacity, and general lack of natural enemies. These abilities enable them to displace native plants and make them a threat to natural areas. Three of the 43 tree species in Canton are identified as invasive on the state invasive species list (https://www.dec.ny.gov/docs/lands_forests_pdf/isprohibitedplants2.pdf). These invasive species comprise 13.3 percent of the tree population though they may only cause a minimal level of impact. These three invasive species are Norway maple (8.3 percent of population), Black locust (4.9 percent), and Russian olive (0.1 percent).



[Image]

Oriental bittersweet is an invasive vine that can overtake trees. While not typically a problem for street trees, trees in parks can be affected by this plant.

URBAN FOREST COVER AND LEAF AREA

Many tree benefits equate directly to the amount of healthy leaf surface area of the plant. Public trees (street and park trees) cover about 6.811 acres of Canton and provide 45.09 acres of leaf area.

In Canton, the most dominant species in terms of leaf area are sugar maple, silver maple, and white ash. The 10 species with the greatest importance values are listed below. Importance values (IV) are calculated as the sum of percent population and percent leaf area. High importance values do not mean that these trees should necessarily be encouraged in the future; rather these species currently dominate the urban forest structure.

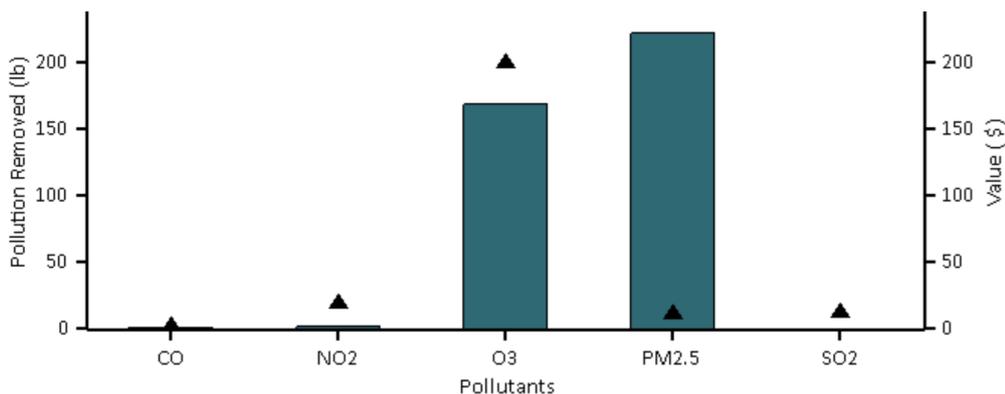
<i>Species Name</i>	<i>Percent Population</i>	<i>Percent Leaf Area</i>	<i>IV</i>
Sugar maple	11.4	21.2	32.6
Silver maple	7.0	15.9	22.9
White ash	8.8	8.9	17.8
Norway maple	8.3	7.8	16.0
Littleleaf linden	5.4	6.8	12.1
White spruce	3.7	8.3	12.0
apple spp	9.5	1.2	10.8
Boxelder	4.4	5.1	9.5
Japanese tree lilac	7.2	0.7	7.9
Black locust	4.9	2.0	6.8

[Table]

Most important species in Canton for Leaf Area.

AIR POLLUTION REMOVAL

Poor air quality is a common problem in many urban areas. It can lead to decreased human health, damage to landscape materials and ecosystem processes, and reduced visibility. The urban forest can help improve air quality by reducing air temperature, directly removing pollutants from the air, and reducing energy consumption in buildings, which consequently reduces air pollutant emissions from the power sources. Trees also emit volatile organic compounds that can contribute to ozone formation. However, integrative studies have revealed that an increase in tree cover leads to reduced ozone formation (Nowak and Dwyer 2000). Pollution removal by public trees in Canton was estimated using field data and recent available pollution and weather data available. Pollution removal was greatest for ozone. It is estimated that trees remove 246.9 pounds of air pollution (ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), particulate matter less than 2.5 microns (PM2.5)2, and sulfur dioxide (SO2)) per year with an associated value of \$396.



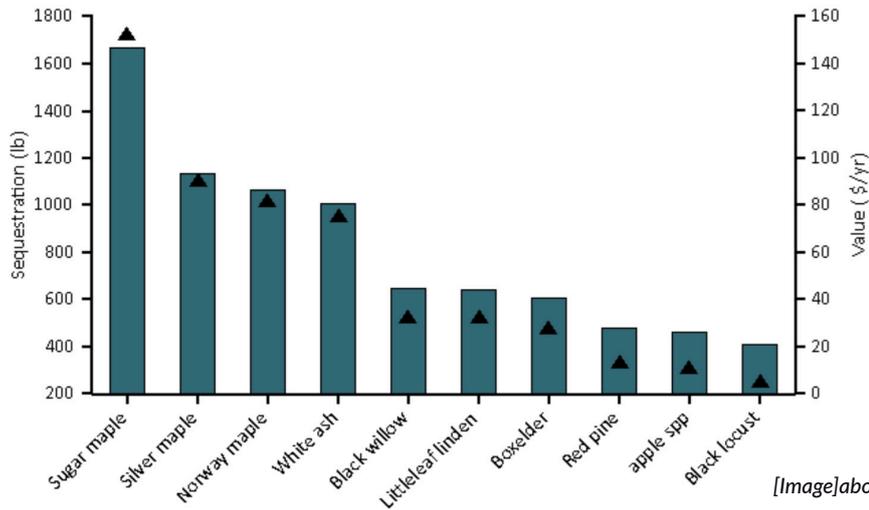
[Image]

Annual Pollution Removal by Trees in Canton.

CARBON STORAGE AND SEQUESTRATION

Climate change is an issue of global concern. Urban trees can help mitigate climate change by sequestering atmospheric carbon (from carbon dioxide) in tissue and by altering energy use in buildings, and consequently altering carbon dioxide emissions from fossil-fuel based power sources (Abdollahi et al 2000).

Trees reduce the amount of carbon in the atmosphere by sequestering carbon in new growth every year. The amount of carbon annually sequestered is increased with the size and health of the trees. The gross sequestration of public trees is about 4,383 tons of carbon per year with an associated value of \$748.

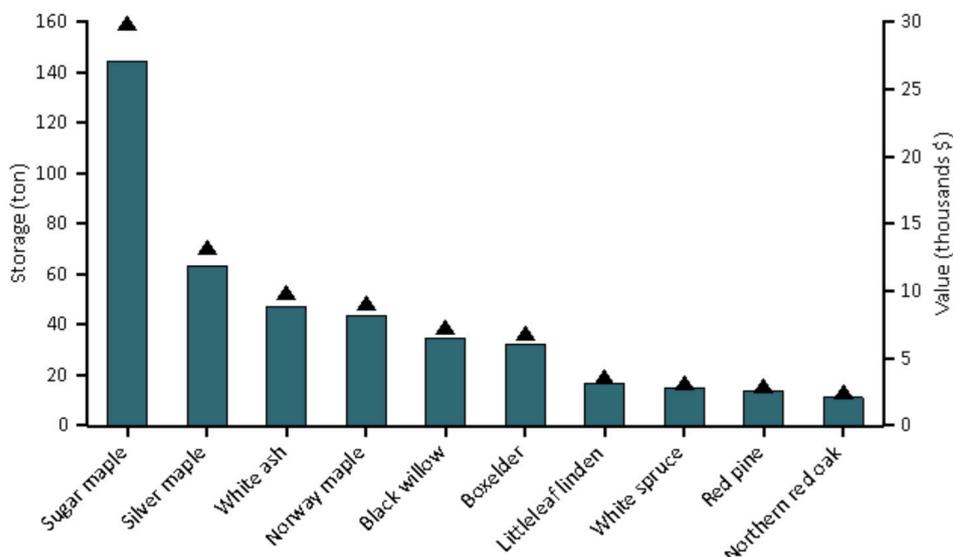


[Image]above

Annual Gross Carbon Sequestration by Tree Species.

Carbon storage is another way trees can influence global climate change. As a tree grows, it stores more carbon by holding it in its accumulated tissue. As a tree dies and decays, it releases much of the stored carbon back into the atmosphere. Thus, carbon storage is an indication of the amount of carbon that can be released if trees are allowed to die and decompose. Maintaining healthy trees will keep the carbon stored in trees, but tree maintenance can contribute to carbon emissions (Nowak et al 2002c). When a tree dies, using the wood in long-term wood products, to heat buildings, or to produce energy will help reduce carbon emissions from wood decomposition or from fossil-fuel or wood-based power plants.

Public trees in Canton are estimated to store 531 tons of carbon (\$90.6 thousand). Of the species sampled, Sugar maple stores and sequesters the most carbon (approximately 29.9% of the total carbon stored and 19.6% of all sequestered carbon.)



[Image]left

Carbon Storage by Tree Species.

OXYGEN PRODUCTION

Oxygen production is one of the most commonly cited benefits of urban trees. The annual oxygen production of a tree is directly related to the amount of carbon sequestered by the tree, which is tied to the accumulation of tree biomass.

Public trees in Canton are estimated to produce 11.69 tons of oxygen per year. However, this tree benefit is relatively insignificant because of the large and relatively stable amount of oxygen in the atmosphere and extensive production by aquatic systems. Our atmosphere has an enormous reserve of oxygen. If all fossil fuel reserves, all trees, and all organic matter in soils were burned, atmospheric oxygen would only drop a few percent (Broecker 1970).

Species	Oxygen (pound)	Gross Carbon Sequestration (pound/yr)	Number of Trees	Leaf Area (acre)
Sugar maple	4,580.90	1,717.84	98	9.57
Silver maple	2,922.31	1,095.87	60	7.16
Norway maple	2,696.43	1,011.16	71	3.50
White ash	2,526.21	947.33	76	4.03
Black willow	1,388.35	520.63	13	1.73
Littleleaf linden	1,376.86	516.32	46	3.06
Boxelder	1,262.30	473.36	38	2.30
Red pine	875.78	328.42	34	1.14
apple spp	813.63	305.11	82	0.56
Black locust	651.39	244.27	42	0.88
Japanese tree lilac	499.58	187.34	62	0.32
White spruce	484.31	181.61	32	3.72
Eastern white pine	450.54	168.95	28	1.14
American elm	432.07	162.02	24	0.48
Blue spruce	398.99	149.62	34	1.28
Northern red oak	311.61	116.85	9	0.80
Northern white cedar	298.40	111.90	16	0.59
Paper birch	235.08	88.16	5	0.33
Pin oak	183.94	68.98	16	0.23
American basswood	167.50	62.81	3	0.76

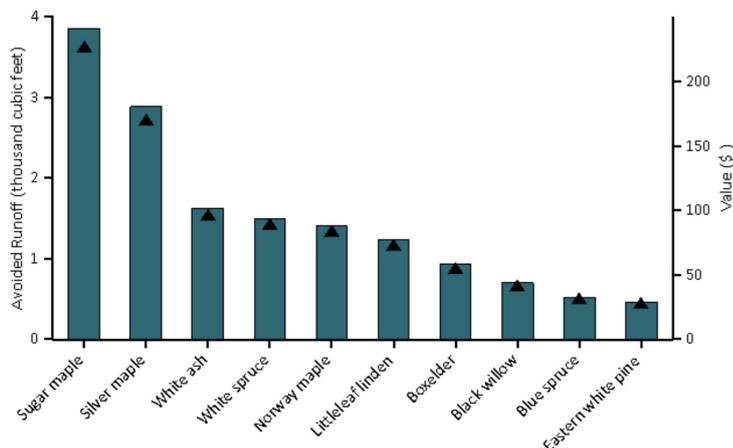
[Image] (above)

Top 20 Oxygen Producing Tree Species.

