



# **Urban Forest Management Plan**

Municipal Services Department

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## Executive Summary

Urban forestry is the term associated with the management of a Village's tree population, a natural resource that provides important environmental, aesthetic, and economic benefits to the community over decades. Many communities throughout the United States have limited staff, equipment, and fiscal resources to manage their public trees. These issues are even more critical for isolated, rural communities. In addition, the treatment, removals, and replacement of the EAB infested ash trees have increased stress on municipal resources. Village trees must be properly and routinely cared for to ensure the safety of the residents, foster a steady population of high-quality trees and to provide maximum benefits over time. The overall goal of urban forest management is to promote a healthy, diverse, safe, and sustainable urban forest that benefits the current and future residents of the community.

It shall be the mission of this Urban Forest Management Plan to outline goals, budgets, and Arboricultural Best Management Practices for the Urban Forest in the Village of Western Springs. Trees that make up this Urban Forest consist of trees in the Village's public right of way. This plan also seeks to outline both the short- and long-term management of this urban forest resource to maximize the environmental and aesthetic benefits of the Urban Forest, while minimizing risks and costs. These goals and practices are designed to be financially and programmatically sustainable, as well as flexible for the Village, both now and in the future.

## Strategic Goals

Listed below are the strategic goals of this Urban Forest Management Plan ("UFMP"), as well as a brief discussion of how they shall be met. Every attempt was made to make these goals realistic and achievable, such that they do not place an undue burden on the Village, its residents, or its resources. The goals of this UFMP are to save money and provide greater public benefit benefits through proactive management. The Plan is also meant to be adaptive and should be, reviewed periodically by the Properties and Recreation Committee, identified as the Village's advisory forestry management board. The review process will include evaluation of progress made towards these goals. Goals may be altered after the review, as conditions warrant. This UFMP is written with the understanding that government agencies, administrations, and residents change over time, and therefore it's goals and milestones require a large degree of flexibility. Since trees represent a long term (50 to 200 year) commitment, this Urban Forest Management Plan is intended to provide guidance and continuity through those changes, while also adapting to them as the needs change.

### Establish Goals to Enhance Urban Forest Diversity

Urban forest diversity will make a more resilient and robust forest, help protect the forest from pests and pathogens, streamline maintenance programs, and even out annual budgetary requirements. Without diversity the urban forest is a greater risk from extreme events such as drought, climate change, foreign pests, and pathogens.

### Document Tree Policies and Procedures for Protection and Construction Activities

Tree policies and procedures should identify industry standard guidelines to establish best management practices for the care of all trees located in the urban forest. The policies and guidelines should be utilized by both the Village, private contractors, and residents.

### **Maintain an Acceptable / Unacceptable Species List**

Identify trees that exhibit characteristics that are appropriate for planting in the urban forest, particularly in the Village Right of way. Ensure that diversity standards are met. Undesirable trees should be identified as those which are inappropriate for Village Right of way due to unfavorable characteristics including, but not limited to undesirable root systems, extreme insect, or disease susceptibility, soft or brittle wood, fruiting, line of site restrictions and/or limited cold/heat hardiness.

Such problems may lead to excessive maintenances costs, hazards to other trees or the public.

### **Manage Tree Preservation and Invasive Species**

Establish guidelines and procedures as necessary for the management of the tree population and diversity in response to invasive species or pathogens. Management guidelines may include the treatment (short or long term), removal of tree species and/or other practices as deemed necessary to encourage diversity to minimize overall the overall urban forest risk to invasive species.

### **Manage Tree Removal and Planting Program with Industry Standard Practices**

Establish tree planting and removal guidelines utilizing industry best management practices for all trees planted in the urban forest and under the care of the Village.

### **Maintain an Accurate Tree Inventory**

Establish an accurate tree inventory to guide all other tree management activities.

## **Current Staffing and Activities**

### **Staffing**

#### **Department of Municipal Services (Division of Public Works)**

The Public Works Division is responsible for implementing forestry programs with the approval of the Village Board. The Division consists of eleven (11) public works personnel with the goal of at least one trained forestry professional on staff. The Division also manages external consultants and contractors to complete work approved by the Village for forestry related activities.

#### **Forestry Consultant**

The Forestry Consultant is responsible for impartially assessing the tree population as to its various needs on a routine basis. The Forestry Consultant communicates needs in terms of tree planting, removal, and maintenance to be performed with the Public Works Division. The Forestry Consultant may also function as the Village's Certified Arborist during periods where the Village is without certified or trained forestry staff. The Forestry Consultant reports to the Superintendent of Public Works or their designee.

#### **Tree Care Contractors**

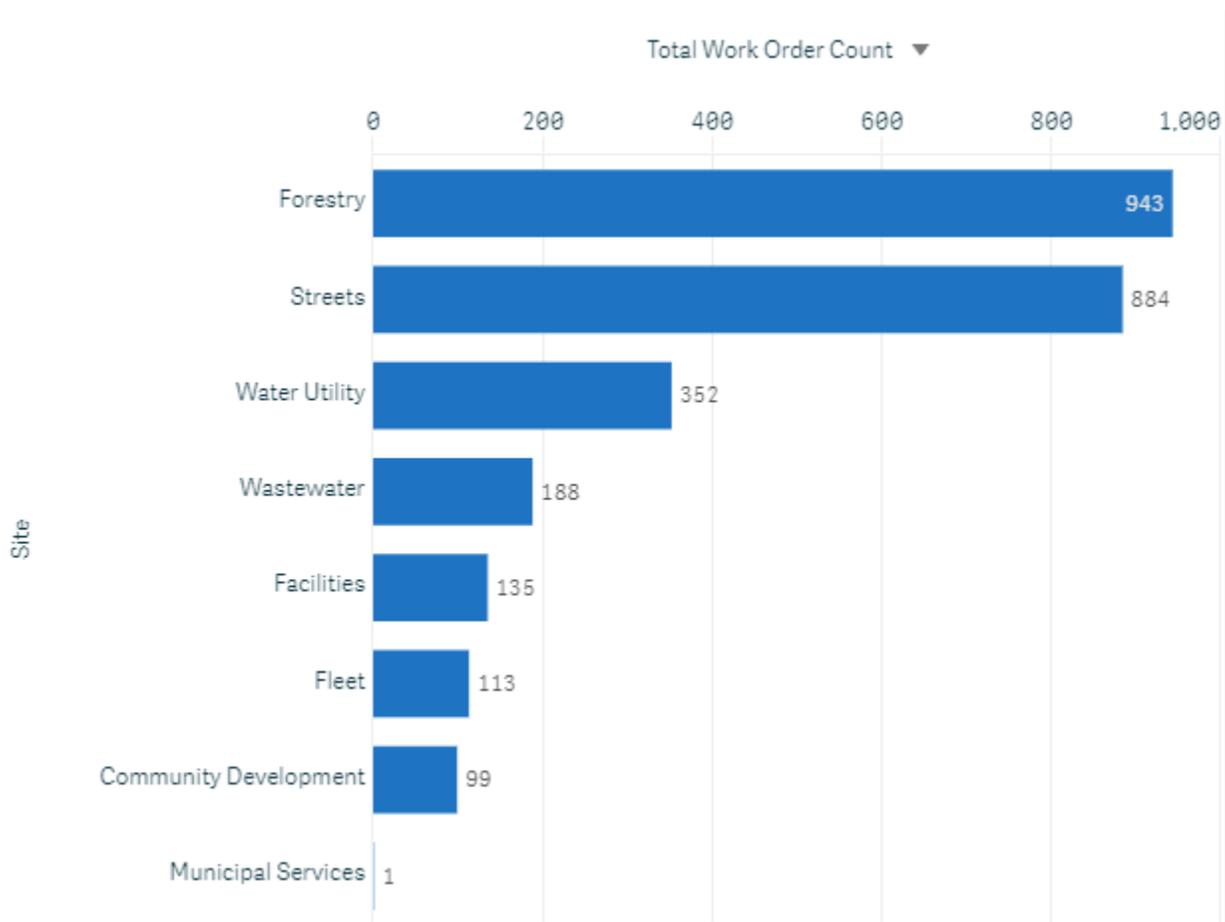
Tree Care Contractors are responsible for performing work identified by the Division of Public Works, or Forestry Consultant. The Tree Care Contractor must have at least one (1) International Society of Arboriculture Certified Arborist on site when work is being performed, and guide and participate in the performance of Tree

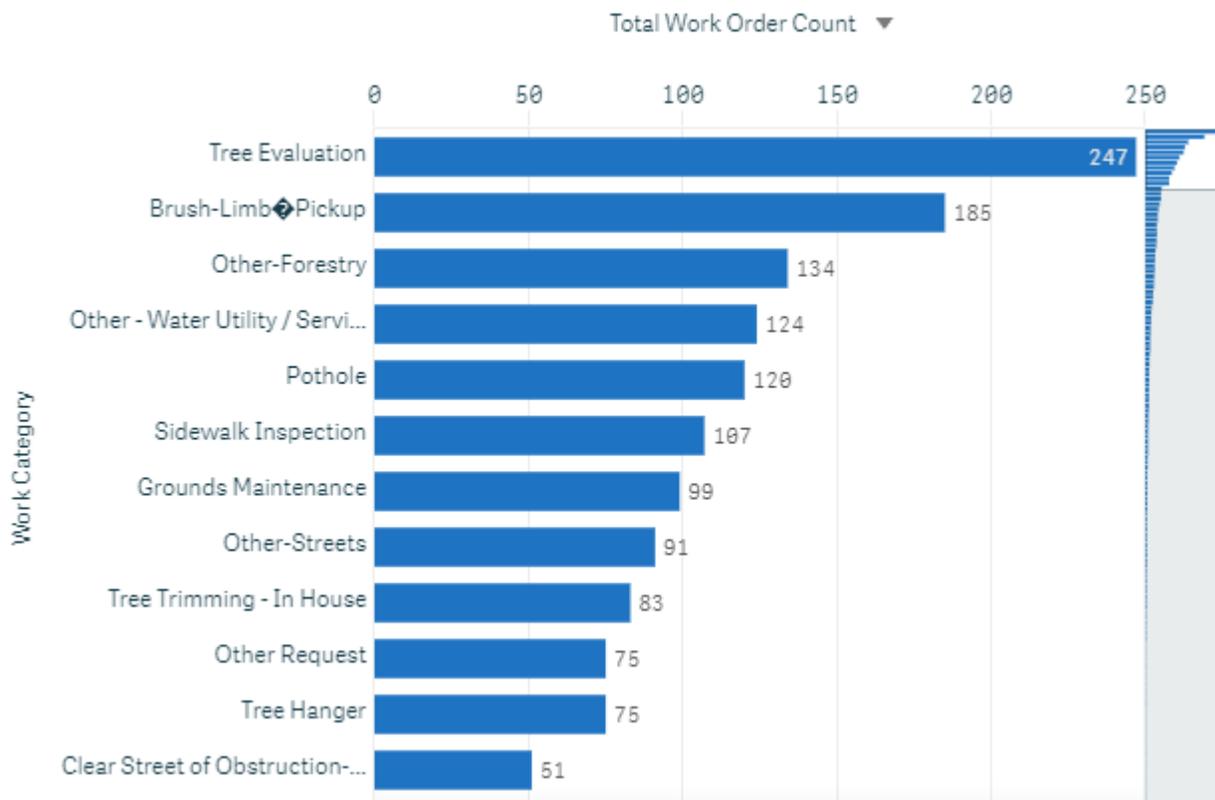
Trimming, Pruning, Removal, and Plant Health Care operations. Other operations, such as Tree Planting, Tree Watering, and Tree Mulching do not have to be performed under the direct supervision of a Certified Arborist.

Tree Care Contractors are selected on an annual basis through a low-cost bid, solicitation of competitive proposals or through a joint purchasing initiative in the State of Illinois. Contracts may be renewed at the approval of the Village Board.

**Current Status of Forestry Crew Equipment and Production (Updated 02/03/2022)**

As of this writing the Village does not employ a full-time forester or certified arborist and is currently contracting those duties to a Forestry Consultant. Public Works Division staff perform routine forestry-related work totaling approximately 300 to 400 work orders per year for Forestry related tasks. Tasks range from hazard tree and branch removal to tree planting. The charts below showcase work orders completed from 2020 to spring 2022.





The Village currently utilizes Tree Care Contractors to perform annual tree trimming, tree removal and tree planting programs throughout the Village.

## Participatory Programs and Urban Forest Initiatives

### Tree City USA

Founded by the Arbor Day Foundation in 1976, the Tree City USA program provides assistance and recognition to incorporated communities that maintain a continuously active tree management programs. In 2022 the Village celebrates its 35<sup>th</sup> year as a Tree City USA community.

### Suburban Tree Consortium

The Village of Western Springs is a founding member of the Illinois Tree Consortium. Founded in 1985 by a group of municipalities wishing to improve the quality and selection of parkway trees in the Chicago area. Low bid selections year after year had brought about high mortality rates, which in turn impacted the municipality's credibility. Additionally, low bid requirements provided for little continuity and consistency with area nurseries, resulting in poor quality and selection.

The communities lobbied, with the help of the West Central Municipal Conference, to change state statute to extend the length of time municipalities could enter contractual relationships with area nurseries. Today, Illinois State Law allows municipalities to enter long term contractual relationships for the purpose of procuring parkway trees for up to ten years. The goal of the Consortium was and has been for a group of municipalities to enter a contract growing arrangement whereby nurseries would grow trees according to predetermined specifications. Those trees would be made available for Fall and Spring plantings up to a five-year period.

### Cost Share Tree Planting Program

The Parkway Tree Replacement Program allows residents to replace or add a parkway tree and share the cost with the Village to encourage development and care of the parkway trees in front of resident's homes. The Village covers 75% of the cost of the tree and planting with trees planted during the spring of each year.

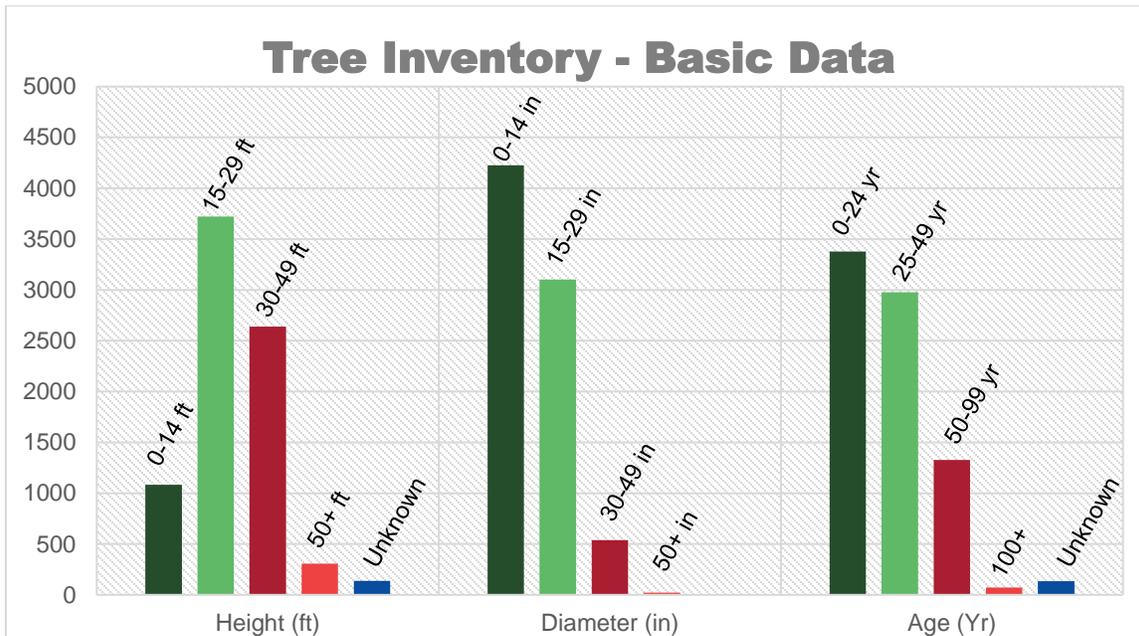
### Maintenance Activities

#### Activities Summarized (as of 03/25/22)

	Trimmed	Removed	Planted	
2020		210	121	
2021	1,155	134	106	
2022	825	TBD	TBD	
AVG	990	172	113	
<b>Annual Budget</b>	<b>\$105,000</b>	<b>\$60,000</b>	<b>\$60,000</b>	
<b>Avg/Tree</b>	<b>\$106.06</b>	<b>\$348.83</b>	<b>\$530.97</b>	

## Tree Inventory Data and Analysis

The Village completed a tree inventory in 2019 and has implemented a new management system through its Geographic Information System to actively update tree condition assessments, new plantings, and tree removals. An interactive map of the Village's tree inventory can be found online at [wsprings.com/forestry](http://wsprings.com/forestry).