AVOIDED RUNOFF

Surface runoff can be a cause for concern in many urban areas as it can contribute pollution to streams, wetlands, rivers, lakes, and oceans. During precipitation events, some portion of the precipitation is intercepted by vegetation (trees and shrubs) while the other portion reaches the ground. The portion of the precipitation that reaches the ground and does not infiltrate into the soil becomes surface runoff (Hirabayashi 2012). In urban areas, the large extent of impervious surfaces increases the amount of surface runoff.

Urban trees, however, are beneficial in reducing surface runoff. Trees intercept precipitation, while their root systems promote infiltration and storage in the soil. The public trees of Canton help to reduce runoff by an estimated 17 thousand cubic feet a year with an associated value of \$1.1 thousand. Avoided runoff is estimated based on local weather from the user-designated weather station. In Canton, the total annual precipitation in 2016 was 31.7 inches.



[Image] (left)

Avoided Runoff for Tree Species.

STRUCTURAL AND FUNCTIONAL VALUES

Urban forests have a structural value based on the trees themselves (e.g., the cost of having to replace a tree with a similar tree); they also have functional values (either positive or negative) based on the functions the trees perform.

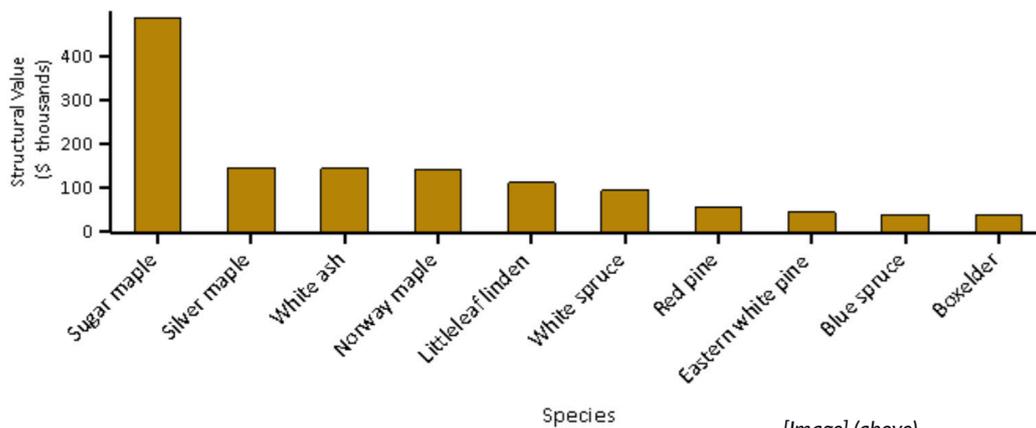
The structural value of an urban forest tends to increase with a rise in the number and size of healthy trees (Nowak et al 2002a). Annual functional values also tend to increase with increased number and size of healthy trees. Through proper management, urban forest values can be increased; however, the values and benefits also can decrease as the amount of healthy tree cover declines.

Urban trees in Canton have the following structural values:

- Structural value: \$1.57 million
- Carbon storage: \$90.6 thousand

Urban trees in Canton have the following annual functional values:

- Carbon sequestration: \$748
- Avoided runoff: \$1.14 thousand
- Pollution removal: \$396



[Image] (above)

Tree Species with Greatest Structural Value.

Structural value is the value of a tree based on the physical resource itself (e.g., the cost of having to replace a tree with a similar tree). Structural values were based on valuation procedures of the Council of Tree and Landscape Appraisers, which uses tree species, diameter, condition, and location information (Nowak et al 2002a; 2002b).

POTENTIAL PEST IMPACTS

Various insects and diseases can infest urban forests, potentially killing trees and reducing the health, structural value and sustainability of the urban forest. As pests tend to have differing tree hosts, the potential damage or risk of each pest will differ among cities. Thirty-six pests were analyzed for their potential impact and compared with pest range maps (Forest Health Technology Enterprise Team 2014) for the conterminous United States to determine their proximity to St. Lawrence County. Twelve of the thirty-six pests analyzed are located within the county (dogwood anthracnose and beech bark disease are found in the county but not discussed below because they do not affect trees in Canton).

Butternut canker (BC) (Ostry et al 1996) is caused by a fungus that infects butternut trees. The disease has since caused significant declines in butternut populations in the United States. Potential loss of trees from BC is 0.1 percent (\$1.33 thousand in structural value).

American elm, one of the most important street trees in the twentieth century, has been devastated by the Dutch elm disease (DED) (Northeastern Area State and Private Forestry 1998). Since first reported in the 1930s, it

has killed over 50 percent of the native elm population in the United States. Although some elm species have shown varying degrees of resistance, Canton could possibly lose 2.8 percent of its trees to this pest (\$16.3 thousand in structural value).

Emerald ash borer (EAB) (Michigan State University 2010) has killed thousands of ash trees in parts of the United States. EAB has the potential to affect 8.8 percent of the population (\$144 thousand in structural value).

The gypsy moth (GM) (Northeastern Area State and Private Forestry 2005) is a defoliator that feeds on many species causing widespread defoliation and tree death if outbreak conditions last several years. This pest threatens 25.8 percent of the population, which represents a potential loss of \$306 thousand in structural value.

Quaking aspen is a principal host for the defoliator, large aspen tortrix (LAT) (Ciesla and Kruse 2009). LAT poses a threat to 3.3 percent of the Canton urban forest, which represents a potential loss of \$41.4 thousand in structural value.

The pine shoot beetle (PSB) (Ciesla 2001) is a wood borer that attacks various pine species, though Scotch pine is the preferred host in North America. PSB has the potential to affect 7.2 percent of the population (\$102 thousand in structural value).

Spruce beetle (SB) (Holsten et al 1999) is a bark beetle that causes significant mortality to spruce species within its range. Potential loss of trees from SB is 7.7 percent (\$135 thousand in structural value).

Spruce budworm (SBW) (Kucera and Orr 1981) is an insect that causes severe damage to balsam fir. SBW poses a threat to 7.7 percent of the Canton urban forest, which represents a potential loss of \$135 thousand in structural value.

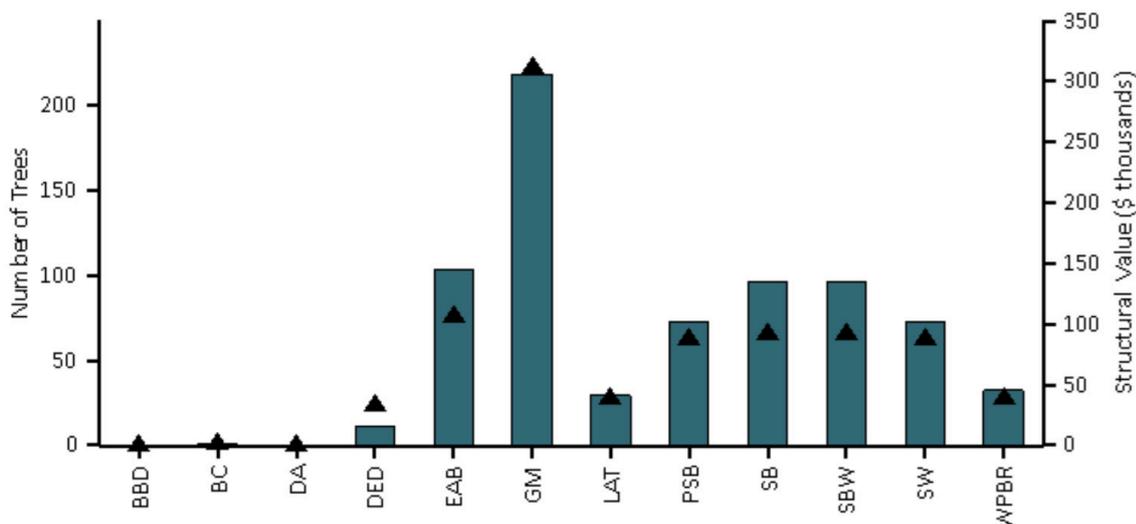
The sirex woodwasp (SW) (Haugen and Hoebeke 2005) is a wood borer that primarily attacks pine species. SW poses a threat to 7.2 percent of the Canton urban forest, which represents a potential loss of \$102 thousand in structural value.

Since its introduction to the United States in 1900, white pine blister rust (Eastern U.S.) (WPBR) (Nicholls and Anderson 1977) has had a detrimental effect on white pines, particularly in the Lake States. WPBR has the potential to affect 3.3 percent of the population (\$45.3 thousand in structural value).

Spotted lantern y (SLF) is an invasive pest from Asia that primarily feeds on tree of heaven (*Ailanthus altissima*) but can also feed on a wide variety of plants such as grapevine, hops, maple, walnut, fruit trees and others. This insect could impact New York's forests as well as the agricultural and tourism industries.

As one of the most damaging pests to eastern hemlock and Carolina hemlock, hemlock woolly adelgid (HWA) (U.S. Forest Service 2005) has played a large role in hemlock mortality in the United States. HWA has the potential to affect the tree population in the future.

Anoplophora glabripennis, referred to as the Asian longhorned beetle (ALB), is one of the more recently introduced non-native invasive species with potential to become a major pest in the United States. In the United States, the USDA Animal and Plant Health Inspection Service (APHIS) has implemented an eradication program whereby all trees with signs of beetle infestation (oviposition pits or exit holes) are removed and destroyed. The eradication program for ALB has greatly impacted the local areas where this beetle has been found because of the removal of thousands of trees, which has cost millions of dollars. The United States has implemented stricter trade regulations to prevent further introductions. If the established populations of ALB are not eradicated, the beetle could threaten the maple sugar industry, fall-foliage tourism, natural ecosystems, recreational areas, and many beloved backyard and street trees.



[Image] (above)

of Trees at Risk for Most Threatening Pests located in the County.

A large, leafy green tree stands in front of a two-story red brick building. The building has several windows with white frames and a yellow and white striped awning over the entrance. A black street lamp is visible on the right side of the image. The sky is clear and blue.

C H A P T E R F O U R

RISK TREE
INVENTORY,
TREE REMOVALS
AND PRUNING



Risk Tree Inventory

Trees may need to be pruned or removed for many reasons. Sometimes trees pose a risk to the general public and pruning or removal mitigates that risk. Oftentimes, trees may need to be pruned for clearance if they are growing close to roadways, sidewalks, utility lines or poles, signage and lighting, or buildings and other built environment. Mature trees may need to be pruned to maintain health and vigor, or to lessen the impacts of various defects the tree may have. Young trees benefit from maintenance pruning as well, with the addition of training or formative pruning which helps them to develop good form as they grow in their establishment period.

METHODOLOGY

All trees from the previously accomplished Inventory that had an overall health rating of less than or equal to 3 were assessed for risk. Risk trees were identified, GPS located, and then assessed for several factors. Factors noted were Location (Lat/Long), street/park location, species, DBH (diameter breast height), Crown Dieback, Canopy/Crown Condition, Trunk Condition, Root and Root Collar Condition, Maintenance Task, Maintenance Recommendation/Priority, and Additional Notes/Comments.

Tree Locations were found in Lat/Long (2.5-meter accuracy), and road or park position in Canton was also noted from the Inventory. Species was verified for each Risk tree, along with DBH in inches. Crown Dieback was recorded on a scale of 1-100. Canopy/Crown Condition was recorded on a scale of 1 to 4 (low, moderate, high, critical). If trees had a canopy defect such as an unbalanced crown, dead twigs/branches, broken stem/hangers, cracks, lightning damage, included bark, weak attachments, cavities/holes/dens, dead bark/cambium, cankers/burls/conks, decay, or overall decline, this was noted. Trunk Condition was recorded on a scale of 1 to 4 (low, moderate, high, critical). If trees had a trunk defect such as dead/missing bark, abnormal bark texture/color, codominant stems, included bark, cracks, sapwood damage/decay, cankers/galls/burls, sap ooze, lightning damage, heartwood decay, conks/mushrooms, cavity/nest/dens, poor taper, or lean, this was noted. Root and Root Collar Condition was recorded on a scale of 1 to 4 (low, moderate, high, critical). If trees had root or root collar defects such as buried collar, stem girdling, dead/decaying roots, conks/mushrooms, ooze, cavities, cracks, cut/damaged roots, root plate lifting, soil weakness, or response growth, this was noted. Maintenance Task was recorded for trees including none, formative pruning, crown clearing, crown raising, crown reduction, remove, treat pest/disease, and crown cleaning. Maintenance Recommendation/Priority was also rated on a scale of 1 to 4 (none, routine, immediate, and critical concern). Removal trees were tagged/marked with blue paint so that they can be easily found. Additional Notes/Comments elaborate on canopy condition, trunk condition, root and root collar condition, and priority level.