During the Tree Inventory completed in 2019 the Village rated each tree utilizing a 1-5 rating system. The rating criteria are as follows:

- Condition 1: Specimen** – Tree has no observable defects, wounds, diseases, and has textbook perfect form for the species. In addition, since young trees tend to be trouble free, a condition 1 tree with a greater than 16" DBH shall be classified as a Legacy Tree.
- Condition 2: Good to Fair** – Tree may have a small amount of deadwood, or a very limited number of nonthreatening defects. The overall form of the tree must be good, and consistent for the species in question. These trees must be larger than 8" DBH for the reason listed above. Often the difference between condition 2 and 3 is growth habit.
- Condition 3: Fair** – Tree has moderate amounts of deadwood, wounds, or other deficiencies, but is generally healthy. A wide variety of forms is acceptable for this group, which is meant to define the middle ground around which better or worse trees can be defined and identified.
- Condition 4: Fair to Poor** – Tree has defects, deadwood, wounds, disease, etc. That are in imminent danger of causing a need for removal. Very poor form or architecture can put an otherwise healthy tree in this category as well, though generally it is reserved for health defects.

- **Condition 5: Poor** – Tree must be removed. Physical or Health defects are too far advanced for the tree to be reasonably saved. Like condition 1 trees, these are relatively rare, as generally trees approaching this level are removed before they can get there.
- **Condition 6: Dead** – Tree must be removed. Tree is dead with no observable signs of growth and exhibits defects, wounds, or disease.

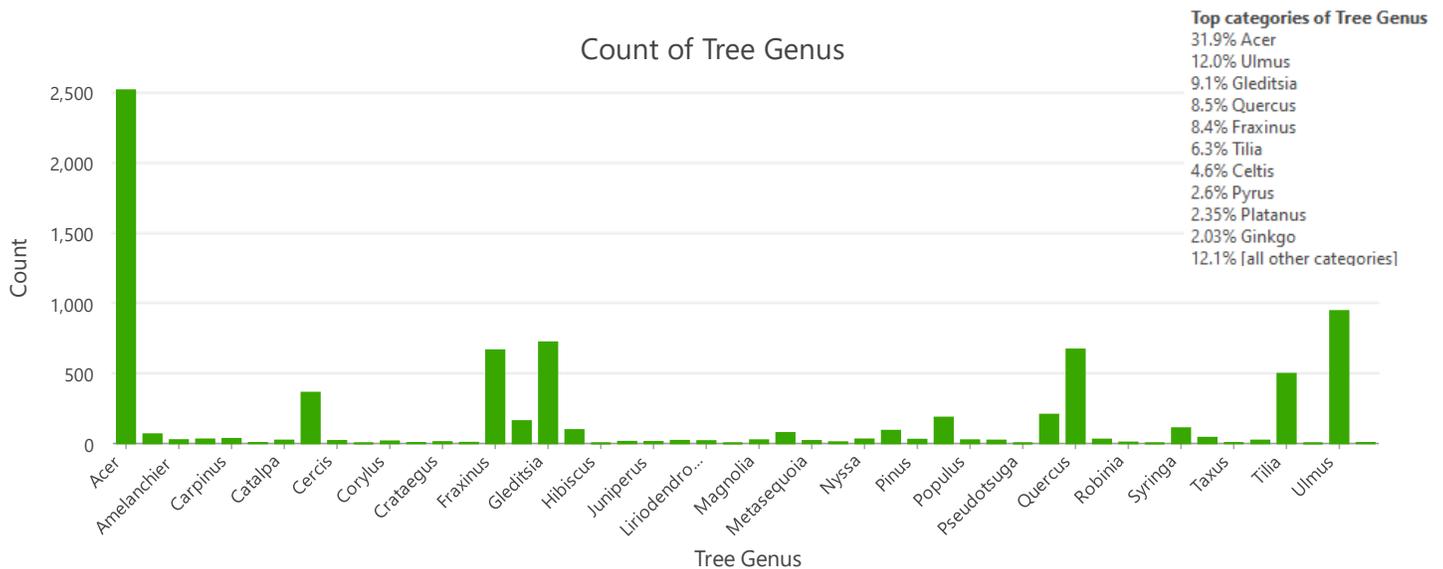
## Diversity Analysis

### Diversity Standards

#### Taxonomic Diversity

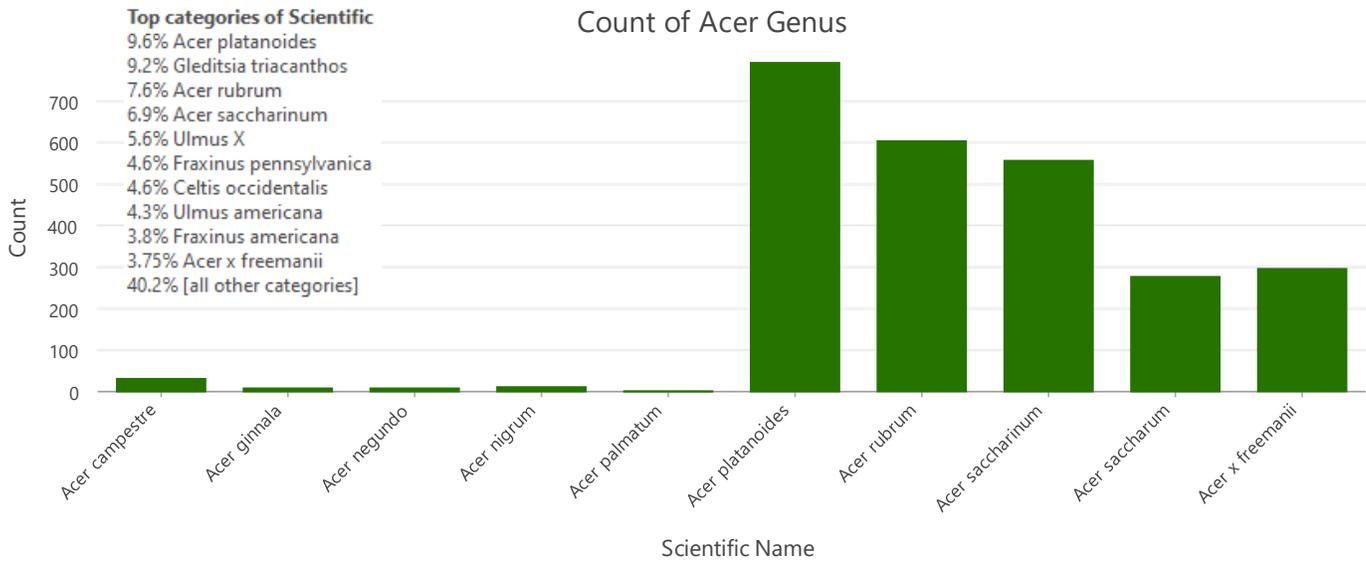
Tree species remains an important part of the Village’s tree management program to ensure that the urban forest does not fall victim to mass tree losses from pests and pathogens. Emerald Ash Border and Dutch Elm Disease have demonstrated over the past several decades the impacts of mono-culture planting or having any single species represent a significant portion of the urban forest.

The Village’s tree population is diverse with a representation of 49 genus types and approximately 100 different scientific species types. Despite the diversity present in the Village’s urban forest, certain species do represent a disproportionately large percentage of the Village’s inventory.