RISK TREE MAINTENANCE

Several factors can be discerned when using the Risk Tree Inventory. Maintenance Recommendations/Priority is the most important factor to note for municipal use:

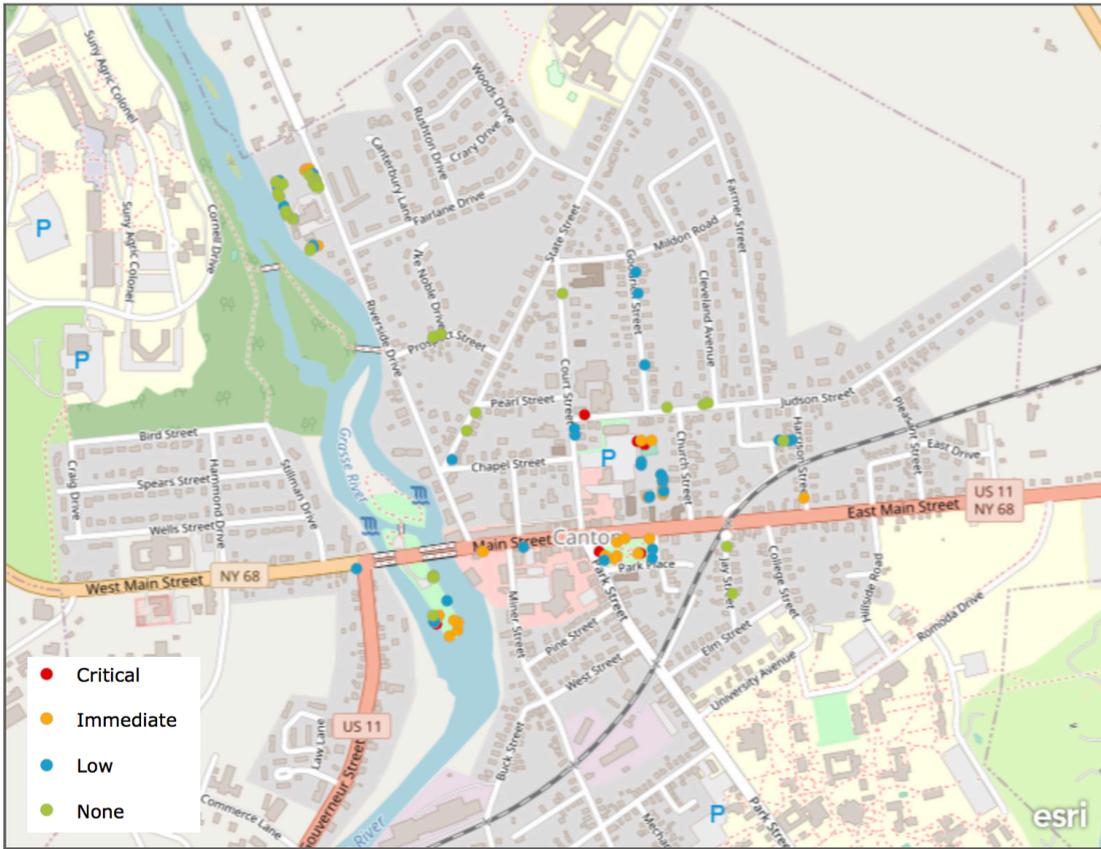
Maintenance Recommendations/Priority

- Trees that are none (low risk) are healthy trees with no need for any maintenance.
- Trees that are routine (moderate risk) are trees that show minor signs of decline/wounds/disease, and should be pruned or monitored in future inventory work.
- Trees that are immediate (high risk) are trees that show moderate to high signs of decline, and are in need of near-term maintenance pruning or removal in order to reduce current risk.
- Trees that are critical concern (public safety) are recommended for immediate maintenance, whether removal or pruning, because they are a public safety concern.

The inventory reveals that there are:

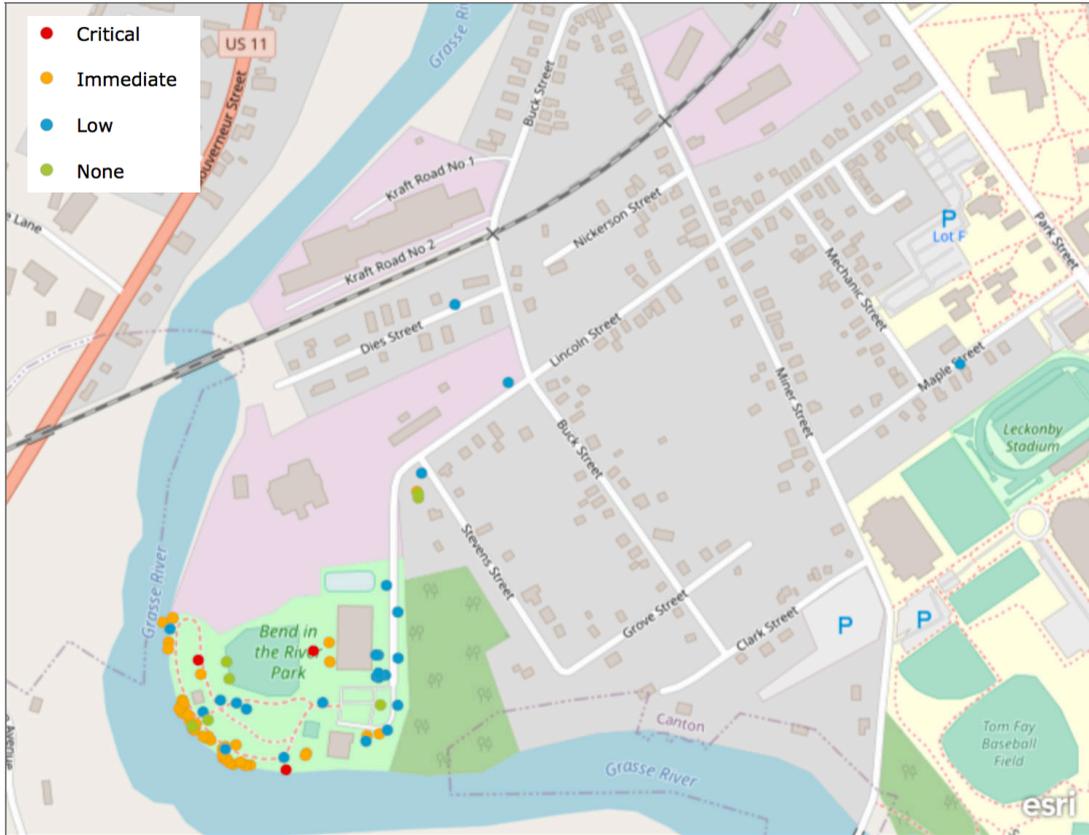
- Critical Concern (Public Safety): 10 removals, 0 prune
- Immediate (High Risk); 63 removals, 8 prune
- Routine (Moderate Risk); 19 removals, 44 prune
- None (Low risk); 45 prune

Comprehensive Risk Tree data is found on an updatable excel file..



0.2mi

[Image] (above)
Risk Tree Map North.



600ft

[Image] (above)
Risk Tree Map South.

Estimated Cost for Maintenance Activity			All		2022		2023		2024		2025		2026	
Maintenance Activity	Diam.	Cost/Tree	# Trees	Total Cost	# Trees	Total Cost								
Critical and Immediate Removals	1-6"	200	0	0	0	0	0	0	0	0	0	0	0	0
	7-12"	750	33	24750	8	6000	16	12000	9	6750	0	0	0	0
	13-18"	1400	22	30800	6	8400	10	14000	6	8400	0	0	0	0
	19-24"	1750	12	21000	4	7000	4	7000	4	7000	0	0	0	0
	25-30"	2100	2	4200	2	4200	0	0	0	0	0	0	0	0
	31-36"	2300	1	2300	1	2300	0	0	0	0	0	0	0	0
	37-42"	2750	1	2750	1	2750	0	0	0	0	0	0	0	0
43"+	3500	2	7000	2	7000	0	0	0	0	0	0	0	0	
Activity Total			73	92800	24	37650	30	33000	19	22150	0	0	0	0
Routine Removals	1-6"	200	0	0	0	0	0	0	0	0	0	0	0	0
	7-12"	600	8	4800	0	0	0	0	0	0	0	0	0	8 4800
	13-18"	1250	7	8750	0	0	0	0	0	0	0	0	0	7 8750
	19-24"	1600	2	3200	0	0	0	0	0	0	0	0	0	2 3200
	25-30"	1900	1	1900	0	0	0	0	0	0	0	0	0	1 1900
	31-36"	2100	0	0	0	0	0	0	0	0	0	0	0	0
	37-42"	2500	1	2500	0	0	0	0	0	0	0	0	0	1 2500
43"+	3000	0	0	0	0	0	0	0	0	0	0	0	0	
Activity Total			19	21150	0	0	0	0	0	0	0	0	19 21150	
Critical and Immediate Pruning	1-6"	200	0	0	0	0	0	0	0	0	0	0	0	0
	7-12"	750	1	750	0	0	1	750	0	0	0	0	0	0
	13-18"	1250	0	0	0	0	0	0	0	0	0	0	0	0
	19-24"	1500	3	4500	1	1500	2	3000	0	0	0	0	0	0
	25-30"	1700	1	1700	1	1700	0	0	0	0	0	0	0	0
	31-36"	1850	0	0	0	0	0	0	0	0	0	0	0	0
	37-42"	2000	1	2000	1	2000	0	0	0	0	0	0	0	0
43"+	2250	2	4500	2	4500	0	0	0	0	0	0	0	0	
Activity Total			8	13450	5	9700	3	3750	0	0	0	0	0	
Routine Pruning	1-6"	200	2	400	0	0	0	0	0	0	2	400	0	0
	7-12"	600	12	7200	0	0	0	0	0	0	12	7200	0	0
	13-18"	900	20	18000	0	0	0	0	0	0	20	18000	0	0
	19-24"	1250	7	8750	0	0	0	0	4	5000	3	3750	0	0
	25-30"	1500	2	3000	0	0	0	0	2	3000	0	0	0	0
	31-36"	1700	0	0	0	0	0	0	0	0	0	0	0	0
	37-42"	1900	1	1900	0	0	0	0	1	1900	0	0	0	0
43"+	2100	0	0	0	0	0	0	0	0	0	0	0	0	
Activity Total			44	39250	0	0	0	0	7	9900	37	29350	0	0
Grand Total			144	166650	29	47350	33	36750	26	32050	37	29350	33	21150
Cost														

[Image] (above)

Risk Tree 5-Year Cost Estimate for Risk Trees of Canton.

RISK TREE MAINTENANCE RECOMMENDATIONS AND PRIORITIZATION

A five-year risk tree management cycle based on the tree risk inventory data was developed to support Canton's vision for preserving its urban forest. The program is designed to reduce risk through prioritization of tree removals and pruning, with critical and immediate removal and pruning activities spread over an initial three-year period to control costs, and routine work for lower risk trees moved out to the last two years of the planning cycle. The pricing of work per tree was noted below with several considerations – accounting for more difficult work associated with hazard tree work in an urbanized environment (concerns with traffic/pedestrian control, preventing damage to the built environment, etc.), wood removal, possible changes to tree removal quantities (cost is provided for an individual quantity rather than a potentially lower per tree price with larger bids), and also to some extent accounting for the potential of inflationary pressure. In other words, pricing below is likely to be higher than actual costs, if an RFP went out for the quantity of work per year as presented today.