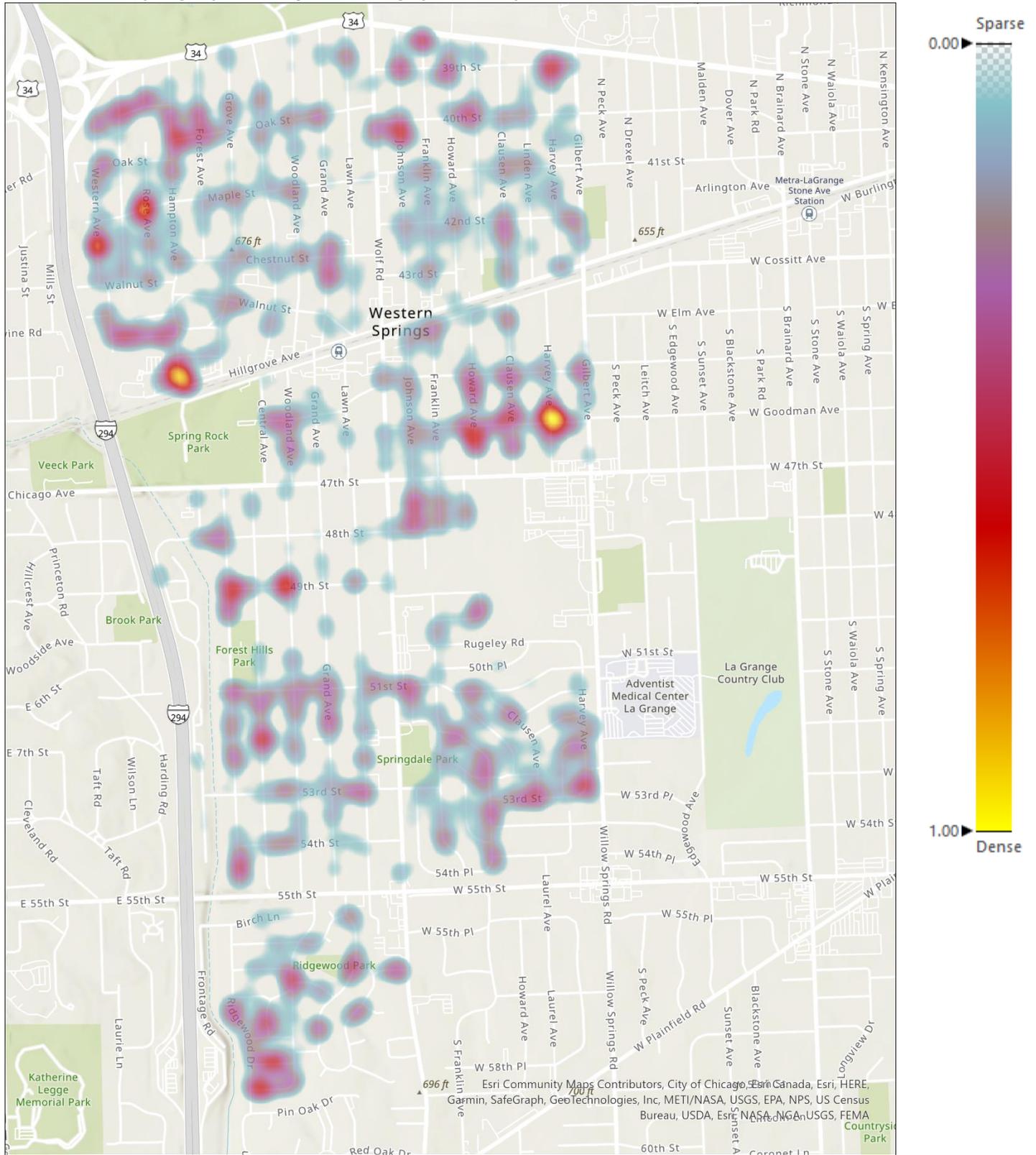


The genus type Acer, commonly known as the Maple, represents approximately 32% of the Villages total tree population. Any genus or species tree with over 20% representation may be classified as “overrepresented”, depending upon the surrounding diversity. Caution should be considered when planting any species identified in the majority. While these trees may be considered viable, easy to source and aesthetically pleasing, their increased numbers within the forestry stock may put them at risk for mass tree loss due to unanticipated pests or pathogens.

Of the 31.9% Maple representation, that stock is dominated by five species: *Acer Platanoides* (Norway Maple), *Acer Rubrum* (Red Maple), *Acer Saccharum* (Sugar Maple) and *Acer x Freemanii* (Autumn Blaze).

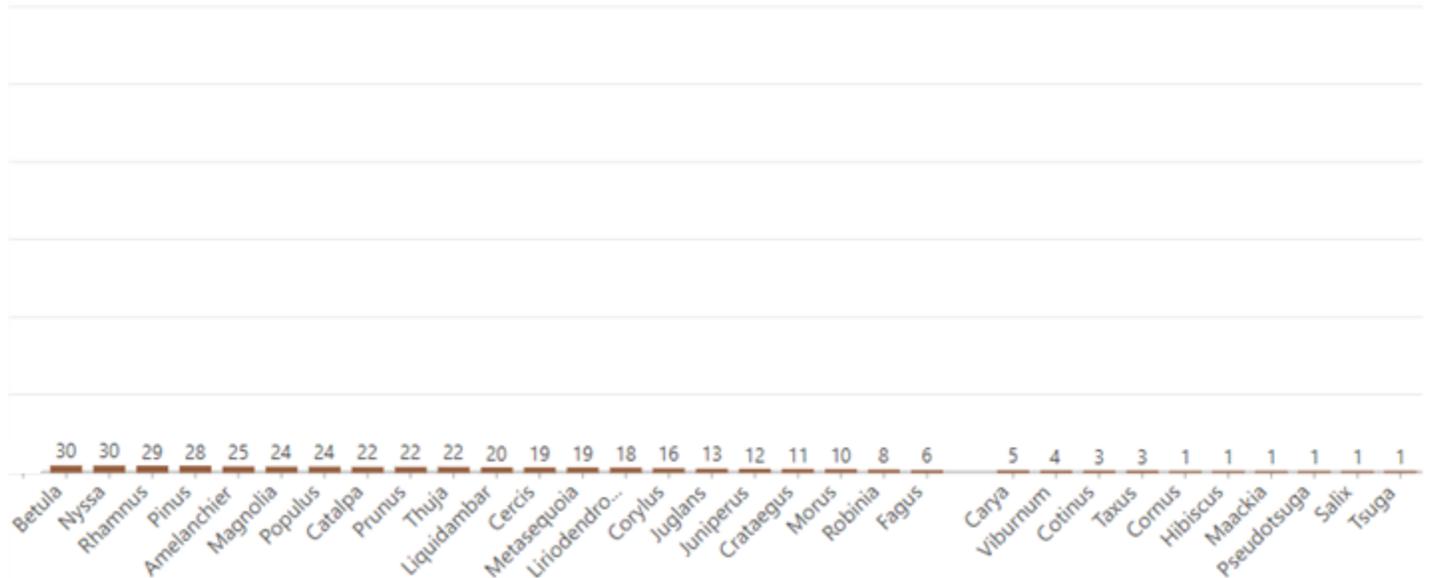


### Acer Genus (Maple) Density Heatmap (03/25/22)



Trees species which represent less than 30 total trees planted and are not classified as an undesirable species should be classified as “underrepresented” and should be considered for additional diversification within the planting program. Presently, 32 of the Village’s 49 genus types are represented by 30 trees or less and may be classified as underrepresented.

### Underrepresented Tree by Genus (03/25/22)



### Spatial Diversity

Spatial diversity is the concept of mixing tree species evenly over the whole population to increase distance between potential host organisms. The easiest way to slow the spread of any new pest or pathogen is to increase the distance between potential host trees. Every pest or disease, such as EAB or Dutch Elm Disease (DED), has a limited area to which it can spread in each time frame. The more difficult it is to get to the next host tree, the less of a problem the pest or pathogen becomes, and the easier quarantine becomes.

## Nuisance and Undesirable Trees

Nuisance and undesirable trees species are those trees identified as having weak wood, poor architecture, messy fruit other features which make them undesirable for installation in the public right of way and the urban forest.

Botanical Name	Common Name	Nuisance Consideration
<b>Betula Jacquemontii</b>	<i>White-Barked Himalayan Birch</i>	Bronze birch Borer
<b>Betula pendula</b>	<i>European white birch</i>	Bronze birch borer
<b>Betula platyphylla</b>	<i>Asian white birch</i>	Bronze birch borer
<b>Betula pubescens</b>	<i>Eurasian paper birch</i>	Bronze birch borer
<b>Fraxinus americana</b>	<i>White ash</i>	Emerald ash borer
<b>Fraxinus excelsior</b>	<i>European ash</i>	Emerald ash borer
<b>Fraxinus nigra</b>	<i>Black ash</i>	Emerald ash borer
<b>Fraxinus pennsylvanica</b>	<i>Green ash</i>	Emerald ash borer
<b>Fraxinus profunda</b>	<i>Pumpkin ash</i>	Emerald ash borer
<b>Fraxinus quadrangulata</b>	<i>Blue ash</i>	Emerald ash borer
<b>Juglans cinerea</b>	<i>Butternut</i>	Butternut canker
<b>Pinus nigra</b>	<i>Austrian pine</i>	Not suitable for region
<b>Pinus sylvestris</b>	<i>Scots pine</i>	Not suitable for region
<b>Populus nigra</b>	<i>Black poplar, includes cultivar 'Italica'</i>	Canker
<b>Ulmus americana</b>	<i>American elm</i>	Dutch elm disease
<b>Ulmus rubra</b>	<i>Slippery elm</i>	Dutch elm disease

# Tree Maintenance Guidelines

## General Maintenance Activities

A local public entity has the duty to exercise ordinary care to maintain its assets in a reasonably safe condition such that the public would be safe from reasonably foreseeable defects.

The Village strives for the prompt maintenance of those trees located in the public right of way and that are under control of the municipality. There are five basic means from which the municipality will learn of tree conditions:

1. Citizen notification
2. Employee observation while performing other duties
3. Systematic Trim/Pruning Cycle
4. Tree Inventory
5. Comprehensive Elm and Ash tree mitigation

The responsibility of the Municipal Services Department is to follow-up on all citizen and employee reports of tree conditions and take said complaints or reports into consideration when determining the next area in the trim/pruning cycle.

Citizen notification of tree conditions may be made to any Village Department.

The Municipal Services Department shall develop an annual trimming/pruning program for all trees which will include a thorough inspection for the trees current state of health, including but not limited to branch structure, branch unions, decay, fungus, disease, pests, foliage, and root systems. The Director of Municipal Services (hereinafter the "Director") also will also develop a tree inventory which will include the following but is not limited to species, approximate age, maintenance program and inventory maintenance and cycle. The Inventory program will include a comprehensive Risk Assessment System with ranking to determine which trees pose the most risk to the public. This shall be used in determining the removal of the assets as well as designing a tree maintenance program and further prioritizing the trim/pruning and treatment schedule.

Periodic inspections will be conducted upon annual budget, personnel availability, weather conditions and time considerations permitting and in the exercise of the Director's discretion given the competing interests of other public works projects underway or planned. The Village strives to complete a survey of the entire public tree inventory within the Village approximately every 5 to 7 years.

## Retaining A Consultant

The Village will obtain a forestry consultant as necessary to aid with tree maintenance and management activities. The forestry consultant shall be involved, at the request of the Director, or their designee, to assist in the sourcing of contractors and vendors for tree trimming removal and planting operations and in assisting in maintaining the tree inventory. Additional work shall include coaching staff on tree health and risk assessments, assisting in explaining policies to homeowners, and to educate residents on how to help the Village in care for their trees.

## **Chemical Applications**

When financially practical, chemical control for common pests or pathogens may be utilized as a preventative or curative method for ailments and increase the aesthetics and benefits of the Village's tree population. The Village will utilize chemical treatments applied as a management program to the Village's tree stock and will not target individual trees or respond to individual treatment requests.

Presently the Village treats for Emerald Ash Border (EAB) and for Dutch Elm disease for those trees identified through the tree inventory as either Legacy Trees or in circumstances where the tree species represents as disproportionately large percentage of the tree population in a defined area.

The goal of any chemical treatment will not be to indefinitely prolong the life of the tree, but to prolong the health of the tree as it relates to the overall neighborhood aesthetic. Ash trees will continue to be removed on an annual basis and the treatment will prevent largely dense areas of ash trees from being removed at the same time.

The Village will make all reasonable efforts to not clear cut any neighborhoods but will be required to remove trees that have been identified as having EAB or Dutch Elm Disease and are in poor condition as rated by the inventory or Village Forester. Trees that have been removed will be replaced with alternates as the budget and surrounding conditions allow but are not guaranteed to be replaced.

Residents may make requests to treat their own parkway tree through the Village's tree permit program and must receive written approval prior to treatment. The Village shall have sole discretion and authority to identify a tree for removal based upon the condition or any other factor as determined by the Municipal Services Department. The application of any treatment process either by the Village or the resident does not preclude the Village from removing the tree.

## **Water Management**

All new trees planted within the Village right of way or on public property shall be planted with a water bag for 2 to 3 months dependent upon exterior conditions to encourage establishment and development of the tree. Residents are encouraged to assist with watering of the tree by monitoring the water bag and refilling as necessary. All trees planted within the Village are adapted to USDA climate Zone 4 and the Village shall not regularly water mature trees located in the parkway.

## Tree Evaluation Procedure

After receiving a resident or employee notification of a tree condition, or because of the systematic inspection during the trim/pruning program, the Director, or their designee, will establish a list of trees for which a potentially hazardous condition may be present. The Director, or their designee, will assign staff from Forestry to assess the tree and determine the best course of action which may include, trimming, treatment or removal and document the action taken. The procedure will assess tree effect severity, size of defective limb, tree value and the probability of the defective part damaging the balance of the tree or causing harm to the public or property.

The inspections should be performed in such a time frame to reasonably act to remove a hazardous condition where economically viable.

The removal of trees will be done based upon an annual schedule considering the risk assessment ranking, imminent threat, and budgetary constraints.

Tree trimming/pruning is based upon the systematic process developed by the Director, or their designee, and will go through the Village in an area-by-area approach running on a cycle of repeat every three years. Throughout the year an additional list will be developed by Village Staff or the Village's Forestry Consultant for additional trees in need of trimming/pruning and will be added to the areas to be trimmed/pruned for the current year.

Throughout the year, Village Staff or the Village's Forestry Consultant will make multiple passes through the Village attempting to determine if any change of conditions have occurred to warrant a change to the risk assessment of any asset and if so, what, if any, corrective action will need to be taken.

After severe storms staff will also go out and determine if any change to conditions have occurred to warrant a change in the risk assessment and if so, what, if any, corrective action will need to be taken.

Any questions concerning this procedure should be directed to the Director.

## Tree Planting Requirements and Standards

Urban planting sites are a difficult environment for a tree to thrive in, and thus it can be expected that approximately 10% of new plantings fail each planting cycle. The Village contracts for tree planting should generally include a one or two-year replacement warranty for any new trees that fail to thrive in their new environment. For trees grown in-house at a liner nursery, the same failure rate should also be expected. In general, urban tree plantings can pose an uphill battle in many ways, due to limited soil volume, salt runoff, airborne pollutants, and other factors. New planting mortality is to be expected, despite best efforts to prevent such an outcome.

The identified planting standards shall apply to all trees planted in the Village right of way, including those planted by the Village and its contractors or those trees planted in conjunction with private development through an approved development plan.

### Planting Standards

- Planting sites shall be determined and monitored using the Village's tree inventory, in conjunction with staff input.
- New planting sites shall be ideally ten feet away from utility structures and a minimum of six feet from manholes and utility structures, driveways, and hardscapes.
- Minimum tree spacing between small/medium/large sized deciduous shade trees shall be no less than 40 feet on center in any direction.
- No tree shall be planted within 10 feet of a driveway, intersection, traffic control device, or known below ground utility. Trees may be planted under aboveground powerlines but must be from the "small" selections listed in the Village's Acceptable Species. Evergreens are acceptable for parks, schools, municipal campuses, and waterways, but should be avoided when adjacent to a road due to visibility issues.

In certain circumstances such as creating screening or by other needs as identified by Village staff or Forestry Consultant these spacing guidelines may be adjusted or waived and shall be evaluated on a case-by-case basis.

- Choice of species for planting shall be done so according to the existing taxonomic, spatial, and age-class diversity identified to the planting location. Whenever feasible no more than 10% of any one species shall be planted project area as determined by Village Forestry staff. A diverse and resilient urban forest shall be created, such that it minimizes exposure to financial, environmental, and health risks while maximizing aesthetics, environmental benefits, and ecosystem services to its residents.
- All planting stock shall be grown within 150 miles of the Village.
- Acceptable nursery stock shall conform to the following standards:
  - Minimum of 1.75-inch caliper, measured at six inches from the trunk flare or eight to thirteen feet in height according to the species.

- Root ball conforms to ANSI Z60.1 Standards for Nursery Stock
  - Less than 10% deadwood in the crown
  - Architecture consistent for the species, cultivar, or variety in question
  - No included bark or other such narrow branch attachments, unless consistent with species or variety
  - Free of pests or pathogens
  - Approved species list for planting within the public right of way.
- Planting and digging of certain species shall only occur at certain times of year, in accordance with nursery and/or industry best management practices and professional judgement. These times are subject to the professional opinions of both the Village and its approved contractors
  - JULIE shall be contacted, and all utilities located a minimum of three days before planting is scheduled to begin.
  - The Village has a 75/25 cost share program, for all new trees planted in the Village right of way.

### **ANSI Z60.1 (Root Ball Standards)**

- All root ball and container sizes for all balled and burlapped stock shall conform to the Z60.1 standards for width and depth, such that they encompass enough of the fibrous root system as necessary for the full recovery of the plant upon installation.
- All bare root stock shall conform to ANSI Z60.1 standards for minimum root spread.
- All containerized stock shall conform to ANSI Z60.1 standards for plant and container size, as specified by the Village, and shall be healthy, vigorous, well-rooted and established in the container in which it is growing. The root system shall reach the sides of the container but shall not have excessive growth encircling the inside of the container.
- All collected plants (those grown on unmanaged land) shall be so designated and shall be nursery-grown stock when they have been successfully reestablished in a nursery row and grown under regular nursery cultural practices for a minimum of two growing seasons.
- The trunk or stem of the plant shall be in the center of the ball or container, with a 10% overall variance in location.
- The use of digging machines in both the packaging and installation of trees is considered an acceptable nursery practice.