While implementing a tree care program as an ongoing process, tree work must always be prioritized to reduce public safety risks. LBS Ecological recommends completing the work identified during the inventory based on the assigned Maintenance Recommendation (Priority Level); however, routinely monitoring the tree population is essential so that other Critical or High-Risk trees can be identified and systematically addressed. While routine pruning cycles is important, priority work (especially for Critical or High-Risk trees) must take precedence to ensure that risk is expediently managed.

RISK TREE PRUNING AND REMOVAL

Pruning is the deliberate removal of tree branches and limbs to achieve a specific objective in the alteration of a tree's health and form. Pruning is the most significant practice due to costs and impact on the tree, but can extend the useful life of a tree in your yard for decades.

Trees may need to be pruned to:

- Remove dead or hazardous branches
- Maintain vehicular, pedestrian, and sight clearance
- Improve the tree structure, e.g. balancing crown weight or corrective pruning to remove future hazards
- Increase light or air penetration
- Improve tree aesthetics

Although we are providing these basic instructions on tree pruning, we recommend contacting an ISA Certified Arborist for anything more than basic tree care. Pruning trees incorrectly can not only damage your trees but also result in injuries or death for untrained individuals. An arborist is a specialist in the care of individual trees. ISA Certified Arborists are knowledgeable about the needs of trees and are trained and equipped to provide proper care.

When to Contact an Arborist:

- The tree cannot be pruned from the ground.
- The tree has been identified as hazardous.
- The tree is near electrical or other utility lines.
- The branch(es) that need to be pruned are large.

Safety Tips:

- Keep pruning equipment sharp, clean, and in good operating condition.
- Make clean cuts.
- Be careful with all tools.
- When pruning trees that show evidence of disease, disinfect pruning equipment between trees. During extreme infestations, disinfect equipment between cuts.
- Always wear personal protective safety equipment, including safety glasses, while pruning.
- Have staff trained and up to date with safety protocols.

When to Prune

The best time to prune living branches is late in the dormant season or very early in spring before leaves form. Growth is maximized and wounds close faster. Flowering trees should be pruned after blooming. Routine maintenance pruning of dead or dying branches can be done at any time. However, there may be specific concerns associated with individual tree species that

may be an exception to these general rules. For new trees, inspect for pruning needs annually. Prune trees regularly throughout their life to keep them healthy, safe, and aesthetically pleasing. Do not defer pruning until limbs get large. Large limbs equal large wounds, which are more difficult for a tree to seal and leave the tree open to disease, insects, and rot. Do not prune trees on a crisis-only basis. Do not attempt to reduce tree size as a substitute for proper tree selection and placement. Known as topping, this is incredibly damaging to trees, and can cause hazardous conditions months to years after it has been done.

What to Prune – Young Tree Pruning and Mature Tree Pruning

Young and mature trees have different pruning needs. To reach their full potential in maturity, young trees should be trained. Training is careful, thoughtful pruning that creates strong trunk and branch structure and a visually pleasing form. This influences future performance, landscape potential, and safety. Correct pruning of young trees will improve structural stability, increase tree longevity, and decrease maintenance costs. Trained trees will have fewer branches but better spacing. With fewer structural defects when mature, trained trees reduce the need for costly corrective measures later. The process of training young trees directs growth to fulfill the landscape function, reduces structural defects that may lead to tree failure, and ultimately decreases hazard potential and liability risks.

Young tree pruning tips:

- On young trees, prune only dead, broken, crossed, or rubbing branches.
- A young tree can survive the removal of up to one-third of its foliage in a growing season.

You may wish to prevent future hazards in mature trees by removing branches that may become problematic in the future. Branches with splits and cracks at a joint can be weak. Multiple branches attached to one spot on the trunk can also be trouble spots. U-shaped joints are stronger than narrow V-shaped unions, which can harbor disease-causing debris. Broken branches, whether partially attached or completely separated from the tree, are called hangers or widow makers. They are extremely hazardous and likely to fall, and should be removed promptly. The same is true for deadwood.

Mature trees may also need to be pruned in order to provide clearance for various situations, a type of pruning called clearance pruning. Recommendations for clearance distances are as follows:

- Streets/roadways – 14 feet.
- Sidewalks – 10 feet.
- Buildings & structures – 6 feet.
- Street signs & lights – remove sufficient branches to allow adequate sight lines and lighting patterns.

Mature tree pruning tips:

- Do not remove more than one-quarter of the foliage of a mature tree in any one growing season.
- Do not make indiscriminate cuts on large branches high in the canopy in an attempt to lower the height of the tree. This is called topping and is one of the worst things you can do to your trees.

How to Prune

Proper pruning takes skill and practice. To minimize the amount of exposed wood, make small cuts and conserve as many living branches as possible. Excess end weight should be removed with preliminary cuts (three-cut method) to avoid tearing bark. Always prune trees back to the parent branch or a lateral branch that is at least one-third the diameter of the branch being pruned. Avoid cutting the trunk or branches that you are not actively pruning. Do not remove more than one-quarter of the foliage from a branch unless you are removing the entire branch.

Every branch has a swell at the base, where it meets the trunk of the tree. This is known as the branch collar. All pruning cuts should be made at the boundary between the branch collar and the actual branch, which has low taper by comparison to the collar. Basic pruning can be accomplished using the 3-Cut method:

1. Make a shallow cut on the underside of the branch, away from the collar. This will prevent bark tears if the branch drops suddenly.
2. Just beyond the partial cut toward the tip of the branch, cut through the branch from above to remove the bulk of the weight.
3. Finish the prune by cutting through the branch just outside the branch collar.

The two most common pruning errors are known as "flush cuts" and "stub cuts." Both of these errors happen during Cut 3. A flush cut is a cut that injures or removes the branch collar. A stub cut leaves too much branch past the collar. Stub and flush cuts can open your tree to pests, disease, and decay.

Remember, tree wounds should be left uncovered so the tree's immune system can take care of them. The exception to the rule is when oaks are being trimmed over the summer – these should be sprayed with paint spray (a natural color is best) to mask the smell of oak cuts, which helps to reduce the spread of flatheaded borers (or other insect vectors), which can carry the oak wilt fungal spores.

Tree Removal

Tree removal is a natural and expected part of the tree lifecycle, but it can be dangerous and expensive when done on an emergency basis. An ISA Certified Arborist has created this plan for the removal of your trees over time based on known vulnerabilities and expected lifespan.

To avoid unnecessary removals, prune your trees carefully. Inspect your trees for damage annually and after storms. Trees that are a poor selection for the location, that lack adequate growing space, or that conflict with infrastructure such as buildings, roadways, or utility services could require removal. To avoid these costly problems, follow our selection and planting recommendations.

Trees that are badly damaged or in irreversible decline should be removed and replaced in order to avoid hazards. In the case of diseased trees, they should be removed promptly to avoid infecting adjacent trees. An otherwise healthy tree may be removed in order to prepare a site for development, but this should be in a strict minimum of cases. Removing trees to make construction more convenient wastes thousands of dollars in ecosystem benefits and services. In addition, tree protection during construction is a very important aspect of retaining existing large trees, while minimizing additional intervention and/or planting costs.

If a tree has heritage or historic value but has a high risk of becoming a hazard, consider restricting public access or moving valuable structures instead of removing it. There are other options, such as disease treatments, cabling, bracing, structural pruning, among others that may allow the tree to be retained for decades prior to removal. Have an ISA Certified Arborist evaluate tree health and risk of failure before removing heritage trees.

Positively identify ownership of the tree before authorizing a removal. If the tree is on private property, follow the above-outlined procedure to inform the landowner of potential dangers followed by subsequent civil action to remove the tree and recover costs.

Do not attempt to remove a tree alone or direct a subordinate to remove a tree alone, due to safety concerns associated with not being able to perform first aid. Never attempt to remove a tree if you are unqualified to do so safely. Consult with or hire experienced professionals (ISA Arborist) to remove trees. Request the local utility company to remove trees located near or beneath utility lines; do not attempt to remove these trees yourself. Accidental contact with utility lines can cause severe injury or death.

Whatever the reason for removal, the site should be evaluated to determine whether another tree can be planted in the same location or nearby to maintain tree canopy cover in the area. Replace trees wherever and whenever possible. Select large canopy trees if space permits, and follow proper planting procedure.

ASH TREE MANAGEMENT - EMERALD ASH BORER

The emerald ash borer, first discovered in New York in 2009, is an invasive insect that infects and kills all species of ash trees present in the United States. Its impact is severe and has been experienced in about half of the state. Until recently the North Country region has been spared the damages caused by this insect, but its presence in St. Lawrence County was documented in August 2017, and now trees are beginning to decline and die. Because infested trees decline and become hazardous quickly, due to quick internal decay at the base of the trunk with subsequent trunk frequently snapping during removals, communities have been encouraged to remove trees from urban areas in advance of the infestation. In response, the Village had begun a planned ash tree removal program. As part of this program, in September 2018, fifteen ash trees were felled and removed from Bend in the River Park as part of a restoration project involving new tree plantings. The Tree Committee has continued working with the Village Superintendent and DPW on the Village response to the emerald ash borer problem. This plan offers recommendations on how to deal with the remaining declining ash trees.

A multi-year Ash Tree Management Plan to remove approximately 90 existing ash trees (*Fraxinus* species) on Village-owned property in response of an Emerald Ash Borer (EAB) invasion has been developed as part of this overall CFMP. The ash tree plan includes an assessment of the efficacy of treating and conserving selected ash trees which have been identified. The Ash Tree Management Plan is based on information in the Tree Inventory database, visual inspection of individual trees, information from partner organizations such as the St. Lawrence County EAB Task Force, and communications with the CFMP Steering Committee.

Ash Removal (and the treatment of two ash)

All ash on the inventory were assessed and it was found that few were in good shape, many were in decline, and many have died, were removed or fallen already. All street tree ash were found to be dead, in decline, or were smaller DBH trees that are not worth the effort to save. The majority of the Village's ash are located on public park grounds such as the Bend in the River Park, and are not planted ornamentally but rather are wild-grown trees on the perimeter of properties. Only one ash in Bend in the River Park was substantial in size, form, or quality to warrant treatment. This will be the only ash to be treated on 'public land' and will be preserved for future educational purposes.

The only other tree that was deemed worthy of keeping was an ash on the Village Green. This private/public park is owned by the First Presbyterian Church, and a representative was notified of the ash tree in question. After consulting with foresters and arborists in addition to LBS Ecological, the decision was made to treat the ash and conserve an example of this majestic tree for future generations.

Note on Village Green:

The Village Green in the heart of downtown Canton is owned by the First Presbyterian Church of Canton but is maintained by the Village and serves the community in many ways throughout the year. In 2018 the Tree Committee helped the Village partner with the Church to apply for a tree maintenance grant through NYSDEC. The project was since funded, and maintenance has occurred on risk trees in the Green.

All ash trees noted on the previous inventory were added to the Risk Tree Inventory and management recommendations for these trees is included/nested in that section above.



[Image] (above)

The Ash tree on the Village Green that is treated to withstand the emerald ash borer invasion.



C H A P T E R F I V E

PLANTING AND REFORESTATION

SELECTED
BORN NEW YORK
SEPT. 12, 1794
DIED DEC. 17, 1830
CORNELIA ANN KIP
BORN JAN. 17, 1824
DIED MAR. 20, 1857
IN MEMORY OF
FRANK E. KIP
1175 N. W. CAV. SCOTT'S 900
BORN OCT. 10, 1895
SPRINGFIELD, TENN.