## ANSI A300 – Part 6 (Planting Sites)

- Planting sites and work sites shall be inspected for hazards by the Village or by the person responsible for the tree planting prior to the beginning of work each day. This shall include any private contractors, developers or private residents who are approved to plant a tree in the public ROW through an approved Tree permit or development plan. If portions of the work site are outside of the original scope of work, the Village shall be notified immediately prior to the commencement of work.
- Location of utilities, obstructions, and other such hazards above and below ground shall be considered prior to planting and transplanting operations. These include, but are not limited to, gas, electric, sewer, communication, drainage, and signage.
- The following shall be taken into consideration prior to transport and planting: Requirements of individual trees, compass orientation of field-grown trees, site feasibility assessments, soil assessment, and drainage assessment. The Village may request in writing the above documentation from a contractor prior to the commencement of work.
- Tools for planting and transplanting shall be properly labelled or purchased for their intended use, and be maintained in accordance with the manufacturer's recommendations
- The system used to move and store the plant shall minimize desiccation and other damage to the crown, trunk or root ball, and the health and vigor of the plant shall be maintained during these periods.
- The hole to be dug for all new plantings shall be a minimum of 150% larger than the root ball or container diameter, as deep as the root flare of the tree to be planted and shall have sides from which soil has been loosened to aid in root penetration.
- For balled and burlapped trees, all root ball supporting materials shall be removed from the upper third of the root ball and removed from the planting hole prior to final backfilling.
- Prior to planting, container root balls shall be managed by approved methods such as, shaving the root ball, slicing the root ball, and redirecting or removing encircling roots.
- Backfill shall comprise of either the same soil created when the hole was excavated, or a similarly amended mixture to meet a specific objective and shall be applied in a layered fashion to reduce future settling and prevent air pockets.
- Mulch shall be applied at a depth of two to three inches, near but not touching the trunk of the tree, and extending to the perimeter of the planting.
- Support systems such as guywires or stakes shall not be installed except where needed and shall be removed when no longer required for stability in the hole.
- Upon the completion of planting a watering bag shall be planted with the tree.

## ISA BMP Manual –Tree Planting (Best Management Practices)

- Timing of planting shall be determined based on the species, and the best professional opinion of the employees of or contractors working for the Village.
- All employees and contractors employed by or working for the Village shall be familiar with the following types of planting types, and when it is appropriate to use each:
  - Bare-Root: Field-grown, and dug without soil during the dormant season
  - Balled and Burlapped: Field grown and packaged with a soil ball, using burlap, twine, and a retaining basket of some kind
  - Tree Spade: Transplanted using a mechanical tree spade to hold the soil ball during transport
  - In-Ground Fabric Bag: Field grown with the root mass contained in a semi-permeable fabric bag
  - Container Grown: Grown above ground in containers of various shapes, sizes, and materials
- Trees packaged with root balls must have their first structural root within two inches of the soil surface. Trees with deeper structural roots will not perform well when transplanted and should be avoided when selecting nursery stock.
- Trees with root balls shall be handled by the ball, not the stem, to ensure no damage occurs to the root-soil interface or to the stem itself.
- Trees with leaves shall be transported with a fabric tarp to minimize desiccation and have had their root balls wetted prior to transport.
- Sites shall be tested for drainage, nutrient levels, and pH prior to planting (or prior to species selection, if possible).
- Container stock shall be removed from its container. For balled and burlapped trees, wrappings shall be left on until the tree is in the hole; wrapping shall then be removed from the 1/3 to 1/4 of the wire basket and burlap from the top of the ball. For all types, ensure any encircling (girdling) roots are removed, and root ball is shaved as necessary.
- As soil is added, wet and tamp each layer down to ensure good moisture and reduction of air bubbles.
- Do not prune trees at time of planting, unless to remove dead, dying, diseased, or cracked branches, as it may take away from root development to have the tree attempt to heal these above-ground wounds.
- The use of trunk wrap may be considered in areas with harsh winters, specifically on trees with thin bark, as determined by Village Staff for the Forestry Consultant.

## **Tree Trimming and Pruning Standards**

### **Pruning Activities**

The Village currently schedules pruning with a 5-year cycle for all trees located within the Village ROW and on Village property. Pruning locations are determined on an annual basis from the Villages tree inventory, the assistance with the Forestry Consultant and with staff assessment. Individual pruning locations outside of the Village's annual maintenance contract will be assessed as needed due to health or safety hazards to the public or to the tree.

Pruning activities will only occur during "leaf off" periods when the tree is in a dormant state and will only occur during leaf on periods to resolve health or public safety hazards to the public or the tree. Residents shall not prune any tree located on the public right of way or on Village property.

### **Pruning Young Trees**

A young tree will be 12" DBH or less. The pruning of young trees has different goals and purposes compared to mature trees. The pruning of young trees will be done to establish proper form and encourage root development. The pruning of young trees may be completed by Public Works staff or by the Village's Tree Care Contractor as necessary.

### **Pruning of Mature Trees**

A mature tree will be 12" DBH or greater. Mature trees are established in and acclimated to their sites. The pressure these trees face from their environment generally comes from above-ground factors such as pests, pathogens, man-made structures, other trees, windstorms, or lightning strikes. Pruning is performed to abate or mitigate these above-ground issues. Natural aging and/or death are additional reasons these trees are pruned. Pruning of mature trees may mitigate a short-term risk, such as after a storm; or pruning may be done to maintain a tree's long-term health and structure. In the wild, trees lose limbs to wind and disease frequently. Allowing trees to self-prune over time is not advisable in an urban setting. Safety factors may arise, and the process of pruning may bring up aesthetic issues in an urban environment. Mature public trees should only be pruned by professional Certified Arborists.

### **Private Property Trees**

The Village of Western Springs shall not be responsible for the pruning of any trees located on private property. Trees with 51% or greater of their trunk diameter on private property shall be classified as private owned trees. The Village reserves the right to prune portions of trees overhanging public property, but is under no obligation to do so, and will perform such pruning at the discretion of Village Forestry Staff and/or Forestry Consultant.

The Municipal Code also requires that that any private tree classified as a public nuisance under Title 5: Public Health and Safety, shall be remedied, including removal at the expense of the private owner within 20 days of notice.

### **Emergency Pruning**

Emergency pruning is nearly always necessary to mitigate severe risk, such as limbs which have fallen and present an imminent hazard, have impacted a structure, are interfering with a utility, or are hanging and in imminent danger of doing any of the above. Emergency and Storm Damage Pruning shall be conducted at the

discretion of the Village, with the best interests of the public in mind. This is the one occasion on which the tenets of this Plan may be left to interpretation. The Village may take whatever remedial action is practical and reasonable to mitigate such imminent risk.

### **Removal of High-Risk Limbs**

High risk limbs are those which may have defects or make a tree hazard but with removal may render the tree as low risk, without causing permanent damage to the tree. This option may also be considered when a privately-owned tree is overreaching the Village right of way. The at-risk limbs may be pruned back to the property line.

## **Tree Pruning Requirements and Standards**

### **Village of Western Springs**

- All activities directly related to the operation of a chainsaw, bucket truck, limb rigging, or tree climbing shall be performed by a qualified employee, or under the supervision of a trained forestry professional, certified arborist, or arborist trainee.
- No pruning or maintenance activity that takes place within ten feet of a power transmission line shall be accomplished by a Village employee.
- No cabling, bracing, or other such support systems should be installed in Village-owned trees, either by the Village, its residents, or any contractors. Exception may be made by obtaining prior written approval of the Village or its staff if the tree has historic or ecological value as determined solely by the Village.
- No heading, pollarding or espalier pruning shall be conducted on Village-owned trees, and no wound dressings shall be used under any circumstances.
- The need for pruning and maintenance of individual trees and parkways shall be at the discretion of the Village and its designated contractors
- The Village shall always maintain a Certified Arborist, Certified Arborist Trainee or Forestry Consultant with a certified arborist for tree pruning activities.

### **ANSI A300 - Part 1**

- A designated Arborist or Arborist Trainee shall visually inspect each tree before beginning work. If any condition is observed above and beyond the original scope of work, said condition shall be reported to the controlling authority before any work begins.
- Pruning cuts which remove a branch at its point of origin shall be made close to the trunk or parent branch without cutting into the branch-bark collar or leaving a stub.
- Pruning cuts made to reduce the length of a limb or parent stem shall be made at a slight angle relative to the remaining stem, and not damage the remaining stem. If pruning to a lateral branch, the lateral should be large enough to assume the terminal role.

- Final cuts shall be made such that the result is a flat surface, with the adjacent bark firmly attached.
- Not more than 25% of the foliage shall be removed during an annual growing season, depending on the tree species, size, age, and condition. If more frequent pruning due to utilities, vistas, or health considerations is necessary, removal of the tree should be considered as an alternative to pruning.

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- All employees or contractors directly involved with the pruning of trees shall be familiar with the following pruning types and how they are to be used in conjunction with one another:
  - **Pruning to Clean:** Selective removal of dead, diseased, detached, cracked, and broken branches
  - **Pruning to Thin:** Selective removal of small live branches to reduce crown density
  - **Pruning to Raise:** Selective removal of branches to provide vertical clearance
  - **Pruning to Reduce:** Selective removal of branches and stems to decrease the height or spread of a tree or shrub
  - **Structural Pruning:** Selective removal of live branches and stems to influence the orientation, spacing, growth rate, strength of attachment, and ultimate size of branches and stems
  - **Pruning to Restore:** Selective removal of branches, sprouts, and stubs from trees and shrubs which have been topped, severely headed, vandalized, lion-tailed, storm damaged, or otherwise damaged
- Every effort shall be made to time pruning of individual tree species to be done in accordance with best management practices for the tree species in question. All pruning work shall be done so at the discretion of Village and its approved contractors.

## Other General Maintenance

### Retaining and Consultant

It is recommended that the Village retain a professional Urban Forestry Consultant who may assist with the Village with various forestry tasks including, but not limited to contract management, bidding assistance, resident concerns, tree pruning, tree removal, tree planting, tree inventory management, tree health and risk assessment, coaching staff.

### Chemical Applications

The Village may at its discretion may implement a Plant Health Care plan to chemically control for pests or pathogens as a preventative or curative method for tree care. The Village may utilize chemical treatment to address Emerald Ash Border and Dutch Elm disease only. Chemical applications shall be identified only for those trees with exhibit no signs of disease and are identified as significant to the aesthetic and character of

the surrounding neighborhood or which are classified as “Legacy Trees”. The chemical application to any tree or any area shall not be perpetual and shall only be applied so long as to allow for tree diversity and maturity can be established within an area. The Village reserves the right to discontinue or refuse treatment for any parkway tree at any time.

No resident in the Village shall be allowed to chemically treat any trees without prior written consent from the Village for each tree application. The Village reserves the right to remove any tree regardless of treatment. All treatments must be performed by a Certified Arborist who holds an Illinois Pesticide Applicators license.

### **Water Management**

All trees planted within the Village Right of way shall be adapted to USDA Zone 4. The Village’s tree planting program shall include the installation of a watering bag on all trees planted within the Village for a period no less than 2 months or as recommended by the Village Forestry Staff or Consultant.

### **Mulch**

Mulch under trees should be spread throughout the planting bed areas or to the drip line to a recommended depth of 3” to 4” with coarse textured wood material approved for use. Mulch shall be pulled away from the base of the tree and shall not pile up against the trunk (“Volcano Mulching”).

## **Tree Preservation and Management During Construction**

### **Tree Protection Zones, Preservation Requirements and Standards**

Tree removals are considered an impact to the entire Village, whether on public or private land. It is clearly documented that larger trees provide larger benefits and as such, tree removal fees and fines are based on species and diameter. It is recognized that the planting of smaller trees does not replace the value of larger trees that are lost. It will take tens of years for that value to be replaced and for that reason efforts should be made to preserve and protect trees where they are growing. Additional details on tree removals and tree replacement guidelines can be found in Section 5-5-10 (Tree Removal), and Section 5-5-11 (Tree Replacement) of the Municipal Code.

- A tree survey shall be performed by a qualified individual prior to the beginning of any development activities on Village Right of way. The survey shall detail the size, species, and condition of each tree six inches DBH and greater.
- Per Section 5-5-13 (Tree Preservation and/or Removal Plan for Significant Removals, Construction and/or Development) of the Municipal Code, a Tree Survey and a Tree Protection Plan shall be submitted to the Village and all relevant architects, engineers, and workers, detailing the following:
  - Trees to be removed
  - Trees to be preserved

- Location and size of the Tree Protection Zone (“TPZ”) for each tree
- The Tree Protection Zones for each tree shall be visibly delineated by the site engineer, using six-foot (6’) chain link fence, or as directed by the Village through the site plan development and review. When such a delineation is not possible, all workers on site shall be made aware of the TPZ verbally.
- The following practices are prohibited within protection zones:
  - Storage of construction materials, debris, or excavated material.
  - Moving or parking vehicles or equipment.
  - Erection of sheds or structures.
  - Impoundment of water.
  - Excavation or other digging unless otherwise indicated.
  - Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
  - Direct vehicle or equipment exhaust toward protection zones.
  - Heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

### **Protection Zone Fencing**

Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or near street intersections, drives, or other vehicular circulation. All protection zones shall be free of weeds and trash. Protection-zone fencing shall be staked, and signage shall be in good condition as acceptable to the Village and removed when construction operations are complete, and equipment has been removed from the site.

- Protection-zone fencing shall not be removed, even temporarily, to allow deliveries or equipment access through the protection zone.
- Temporary access is permitted subject to preapproval in writing by the Village’s Forestry staff, Village Engineer, Forestry Consultant, or their designee if a root buffer effective against soil compaction is constructed as directed by a certified arborist. Maintain root buffer so long as access is permitted.

### **Excavation**

Excavate at edge of protection zones by hand by not damaging roots unless otherwise indicated.

Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches (75 mm) back from new construction and as required for root pruning.

Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil. **Root Pruning shall not be permitted unless approved in writing by the Village or its Forestry Consultant**

### **ANSI A300 - Part 5**

- Tree management plans and specifications for tree management shall be written and administered by a certified arborist qualified in the management of trees and shrubs during site planning, development, and construction. Such activities may include, but are not limited to demolition, grading, building construction, walkway or roadway construction, excavation, trenching and boring, or other such activity which has the potential to negatively impact trees.
- The management of trees and shrubs shall be incorporated into the following phases of the site development process:
  - Planning
  - Design
  - Pre-Construction
  - Construction
  - Landscape
  - Post-Construction
- During the Planning phase, an assessment of tree and shrub resources on the site shall be performed by a certified arborist. The assessment shall identify the species, condition, and size of each tree and shall be incorporated into the site design. Trees to be retained or protected shall appear on site design maps. Trees on neighboring property which could also be impacted should also be considered.
- During the design phase, a tree management report shall be developed for trees to be conserved on the site, and shall be included in the construction plans and specifications, which may include, but are not limited to:
  - Trees to be retained
  - Tree and Root Protection Zones
  - Tree Protection Zone barriers
  - Tree Protection plans
  - Soil erosion control
  - Soil compaction controls

- Staging and storage areas
- Other relevant on-site activities
- Grading and demolition plans shall include all trees to be retained and removed, as well as the tree protection plans for working around trees to be retained. Plans shall also include equipment routes for avoiding the TPZ. Consequences for non-compliance shall be specified.
- During the pre-construction phase, all tree protection plans shall be effectively communicated to all parties involved with the site development, and tree protection zone barriers shall be in place prior to the beginning of any construction activities.
- The TPZ shall be delineated around all trees to be protected during construction, and shall be based on the size, species, and condition of the tree and its root system. Six to 18 times the diameter of the tree is generally considered to be acceptable. Deviations from this diameter may be made at the discretion of a certified arborist. Activities which could damage tree roots or compact soil should be avoided in the TPZ
- Fencing or other visible barriers to the TPZ shall be installed prior to site clearing, grading, and demolition, and maintained throughout the construction and landscaping phase. When this is not feasible, alternate methods may be considered.
- During the construction phase, compliance with tree protection plans shall be monitored by a certified arborist, and any damage to tree barriers or trees, or non-compliance shall be reported to the project manager or owner, or other controlling authority.
- When removing vegetation or pavement during demolition, equipment used adjacent to the TPZ shall be specified to avoid damage to the tree and the surrounding soil, and soil protection measures shall be in place prior to vehicle or heavy traffic in or near the TPZ.
- Storage or disposal of construction materials or hazardous materials shall not occur in the TPZ.
- Fill within the TPZ shall not be permitted without mitigation to allow for proper air and water availability to existing roots. If fill cannot be avoided in the TPZ, compaction of fill shall be avoided, and consideration shall be given to a permanent well installation to protect the tree and its roots.
- During the landscape, irrigation, and lighting phase, levels of compliance shall be documented and reported by a certified arborist. Non-compliance shall be reported to the project manager.
- During the post-construction phase, a remedial and long-term maintenance plan shall be specified for existing and new landscaping, to ensure success of preservation efforts and newly planted landscaping.
- Pruning shall be considered to reduce wind sail when necessary. It should not be considered to compensate for root loss.
- Mulch shall be applied to as much of the tree protection zone as possible, to create a favorable soil environment for root recovery after construction activities.