Review of Current Management Practices

A comprehensive review and evaluation of the Village's current tree management practices was conducted. Aspects of management included in the evaluation were routine trimming and pruning, summer watering, mowing and mulching around trees, protection from beaver damage in appropriate locations, brush pick-up and chipping, new tree plantings, removal of hazardous trees, and utilization of the tree inventory. Recommendations for improving management practices follows:

routine trimming and pruning – we noticed little efforts in terms of routine pruning, with most trees being pruned only to correct obvious hazardous defect or other failures. A young tree formative pruning program and mature tree pruning program that utilize the inventory and risk inventory should be scheduled and budgeted.

summer watering – there is a lack of effort put into watering new trees, such that several new trees were noted to be either in decline, stunted in growth, or dead. Tree plantings require sufficient forethought to plan for the establishment/maintenance of these trees. Watering should become a regularly scheduled and budgeted task.

mowing and mulching around trees – it is common to see trees affected by mowers and string trimmers. This is common after mulch has biodegraded and isn't replaced on a schedule. This maintenance error is typically seen in park areas. Injury from mowing can be deadly on smaller trees that are becoming established, and larger trees can decline or have their health affected when disease-causing organisms take advantage of open and fresh wounds, which may cause a whole tree failure at the root collar.



[Image] (above)

String trimmer damage to the base of a tree.

A 'donut'-mulching strategy should be employed, where the mulch is placed in a circle around the tree, with the actual root collar primarily exposed, rather than the 'volcano'-mulching strategy, which buries the root collar in multiple inches (if not feet) of mulch, thereby introducing conditions priming entry of disease-carrying vectors into the root collar.

protection from beaver damage in appropriate locations – in waterfront parks and areas near the Grasse River, beaver damage can be destructive to new and existing trees. Although several trees have been protected, there needs to be a comprehensive plan in place to add protection where needed, as well as maintain fencing over the years (several were found to be broken, split, or girdling the trees that they were aimed to protect).

brush pick-up and chipping – after yearly cleanups, storms, and maintenance of community trees, there is a need to dispose of debris. This process has been working effectively for the Village and no brush or debris was noted to be accumulating on streets or in parks.

new tree plantings – tree plantings that the Village has been undertaking are impressive. Most plantings have been installed well, with proper trees for the North Country and specific planting locations. As above, summer watering and establishment of plants in the long term should be addressed so that plantings do not fail.

removal of hazardous trees – several hazard trees were noted in the Village that should have been removed previously. Several were dead and would create safer conditions for the community and for the actual tree removal operations (as well as being less expensive to undertake) if removed earlier.

utilization of the tree inventory – Although there is an existing inventory, it has been difficult for the Village to adequately use it for planning purposes. It has been useful to aid in finding ash trees to remove before they become more riskier as they decline and die from emerald ash borer or other vectors (e.g., ash yellows), but there has been little proactive planning used to limit overpopulated species/genera or species prone to pests from being planted



[Image] (above)

Fencing for beavers that isn't working as intended.

Tree Planting and Reforestation Goals

Urban forests provide a diverse assortment of benefits ranging from environmental and ecological to social and economic. While maintaining existing trees for long term sustainability can help protect the sources of these benefits, re-planting or establishing new trees is an important factor as well.

Examination of the tree inventory data identified existing urban forest resources within the Village of Canton. The inventory data also has revealed opportunities for expansion of the urban forest environment. This information coupled with information on areas lacking trees gleaned from the Tree Committee 5-Year Plan paints a good picture of where future tree plantings can be planned.

Goals for planting in the Village are:

1. Plan to grow the urban forest. Plant 20 trees each year in order to increase urban tree canopy
2. Prioritize planting trees in areas of the Village that have low canopy coverage and small planting numbers.
3. Add to the diversity of the urban forest tree composition.
4. Avoid the planting of undesirable trees or invasive trees
5. Plant appropriate trees in appropriate places (use proper species and zone choices, prioritize native species, avoid infrastructure/wire conflicts)



[Image] (above)

A smaller tree would be a more appropriate choice for under wires (especially electric).

Goal 1: Plan to Grow the Urban Forest

Objectives: Plant 20 trees yearly throughout the Village. There has been a concerted effort to plant trees in the Village, however there have been no actual planting goals set. Adding a consistent number of trees to the urban forest each year can keep the tree canopy growing in size, thus increasing benefits from the urban forest. This addition of trees will also be useful in offsetting any tree losses due to inclement weather, diseases and pests, natural mortality, etc.

Costs of Tree Planting: Trees vary in price depending on the size of the tree and type of nursery stock. A cheaper bare root tree for example may cost \$50-\$250 depending on the species or cultivar. Tree staking and protection is an additional cost of approximately \$5-\$25 depending on materials used. If the Village plants the tree there is no additional cost associated, but if a contractor plants the tree an additional labor and delivery cost will be incurred, and costs may be approximately \$200-\$500 per tree installed. Any soil amendments or alterations of the planting spots also could add to total costs per tree.

When you are ready to buy your tree(s), you'll find they can be purchased in one of three ways:

- bare root,
- container grown, or
- balled and burlapped (B&B).

Bare root trees are usually only available through catalogs and are shipped during short periods in the spring and fall. The majority of the trees and shrubs sold by DEC's Saratoga Tree Nursery are bare root. The benefits of bare root trees include a lower cost per tree, lighter handling weight because there is no soil around the roots, and if dug properly, bare root trees have a greater portion of roots kept intact than B&B trees.

Container grown trees may have roots that encircle the root ball in the pot. Spiral roots can harm the tree and even kill it if they are left to develop, so it is important to unwrap the roots before planting. The benefits of container grown trees are that they usually weigh less than B&B trees, there is less disturbance to the roots when planting containerized trees, and they are available at most nurseries.

Balled and burlapped (B&B) trees are much heavier than bare root trees and lose a substantial amount of roots when dug at the nursery. But a large amount of soil in the root ball does benefit the tree by protecting its roots from injury and helps keep them moist. Roots should be kept covered, out of direct sunlight and moist until the tree can be planted.

More information on tree planting and the benefits and constraints of bare root, container grown, and balled and burlapped trees is available from the DEC at <https://www.dec.ny.gov/lands/5303.html> and additional information from the Cornell Urban Horticultural Institute is available at <http://www.hort.cornell.edu/uhi/outreach/pdfs/bareroot.pdf>

It is recommended to work with your local DEC forester (alternatively, a contracted arborist or internal appropriately trained staff) for suggestions on locations, species and to observe the health of trees purchased prior to planting. Remember also to keep the tree inventory updated as new trees are planted.

Goal 2: Plant trees in areas of the Village that have low canopy coverage and low planting numbers.

Objectives: When planting new trees, areas that are lacking in tree numbers and canopy coverage should be prioritized for planting. Using the current inventory, gaps in tree coverage were noted in the following areas (areas with a ROW/ sidewalk, lacking trees and tree cover):



[Image] (above)

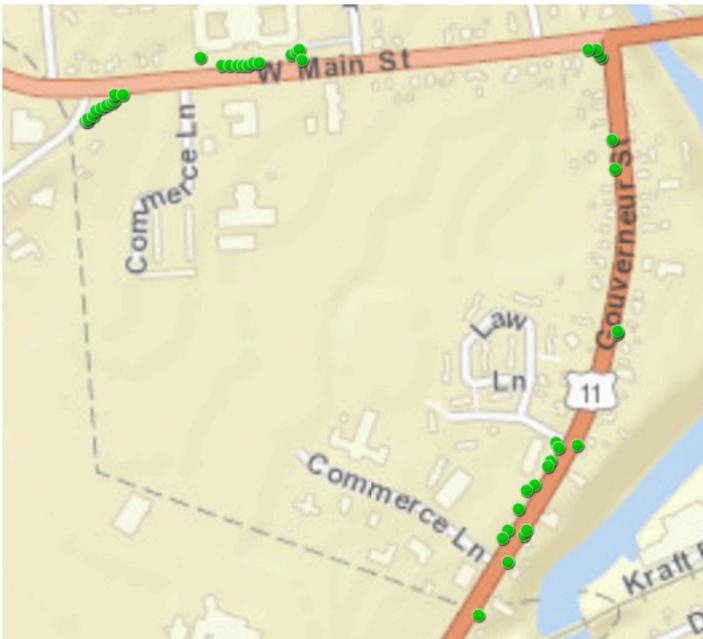
This street has no trees planted on the right of way (ROW) and there is a lot of opportunity for planting.

West of Grasse River

Route 11 Southwest Gateway – Route 11 or Gouverneur Street is partially planted with trees as it enters the Village, but there are few trees on the northern portion of the road. Because this area is one of the Village's 'gateways' it should be prioritized for planting.

West Main St. (Rt. 68) – This secondary 'gateway' from the west has few trees planted. New plantings here should be accomplished toward Gouverneur Street, where there are sidewalks.

East of Grasse River, South of Main St.



[Image] (above)

Current plantings west of the Grasse River.

Miner St. - To the north Miner Street does not have many good planting spots, but as the street makes its way south there are sidewalks on both sides with an ample planting strip. This road has very little in the way of street trees.

Pine St. - This street is located near the urban core of the Village, and has sidewalks on both sides. It has plenty of places to plant trees.

West St. - this street has a sidewalk and planting strip on the north side of the street that is lacking trees and has plenty of opportunities to plant. The south side of the street is not a good option to plant due to a lack of sidewalks.

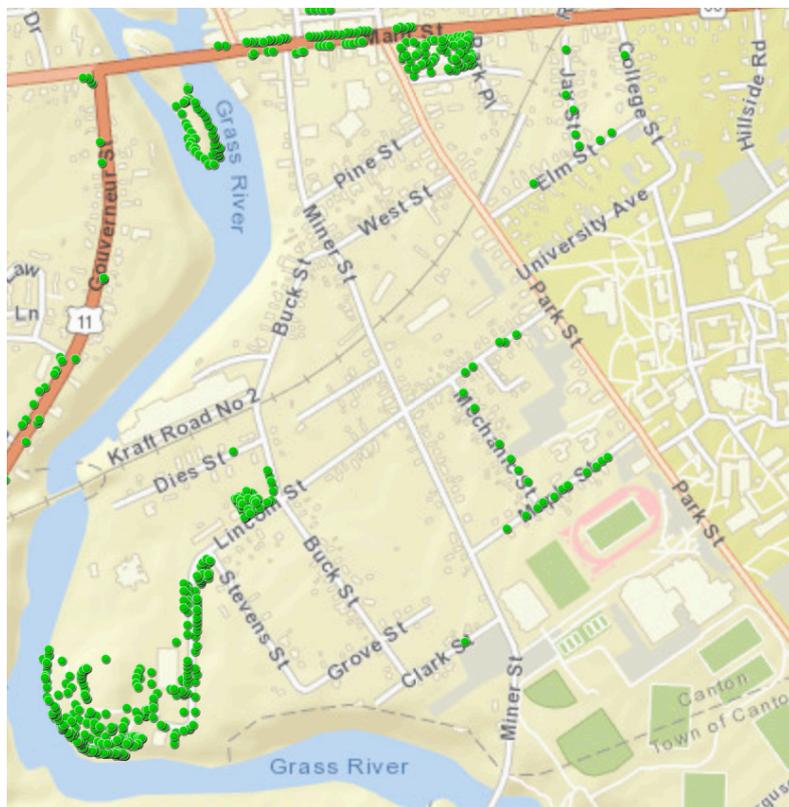
Jay St. - Jay Street is very close to the urban core. It has a cul-de-sac rather than a connection to main street (the railroad blocks it), so it gets more foot traffic than car traffic. There are some tree plantings on Jay Street but there is plenty of room to add to these.

College St. - this street connects the St. Lawrence University area and Main Street, and has sidewalks on both sides. There is little in terms of plantings on this street, and because it is such a main corridor through the Village it should be planted more heavily.

Elm St. - Elm Street has sidewalk on the north side of the street and a portion of sidewalk on its southern side. There are a few street trees, but plenty of room for more plantings.

Buck St. - this street has sidewalks to the north (between Miner St. and the railroad tracks, and south of Lincoln St. There are plenty of spots to plant trees, prioritizing areas to the north that are closer to the urban core of the Village.

Lincoln St. - This street is a major east-west connector in the south section of the Village. It has sidewalks on both sides for most of its length, and there are many planting spots available. Because the western portion of the street (from Buck Street headed west) has been planted during recent years, plantings should be accomplished on the eastern portion of the street in the future (between Buck St. and Park St.)



[Image] (above)

Current Plantings East of Grasse River and South of Main St.

East of Grasse River, North of Main St.

Route 11 Eastern Gateway (E. Main St.) - This main 'gateway' from points east of Canton has very little in terms of plantings. Because it is a major gateway it should be planted to create a more welcoming environment. Plantings may accomplish traffic calming as well as enhancing aesthetics in this area of 'big box' stores and plazas.

Farmer St. - This street connects Judson Street to State Street. It has a sidewalk on its eastern side, creating a sufficient planting strip for its entire length. There are just a few street trees on this street, and they are focused to the extreme south and north. There are many opportunities to plant trees in between these areas.

Goodrich St. - This street has a good number of street trees, so isn't the highest priority to plant, but there still remains many potential planting spots. The entire west side of the road is lacking trees, and to the north (above Powers/Mildon Rd.) there are no trees as well. Both sides of Goodrich Street have sidewalks, and an ample planting strip.

Pearl St. - Located a couple blocks north of Main Street, this short road has no trees (there is a small park on the street with trees). Because it has sidewalks with a decent planting strip this street is a good candidate for plantings.

Hodskin St. - This short street cuts between Main St. and Chapel St. Toward Main Street it has no tree pits or strip, but toward Chapel St. there is a great planting strip. Planting this street would add more trees in the Village core where they are needed most.

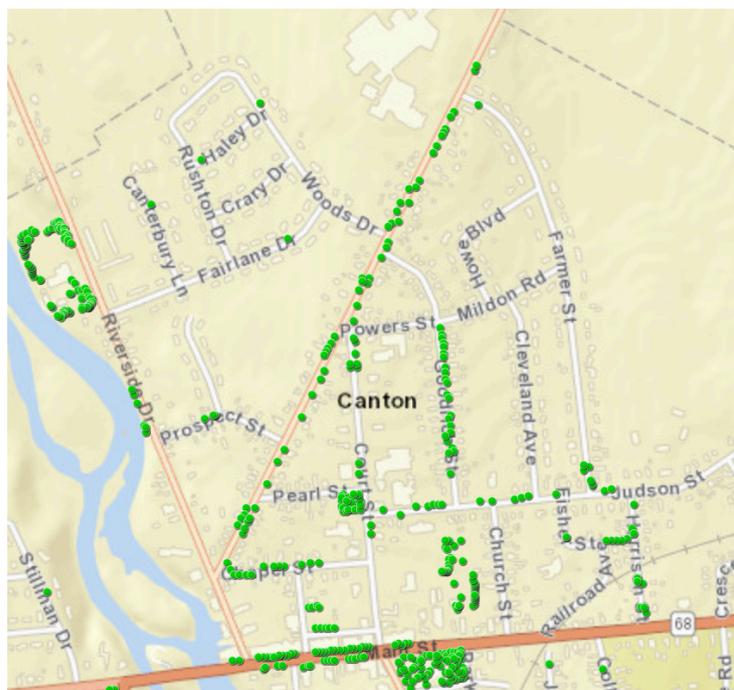
Church St. - This street is a short street that cuts from Main Street to Judson St. It has sidewalks and planting strips on both sides of the road, and is a great spot to add trees close to the Village core.

Crescent St. - this short street also is situated in the core of the Village. Crescent Street has a residential character that would benefit from more tree canopy.

Pleasant St. - this street connects Judson St. and Main St. It has sidewalks and planting strips, but completely lacks any tree plantings. This street, because of its residential character and proximity to the urban core of the Village, should be prioritized for planting.

Judson St (especially to the east)
- Judson Street has more trees than many others in the Village, but still has plenty of room for more. There is more of a need for plantings on the eastern portion of the street as it heads out of the Village.

Riverside Drive - Heading north along the Grasse River, Riverside Drive has a great planting strip along its eastern side. This street is a main connector to points north, and many students from SUNY Canton walk along Riverside as they come and go to the Village core from campus. Riverside Drive (north of Chapel St.) should be prioritized for plantings.



[Image] (above)
Current Plantings East of Grasse River and North of Main St.



[Image] (above)

American Elm growing in the Village. This is one of the last large elms that has yet to succumb to Dutch elm disease.

Goal 3: Add to the diversity of the urban forest tree composition.

Objectives: Plant a number of different genera and species of trees, so that the urban forest remains resilient to pests and pathogens, as they spread or become newly established in and throughout the state. Diversity of the urban forest is critical to the health of the urban forest, and with continuously expanding pest pressure, this goal is becoming more important. Planting various types of trees with varying size at maturity (i.e., species types, deciduous, evergreen, small or large trees) also diversifies the urban forest structure, enhancing the quality of both habitat value and aesthetics. Tree planting recommendations that promote this objective are below:

Deciduous Shade Trees

Deciduous trees selected to provide shade and aesthetics to a landscape are widely available from a variety of sources. These species include individuals which are suitable across a broad spectrum of soil types and soil moisture availability. However, as most are considered canopy species, they generally require partial to full sun and grow to be up to 100 feet in height with a crown up to 60 feet in width. While not exhaustive, the planting list found in the Appendix provides recommendations of shade trees suitable for plantings and replacement. Ash species (*Fraxinus* spp.), while excellent native shade trees, are excluded due to concerns regarding the spread of the emerald ash borer. Additionally, when replacing deciduous shade trees, a minimum caliper size of 1.5-2 inches is recommended. LBS Ecological recommends installation of trees native to NY due to suitability for seasonal changes and soil conditions. Non-native species may require additional maintenance to ensure success, which would incur additional costs to the Village, but may be added in small numbers to add diversity, as long as they have not shown potential for being invasive.

Evergreens and Conifers

Year-round retention of dense foliage and a wide base as compared to deciduous trees make evergreens a frequent choice for screening. Although less common than deciduous trees in the inventory, evergreens represented a larger percent of the total population located in landscaped and park areas. In general (although there are plenty of exceptions), evergreens tend to grow well in average to dry conditions. For this reason, they are commonly planted in raised mounds for landscaping purposes, and therefore may become stressed during extended periods of low precipitation. When possible, native species are preferred for plantings and replacements, because they can be more adaptable to site conditions. For replacement evergreens, a minimum tree height of 5 feet is recommended, and trees usually are sourced as Balled and Burlapped (B&B).

Ornamental Deciduous Trees and Shrubs

For the purposes of this inventory, ornamental deciduous trees and shrubs consist of either a cultivar species developed specifically for ornamental purposes or an understory or shrub-form species which occur as native individuals but are primarily used as ornamental species. Examples of these include various cultivars of crabapple (*Malus* spp.) and hawthorn (*Crataegus* spp.) as well as redbud (*Cercis canadensis*). As with other deciduous and evergreens, native species are preferred for plantings and replacements. The appendix offers a list of commonly available species recommended for ornamental plantings.

A comprehensive tree planting list can be found on pages 64-65 at the end of this section.

Goal 4: Avoid the planting of undesirable trees or invasive trees

Objectives: DO NOT plant trees that have proven to be undesirable in the urban forest. Certain trees are considered invasive, and others are not appropriate and do poorly in urbanized environments. Other trees may have qualities and traits that are not preferred in the urban forest as well (or in certain places in the urban forest) such as messy fruits, drippy sap, or strange odors.

Trees to avoid planting

- invasive
- well-represented or overrepresented in the existing inventory (10-20-30 rule is a guideline to reduce the risk of catastrophic tree loss due to pests. The rule suggests an urban tree population should include no more than 10% of any one species, 20% of any one genus, or 30% of any family. Specifically in Canton, the maple genus (*Acer*) is over-planted and should be planted only minimally in the future).
- poor survivorship in urban environment
- weak wooded trees or trees that are prone to breaking apart
- trees that drop a lot of debris (large or smelly fruit, seed, sap)

A list of prohibited and regulated plants from the NYSDEC can be found at: https://www.dec.ny.gov/docs/lands_forests_pdf/isprohibitedplants2.pdf



[Image] (above)

A large willow tree that was toppled in a wind storm. This tree was growing in a park setting so there was minimal damage, but outdoor seating was affected. Most willow species break apart easily as well.

Goal 5: Plant appropriate trees in appropriate places

Objectives: Certain qualities of certain trees make them more or less appropriate for different planting places. A tree that is great in a park setting may not be a good choice for a street tree planting, and vice versa. Certain trees may never be appropriate because they are not winter hardy, or because they cannot survive certain urban conditions. Tree qualities to consider are tree size and stature, growth habit, fruit/seed production, and hardiness zone. The quality of planting places is also important for tree health, and certain spots may be more difficult to grow trees. Proven varieties should be chosen for difficult planting places, or those places should be avoided completely.

The type of nursery stock which is chosen should be considered as well. Balled and burlapped (B&B) stock or bare root stock are available, and each is preferred in different circumstances, and for different tree species.

The DEC's How to Plant a Tree resources can be found at <https://www.dec.ny.gov/lands/5303.html>

Also, it is critical to avoid utilities when planting, to keep safe and to not disturb the utility. Dig Safely NY should be contacted any time trees are being planted. Dig Safely New York's location request services are freely accessed by dialing 811 or 1-800-962-7962 to reach the call center. Their Damage Prevention (DPRs) are available 24 hours a day, 7 days a week, 365 days a year, to receive calls regarding planned excavation projects. You can also submit a location request online at www.digsafelynewyork.com.

Recommendations for Street Tree Plantings and Park Tree Plantings are noted below:

Street Tree Planting Guidelines

Urban tree planting efforts are constrained by the relatively limited space for tree planting in denser urbanized areas, and by factors such as air pollution, soil compaction, wide pH ranges, heat, and general abuse caused by the urban environment. This can make it difficult to establish new trees and maintain existing ones, especially street trees. The complexity required to manage this wide array of challenges in an era of budget constraints makes it ever more important to plant the right tree in the right place to maximize the benefits provided by each tree and to build a more resilient urban forest overall. Below are recommendations for street tree planting:

Overall setback requirements for street tree planting

- Underground lines – 5'
- Driveways – 10'
- Utility Poles – 15'
- Wires – 10-15' either laterally or in height (choose low-growing species)
- Street Lights – 20'
- Other Tree – 20' (smaller or larger per tree sizes)
- Intersections – 30'

Factors affecting street tree species selection

- Space available in planting pit
- Available space (horizontal and vertical)
- Performance in compacted soil
- Low hanging branches
- Expected life span
- Species with weak wood
- Fruit, nut, or seed production
- Susceptibility to insects or disease

Park and Landscape Tree Planting Guidelines

Parks within the Village of Canton provide valuable active and passive recreation opportunities for all residents of the community. Trees within active use areas of parks are generally planted and maintained at a lower density than forested areas. Areas of parks with less open-space needs are suitable for higher density tree plantings. These consist of areas which are more peripheral, naturalized areas, and areas not currently designated for another use which would conflict with tree plantings such as playgrounds or athletic fields. Many tree species that would not be suitable for street tree plantings are good candidates to plant in parks, and adding these trees to the urban forest in parks can promote diversity. Examples include evergreens that would otherwise block views along streets (or do poorly in a tree pit/utility strip due to wintertime salt deposition), fruit and nut trees that would otherwise be too messy, and weak wooded species.

Detailed Planting Plans for 2 Priority Areas

Taking into consideration the tree planting goals and objectives above, we have created detailed planting plans for two priority planting areas: Bend in the River Park, and the Route 11 Eastern Gateway. These areas were noted as well by the Tree Committee as high priority areas in previous planning processes.

Detailed tree planting plans are found in the appendix so that they are both included in this plan but are also useable as a stand-alone document. The planting plans for both areas are to scale and compatible with the Village GIS program. In addition to showing the recommended locations of new trees and shrubs, the planting plans include plant lists naming the recommended plant materials using both common and botanical names and showing recommended sizes. All recommended plant materials are appropriate for the region (USDA Hardiness Zone 4b), characteristics of the planting sites, and geared towards a diversity of tree species to increase the resilience of the community's trees from climate change, pests and diseases. Tree planting specifications are also included in the planting plans, so that trees are planted correctly and establish successfully.



[Image] (above)

Tree plantings in Bend in the River Park.



[Images] (above)
Potential planting spots on the Route 11 Eastern Gateway.

Canton Tree Planting List

Appropriate Tree List for plantings in the Village of Canton (Zone 4)

**Native tree sections are in italics*

Small Trees (<30 feet)

Tartarian Maple (*Acer tataricum*)

Globe and Bessonia Black Locust (*Robinia pseudoacacia* var. 'Umbraculifera' or 'Bessonia')

Thornless Cockspur Hawthorn (*Crataegus crus-galli* 'inermis')

Washington Hawthorn (*Crataegus phaenopyrum*)

Amur Maackia (*Maackia amurensis*)

Apple/Crabapple (*Malus* sp., several species and cultivars)

Korean Sun Pear (*Pyrus fauriei* Korean Sun™)

Ussurian Pear (*Pyrus ussuriensis*, Prairie Jem or other)

Oakleaf Mountain Ash (*Sorbus x hybrida*)

Pekin Tree Lilac (*Syringa reticulata* subsp. *pekinensis*)

Littleleaf Linden (*Tilia cordata*, certain cultivars)

Korean Mountain Ash (*Sorbus alnifolia*)

Sargent Cherry (*Prunus sargentii*, certain cultivars)

Merrill Loebner Magnolia (*Magnolia x loebneri* 'Merrill')

Royal Star Magnolia (*Magnolia stellata*)

Leonard Messel Magnolia (*Magnolia x loebneri* 'Leonard Messel')

Elizabeth Magnolia (*M. acuminata x M. denudata* 'Elizabeth')

Saucer Magnolia (*Magnolia x soulangeana* (*Magnolia denudata x Magnolia liliiflora*))

Little Girl Magnolias (*Magnolia stellata x Magnolia liliiflora*, 'Jane' and 'Betty')

Rocky Mountain Glow Maple (*Acer grandidentatum* var. 'Schmidt')

*Thornless Honeylocust (*Gleditsia triacanthos* var. 'Imperial')*

*Eastern Redbud (*Cercis canadensis*, local sourced)*

*Serviceberry (*Amelanchier canadensis*)*

*Musclewood (*Carpinus caroliniana*)*

*Hophornbeam (*Ostrya virginiana*)*

*American Mountain Ash (*Sorbus americana*)*

*Carolina Silverbell (*Halesia carolina*)*

*Pagoda Dogwood (*Cornus alternifolia*)*

*Witch Hazel (*Hamamelis virginiana*)*

*Striped Maple (*Acer pensylvanicum*)*

*Mountain Maple (*Acer spicatum*)*

*Wild Plum (*Prunus americana*)*

Medium/Large Trees (>30 feet)

Black Alder (*Alnus glutinosa*)
Littleleaf Linden (*Tilia cordata*)
Crimean Linden (*Tilia x euchlora*)
Hybrid Elms (*Ulmus* sp. or certain cultivars)
Manchurian Ash (*Fraxinus mandshurica* var. 'Mancana')
Red Horsechestnut (*Aesculus* × *carnea* ; local sourced, certain cultivars)
Common Horsechestnut (*Aesculus hippocastanum*)
Ginkgo (*Ginkgo biloba*; 4b, select cultivars)
Mongolian Oak (*Quercus mongolica*)

Red Mulberry (Morus rubra)

Yellow Buckeye (Aesculus flava)

Freeman Maple (Acer × freemanii)

Red Maple (Acer rubrum)

Sugar Maple (Acer saccharum)

River Birch (Betula nigra)

Gray Birch (Betula populifolia)

Northern Catalpa (Catalpa speciosa, local sourced)

Hackberry (Celtis occidentalis)

Thornless Honeylocust (Gleditsia triacanthos; select cultivars)

Kentucky Coffeetree (Gymnocladus dioicus)

Swamp White Oak (Quercus bicolor)

White Oak (Quercus alba)

Burr Oak (Quercus macrocarpa)

Northern Red Oak (Quercus rubra)

Basswood or American Linden (Tilia americana)

American Elm (Ulmus americana; certain cultivars such as 'Princeton')

Yellowwood (4b, Cladrastis kentukea)

Fringetree (Chionanthus virginicus)

Sassafras (Sassafras albidum)

Bitternut hickory (Carya cordiformis, and others in parks only)

Black Cherry (Prunus serotina)

Pin Cherry (Prunus pensylvanica)

Paper Birch (Betula papyrifera)

Yellow Birch (Betula alleghaniensis)

Tuliptree (Liriodendron tulipifera, local sourced)

Black Gum (Nyssa sylvatica, local sourced)

Sycamore (Platanus occidentalis)

Scarlet Oak (Quercus coccinea, local sourced)

Chestnut Oak (Quercus montana, local sourced)

Pin Oak (Quercus palustris, local sourced)

Northern Pin Oak (Quercus ellipsoidalis)

Black Oak (Quercus velutina)

Ohio Buckeye (Aesculus glabra)

Black Walnut (Juglans nigra)

Butternut (Juglans cinerea)

Native Conifers

Balsam Fir (Abies balsamea)
Black Spruce (Picea mariana)
Hemlock (Tsuga canadensis)
Redcedar (Juniperus virginiana)
White Pine (Pinus strobus)
Jack Pine (Pinus banksiana)
N. White Cedar (Thuja occidentalis)
Pitch Pine (Pinus rigida)
Red Pine (Pinus resinosa)
Red Spruce (Picea rubens)
White Spruce (Picea glauca)
Tamarack (Larix laricina)

Don't Plant List

Norway maple (*Acer platanoides*)
Black locust (*Robinia pseudoacacia*)
Tree of Heaven (*Ailanthus altissima*)
Amur Cork Tree (*Phellodendron amurense*)
Sycamore Maple (*Acer pseudoplatanus*)
Privet (*Ligustrum* spp.)
Burning Bush (*Euonymus alatus*)
Porcelain Berry (*Ampelopsis glandulosa*)
Buckthorn (*Rhamnus* sp.)
Barberry (*Berberis thunbergii*)
Autumn Olive (*Elaeagnus umbellata*)
Siberian Elm (*Ulmus pumila* L.)





C H A P T E R S I X

OTHER RECOMMENDATIONS

Other Recommendations

BELOW ARE ADDITIONAL RECOMMENDATIONS TO FURTHER IMPROVE AND ENHANCE MANAGEMENT IN RELATION TO THE URBAN AND COMMUNITY FOREST:

UPDATE THE VILLAGE TREE CODE/ORDINANCE

Canton has done much to develop its urban tree and forest management. The Village has created a Tree Committee and has basic tree ordinance language written into Village code. However, the current tree code should be updated and improved upon, in order for it to achieve its purpose and for clarification in general.

Additionally, the Tree Committee has stated a goal to promote tree protection during new building and development. New development on vacant land often involves removing existing trees and other vegetation. As a matter of principle, conservation of existing desirable trees in good condition should be accomplished whenever practicable. It would be wise for the Village to consider amending the Village Code to reflect this principle, by adopting a Tree Protection Ordinance. The Tree Committee could be given an advisory role to play, working constructively with the Code Enforcement Officer and Planning Board in the permit review process when wooded sites are involved, and also where new tree plantings are proposed.

Tree Ordinance Background Information

A tree ordinance is a tool to help protect and manage a community's trees. It can be designed to regulate various aspects of tree planting, removal, and maintenance on public and private property within a municipality. By protecting trees, a well-planned, written, and implemented ordinance can enhance a community's beauty, reduce air pollution,



[Image] (above)

A northern catalpa grown from northcountry stock.



[Image] (above)

Wisteria growing in a red pine.

lower air conditioning costs, and increase biodiversity.

The International Society of Arboriculture categorizes arboriculture-focused tree ordinances, which relate to maintaining trees for aesthetic and environmental benefits, into three main categories:

1. Street and park tree ordinances regulate the planting, removal, and maintenance of trees in parks or along public rights-of-way, including private trees that could endanger the traveling public. These ordinances can include tree planting specifications (e.g., requiring tree planting in parking lots) and tree care standards (e.g., standards for pruning and removal). The Village has already accomplished the basics of this type of ordinance.
2. Tree protection ordinances protect specific tree species, trees of a certain circumference or height, or trees with historical significance on private property. These ordinances usually stipulate that permits are required to remove, encroach upon, or prune such trees. They also provide for the replacement of removed trees. Canton does not currently have this type of ordinance, and adopting a tree protection ordinance with these stipulations would help to protect vulnerable trees on private property in the Village.
3. View ordinances help resolve conflicts between property owners that occur when trees block views or sunlight. We are not at this time recommending this type of ordinance.

Tree Code and Tree Protection Ordinance Recommendations

The Village of Canton has an extremely basic street and park tree code (Village of Canton Code, Chapter 302 TREES) that covers only some elements of maintenance and removal of trees on the public property ROW, and on private property. This code could be improved and expanded upon greatly. To modernize code and extend protection of trees within the Village, a more robust Tree Ordinance is recommended.

Recommendations for this ordinance includes:

- Create a clear purpose statement and define terms that will be used in the code, so that the intention of the code is understood and there is no confusion or misunderstanding in interpretation of the code.
- Designate a municipal authority to administer the ordinance, and define roles of those responsible for management and maintenance of urban trees. (e.g. the Superintendent of Public Works may be authorized by the Board of Trustees to accomplish this work)
- Create a section of code that planting requirements. Currently there is code for maintenance and removal, but no code clarifies responsibilities for planting and planting specifications (spacing, location, species recommendations)
- Create standards and specifications for planting, pruning, and removals.
- Create a Tree Protection Ordinance update to Code. To further protection of trees within the Village on private property, a Tree Protection Ordinance is recommended. A Tree Protection Ordinance is used to protect trees during construction, and those of historic/heritage or sentimental value. Sometimes this type of ordinance may create conflicts if any of the trees covered pose a safety hazard. It helps to plan for this possibility.

To evaluate the feasibility of these recommended ordinances/code, the Canton community should create a working group to assess the Village's needs and wants, resources, and existing ordinances. In the beginning, the group should develop rules governing information sharing, decision-making, and conflict resolution.

An ideal group is composed of people who mirror the demographics of the community. It should include experts in relevant topics like forestry and public works, as well as people from other fields. A sample group could include a realtor, developer, garden club member, arborist, planner, environmental group representative, landscape architect, forest landowner, public works official, business owner, lawyer, and interested citizen.

For in-depth information on the process, see *Guidelines for Developing and Evaluating Tree Ordinances*. Published by the International Society of Arboriculture in 2001, it remains the most comprehensive guide on the subject, addressing everything from planning and implementation to evaluation and enforcement.

Tree ordinance recommendations from the NYS DEC are another excellent resource, which are compiled below:

DEC Recommended Tree Ordinance Components (<https://www.dec.ny.gov/lands/5276.html>)

I. Purpose

A clear statement of purpose or intent of this ordinance will help avoid ambiguity in interpretation. For example, "It is the purpose of this ordinance to promote and protect the public safety, and general welfare by providing for the regulation of the planting, maintenance, and removal of trees, shrubs, and other plants within the Village of Canton."

II. Definitions

Definitions of terms used in the ordinance such as street tree, adjacent property owner, dripline, nuisance, etc., will prevent confusion in interpretation and enforcement of the ordinance.

III. Establishment of a Tree Board (This may be in a separate ordinance.)

Establishment includes defining membership, terms, duties, and meetings.

IV. Municipal Authority and Responsibility

Who within the municipal government is responsible for administration of the ordinance? Is there a municipal forester or ISA certified Arborist? Does this person have authority for enforcement action? This section also defines and designates who is responsible for planting, care and protection of the urban trees.

V. Clarification of Title to and Responsibility for Trees

This section clarifies which trees are publicly owned and which are privately owned. This section may also describe a process by which adjacent landowners may work on a street tree abutting their property within the standards set by the municipality.

VI. Planting, Maintenance and Removal

This section clarifies responsibility of adjacent property owners in cases of street-sides or other easements, and minimum specifications. It covers planting and maintenance requirements and may include permits, an official species list, spacing and location, or it may reference planting standards and specifications in a separate document. Trees that pose a threat to the health and safety of people or property may need to be removed. This section describes the process by which trees are identified as hazardous and who is responsible for the work. In addition to new development, renovations to existing developed areas should be covered.

VII. Trees on Private Property

Trees on private property may pose threats to public safety or other private property. This section provides the authority to inspect private trees and require action by the owner to eliminate any problems, if necessary.

VIII. Requirements of Professionals

This section protects homeowners and the community forest from inadequately trained and unscrupulous people who claim to be professionals.

IX. Prohibited Activities

This section protects trees in the public right of way from negligent or intentional damage.

X. Tree Protection

Protecting trees is always a challenge. This section is used to protect against insect or disease epidemics, during construction, and those of historic or sentimental value. Sometimes this section may create conflicts if any of the trees covered in this section pose a safety hazard. It helps to plan for this possibility.

XI. Permits

Adjacent landowners may want to plant trees and work on trees on the public right-of-way abutting their property. This section describes how a landowner may do this in accordance with the forest management practices recommended in your ordinance. Be aware that if the process or cost of obtaining a permit is considered excessive, citizens will be less likely to comply with the ordinance.

XII. Enforcement, Penalties and Appeal

This section designates who is responsible for enforcement. Without penalties, enforcement of any ordinance is difficult. In addition, penalties need to be sufficient to deter violations. Depending on the length and complexity of the ordinance, penalties for violations may be listed in a single provision or in several different parts of the ordinance, and the penalties may be simple or complex. Appeals provide checks against the authority of the tree program manager.

XIII. Severability

A statement protecting the validity of the rest of the ordinance if any part of it is found to be invalid by a court. For instance, "Should any part or provision of this ordinance be declared by a court of competent jurisdiction to be invalid, the same shall not affect the validity of the ordinance as a whole or any part thereof other than the part held to be invalid."

XIV. Other

Because circumstances can vary greatly between municipalities, other sections may need to be added. The ordinance should fit your individual community.

It is recommended that an appended "standards and specifications" document be created. This document lists up-to-date detailed tree planting and maintenance standards and specifications. Standards change as more knowledge is gained in the field. It is better to reference this document in the ordinance so the ordinance does not need to be amended as standards change. The International Society of Arboriculture is a professional organization that sets standards and specifications for planting and care. The American Association of Nurserymen's American Standard for Nursery Stock is also a good reference.

Public input in developing the ordinance is essential to its successful passage and implementation. They should be involved in the determination of needs, drafting, and public review and hearings.

HERITAGE TREE RECOMMENDATIONS

Within the Village are trees that may be considered "heritage trees", i.e., trees that are particularly old, large, uncommon, or valuable due to their aesthetic, botanical, ecological or historic qualities. Some trees may be naturally occurring and others were planted many years ago by visionary residents who recognized the importance of trees to the quality of life in the community. Many local heritage trees have been lost through the years due to age, disease, storm damage, construction activities and removal by property owners. In order to prevent further losses of such trees, a definition and inventory of heritage trees has been produced.

Definition: Any tree greater than 30" DBH that is in good health and structurally sound.

LBS Ecological has identified any such trees that are located on Village-owned property from the previous inventory, noted their locations for inclusion in the Heritage & Legacy Tree Inventory, described their unique qualities, and assessed their condition and conservation potential. Over time, additional trees may be added to the inventory by the Village, and efforts will be initiated to promote public awareness, appreciation and conservation of heritage trees.

Heritage Tree Inventory List

Silver Maple, 42" DBH, 10 Chapel St

Silver Maple, 48" DBH, 14 Goodrich St

Silver Maple, 40" DBH, 10 Goodrich St

Sugar Maple, 42" DBH, Park at Court and Pearl St.

Red Oak, 48" DBH, 86 Judson St

Other trees that meet the criteria above, but exist on private property, are not included on this list because currently there is no protection afforded to those trees. If the Village chooses to adopt a more stringent Tree Protection Ordinance (see previous section) it would add a level of protection to these trees on private property within the village limits.



[Images] (above)

Sugar Maple and Red Oak trees that are on the Heritage Tree List.

HIRE OR TRAIN A STAFF MEMBER TO HAVE ARBORIST CREDENTIALS (ISA)

Create a position (or train a current employee) for someone with proper education in arboriculture/silviculture to bring modern forestry techniques to the management of the urban forests in Canton. Routine maintenance of urban forest databases of information will allow the Village to monitor the changing condition of the urban forest, and to make adjustments to ensure that steady progress with our goals for the urban forest.

Successful stewardship of a thriving urban forest requires the in-house expertise of a certified arborist who has clearly-defined responsibilities at DPW or Department of Parks and Recreation for overseeing the urban forest (planning, training and supervision, scheduling, developing further DPW protocols, etc.). The Arborist will lead a DPW or Department of Recreation and Parks crew specifically trained to provide the necessary work force to improve the trees of Canton. Provide training opportunities to ensure that the arborist stays current regarding the BMPs of the urban forest and other green infrastructure. Coordinate tree planting and tree care performed by the staff of the DPW or Department of Parks and Recreation, or by consultants.

Charge the Canton DPW and Department or Parks and Recreation to have more involvement with this project and other urban forestry projects on all public land, including parks and street trees. An updated mandate will lend support and input to decisions taking place throughout the Village.



[Image] (top)

Woodpecker in crabapple.

INVENTORY AND PLAN UPDATES

Update the tree inventory and maintain an up-to-date database:

- We noted that there were some errors on the current inventory, and found that it hasn't been updated properly as trees are removed and planted. Because it nearly 5 years old, we recommend to complete a replacement full inventory by 2023.
- Develop a process for regularly sharing information, between the DPW, Department of Parks and Recreation, Tree Committee, and other NGO groups regarding plantings, removals, and trends in tree conditions.
- Charge the Tree Committee with developing a process (to be approved by the Village ISA Arborist) that will use the public or coordinated citizen volunteers to help gather information on tree status.
- Undertake periodic sampled inventories, beginning no later than five years from the adoption of this plan, focused on a particular planning issue or concern.

Set additional planting targets (annual, mid-term, long-term) for progress on the urban forest:

- The DPW will work with the Tree Committee to set additional future planting targets and priority planting areas for all urban forest areas within Canton.
- Determine the metrics that will be used to measure progress towards goals for an expanded urban forest (for example; canopy, number of trees, overall biomass, number of streets in compliance with Village ordinances, large species trees percentage; native species vs. non-native species vs. invasive species; environmental, social, & economic benefits) and adopt targets for those metrics.

Continue to promote planting native species and near-native species trees on all land, public and private

- This strategy adds resiliency to the Village's urban forest in anticipation of climate change impacts
- Encourages wildlife and pollinator habitat

Continue to base forestry practice on current scientific information

Draw on local or regional resources for expert recommendations

- Private Forestry/Arborist Consultants,
- Cornell Cooperative Extension,
- NYS DEC,
- NRCS,
- Soil and Water Conservation District,
- and others

FIND AND LEVERAGE RESOURCES AND FUNDS FOR THE URBAN FOREST

With the knowledge that the benefits from trees far outweigh the costs, mobilize financial and human resources, public and private, to preserve and expand our urban forest.

Leverage Village funds whenever possible by applying for matching grants.

- The DEC and the Arbor Day Foundation are two likely possibilities for matching grant opportunities.
- Apply for the next round of DEC funding, for a grant to fund tree planting or for an new tree inventory
- Research and apply for other federal, state, foundational or private environmental stewardship grants
- Join/retain membership (\$25/year) to New York State Urban Forestry Council and keep up with peer municipalities around the state. NYSUFC advises members on many grant programs.

Engage civic partners to participate in planting programs or campaigns

- Cooperate with local colleges to engage their respective student bodies in planting
- Use Arbor Day/Earth Day as a focal point for tree planting during a 'celebration' of these holidays
- Reach out to new and current partners as a method to attract new volunteers

Find creative ways to incentivize developers, businesses, and homeowners to expand/preserve the urban forest.

- One member of the Tree Committee mentioned that a tax credit or other form of incentive could be used to promote urban tree care by owners of adjacent homes and businesses, especially watering during establishment.
- Create a program that allows adjacent property owners to plant trees properly, and to plan specifications, on the public ROW.
- Create a process for residents to request tree planting in public ROW adjacent to their property or on private property adjacent to public areas per the existing code/regulations.
- Create and support a Citizen Pruner program that would educate and engage local volunteers to formatively prune young trees.

Continue to build a partnership with and negotiate with the utility company

- Plant and maintain a diversity of species trees wherever possible – planting small species when necessary (line conflicts, etc).
- In areas where there is a utility ROW engage the utility to aid in tree management.

PROMOTE COMMUNITY AND GRASSROOTS EFFORTS

Engage the public in urban forest care. Build public-private partnerships to achieve the Village's goals.

- Raise awareness - through education, collaboration, and the exchange of information—among stakeholders about the value and needs of the urban forest.
- Engage with the Village's property owners, local businesses, developers and the design community, as well as Village boards to promote the goals for the urban forest
- Educate the public about the rationale behind project goals/objectives, best management practices, and the tree/shrub/herbaceous planting lists.
- Bring focus to Village tree plantings by bundling them into campaigns that will attract the public's interest. Generate energy and interest by announcing planting or greening campaigns and invite public participation.

Educate the public about the value and needs of the urban forest

- Produce and distribute information through educational brochures and web-based media. These can also be sent to property owners in the Village along with their water bill etc.
- Develop user-friendly sources of tree information for DPW Department of Recreation and Parks, or other Village entities to distribute.
- Encourage the public to value diversity and to eliminate invasive species trees and shrubs from the Village.
- Plan future tree plantings to anticipate the demands of global climate change.

Encourage direct citizen stewardship

- Encourage and incentivize private planting & maintenance and planting or maintenance partnerships with the Village.
- Organize community planting days and trained citizen pruning teams.
- Train volunteers to assist the DPW and Department of Recreation and Parks with care of young trees and monitoring the health of the urban forest. Consult with other cities who have used citizen volunteers successfully to glean knowledge.
- Utilize citizen scientists and researchers to inform and support Village efforts.
- Solicit citizen input for planning, prioritizing, and updating the tree inventory





CHAPTER SEVEN

APPENDIX

References

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Planting Plans - Bend in the River Park and Rt. 11 Eastern Gateway

See attached documents

Current Urban Forest Management Planning Documents and Legislation of the Village of Canton

See attached documents

Inventory and Risk Tree Data

See attached file

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