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- A cost-benefit analysis shall be conducted during the planning phase. In some cases, money may be better invested in tree planting post-construction.
- The species and age of tree shall be evaluated by a certified arborist, so that trees in good condition with desirable characteristics are preserved, but those in poor condition or with undesirable characteristics are not.
- A tree inventory and tree management report shall be conducted during the planning phase, and a certified arborist shall work closely with developers to ensure best management practices are being met for both parties.
- Effort shall be made to retain groups of trees, such that there is a wind and solar buffer around the highest quality trees if possible.
- The Critical Root Zone (“CRZ”) is the area around the tree trunk where roots essential for tree health and stability are located. A Tree Protection Zone (“TPZ”) is an arborist-defined area around the tree which should include the CRZ, as well as additional area to ensure future stability and growth. The TPZ is subject to the professional opinion of the certified arborist.
- An attempt shall also be made to preserve native soil for landscape planting as native soil with horizons and development is preferred over fill or black dirt.
- If a sufficient TPZ cannot be established, a 6” to 12” layer of hardwood mulch, 3/4-inch plywood mat over a four-inch layer of hardwood mulch, or other such measures shall be temporarily installed over the CRZ to prevent root and soil compaction.
- Trunk protection shall be installed on trees very close to construction activities, and should consist of 2x4 or 2x6 planks, strapped snugly to the tree trunk with wire or other strapping, preferably with a closed-cell foam between the trunk and the planks.
- When roots over one inch cannot be avoided, they shall be pruned, not left torn or crushed. Acceptable methods of pruning are:
  - Excavation using supersonic air tools, pressurized water, or hand tools, followed by selective root cutting.
  - Cutting through the soil along a predetermined line with a tool specifically designed to cut roots.
  - Mechanically excavating the soil (backhoe or similar) and selectively pruning remaining roots.
- Wells, tree islands, retaining walls, and other such structures or strategies shall be considered as alternatives to any cut/fill work in the CRZ or TPZ.

- Monitoring shall take place during construction and post-construction phases, and any non-compliance should be reported to the proper controlling authority right away, so that timely remediation or mitigation efforts may be undertaken.

## Legacy Tree Definition and Management

Large and old trees are important features within forested ecosystems serving a variety of structural and functional roles. Legacy trees display characteristics that distinguish them from younger trees and these characteristics make them unique. A Legacy Tree shall be defined as a Village owned and maintained tree with a minimum of 16" DBH or within 25% of the current champion size for the species within the Village, with a condition rating 1 in the Village's tree inventory. A condition rating of 1 indicates that the Tree has no observable defects, wounds, diseases, and has textbook perfect form for the species as identified by the Village or its Tree Consultant. The loss of such a tree would represent a significant detrimental impact to the character or nature of the surround neighborhood and area.

Legacy trees shall be protected from private development under Section 5-5-3 (Preservation) of the Municipal Code.

## Tree Risk Assessment Policy

These Risk Assessment Levels are based on the International Society of Arboriculture ("ISA") Tree Risk Assessment Qualification ("TRAQ") protocols, as well as the ANSI A300 Part 9 (Tree Risk Assessment) Standards. These levels are general guidelines, and as such, may be open to a certain degree of interpretation. All trees in the Village are assessed for risk during the inventory, however these assessments were rapid assessments and as such do not represent any formal level of TRAQ risk assessment and are not legally binding descriptions of risk. They are instead intended to provide the Village with data showing a need for a more detailed assessment on trees assessed to have an elevated risk level such as High or Extreme risk.

The Village maintains a tree inventory detailing the species, size, and condition of all trees on the public right of way. This UFMP recommends that all trees identified in Condition 4 (Fair to Poor) or worse be audited on an ad hoc basis. During these audits, the Village or the Forestry Consultant shall inspect these trees and shall identify trees posing an unacceptable level of risk. Such trees shall either be scheduled for a more detail risk assessment (Level 2 or 3) or shall be mitigated either by pruning or removal as soon as practical following the assessment.

Staff shall conduct limited visual assessments on an ad hoc basis during the normal course of daily forestry operations.

Upon notification from a resident the Village shall perform a Level 2 or Level 3 Risk Assessment. If the Condition rating is found to be of Condition 4 or worse the Village or the Forestry Consultant shall determine the appropriate mitigation measures, if any.

All trees determined to need mitigation actions shall be documented utilizing the Village's Work Order system. Documentation shall include the date of the assessment, the species, size, condition, and brief narrative of the

assessment. A minimum branch diameter of 3 inches, by ocular estimate, shall be the standard to which the risk assessment policy applies.

### **Level 1 Assessment – Limited Visual Assessment**

A limited visual assessment has a basic analysis of obvious physical defects and condition. The assessor walks to or drives by the tree, assesses it for defects, evaluates the risk posed by the subject tree, and reports the results of the assessment. Often, prior to a recommendation, a more detailed (Level 2 or Level 3) assessment will be required to gather additional data.

### **Level 2 Assessment – Basic Assessment**

A basic assessment requires a 360-degree walkaround, and may include the use of simple tools, such as binoculars, magnifying lenses, mallets, probes, and trowels or shovels. The goal is to get a more complete picture of the tree in its environment.

### **Level 3 Assessment – Advanced Assessment**

An advanced assessment provides detailed information about specific tree parts, targets, and risk associated with each potential interaction. It typically requires specialized training and equipment, such as bucket trucks, resist graphs, tomographs, and other equipment. This is the most detailed and time-intensive type of assessment.

## **Dutch Elm Disease and Emerald Ash Borer**

Based on the data collected, a review of current operational policies and resources, and current thinking regarding Emerald Ash Border (“EAB”) and Dutch Elm Disease (“DED”) management, the following recommendations shall guide a long-term, sustained approach to managing Village’s urban forest. Specific provisions to the policy are defined under Section 5-5-17: Dutch Elm Disease and Emerald Ash Border of the Municipal Code

- Remove trees that exhibit visual indicators of EAB and DED infestation or that had significant structural issues.
- Systematically reduce the ash population as part of the long-term and proactive management policy. Develop an In-house/Contractor strategy to maximize the number of trees removed while minimizing overall aesthetic impact to neighborhoods.
- Generate a replacement list based on targeted future removals or vacant spaces created by the removals. Proactively replant and diversify areas with high percentage of Ash populations to allow time for maturity in the surrounding urban forest prior to Ash removals whenever possible.
- Inspect all ash and elm trees annually and generate a list of all poor conditioned trees.

- Codify the Village's response to EAB on private property.
- Engage the community through a multi-leveled program of outreach to residents regarding the status of EAB in the Village.
- Consider chemical treatment of the ash or elm tree in excellent condition and which shows no signs of EAB or DED infestation. The goal of any treatment practice is not to indefinitely prolong the life the tree, but to manage the diversification of the tree stock in the surrounding area to minimize the overall impact when the targeted tree is scheduled for removal.

Green ash was one of three or four species that were heavily emphasized by midwest communities as the replacement species for the American Elms lost to Dutch Elm Disease. The concept of species diversity was minimally understood at that time. Hindsight has proven that the planting of a few species to replace the monoculture elm population was not good practice. Given the current treatment methods available, both the United States Department of Agriculture and the Illinois Department of Agriculture anticipate the eventual loss of all ash trees within infested areas.

## Conservancy or Tree Preservation Areas

A tree conservancy or tree preservation area, as defined in Section 5-5-2 (Definitions) of the Municipal Code, is an easement area designated by the Village Board, after input from the Director, or their designee, and a recommendation by the Properties and Recreation Committee to protect specific trees, groups of trees or locations in the interest of amenity or functionality. A Village designated tree conservancy or preservation area prohibits the cutting down, topping, lopping, uprooting, willful damage, and willful destruction of trees without the Director's written consent. Restitution and restoration for violation of a tree conservancy or tree preservation area is governed by Title 5 (Public Health and Safety), Chapter 5 (Trees and Shrubs) of the Municipal Code, and, in Section 5-5-12 (Special Rules for Conservancy or Preservation Areas) of the Municipal Code.

## Additional Action Items

- Develop 10-year urban forestry strategy with one (1), five (5), and ten (10) years goals, including forestry budget for each of those commitments.
- Identify preferred tree list.
- Develop Legacy Tree list.
- Develop Strategy for maintenance and education for private property trees and identify feasibility of volunteer program for private property management.

## Conclusion

The Urban Forestry Management Plan is designed to be a flexible document for the care and management of the Village's trees in an urban environment. The purpose of this plan is to provide guidance to both the Village and its residents for the care of trees in all aspects of the urban environment. The Village Properties and Recreation Committee shall serve as the recommending body to aid, and direction to the Village regarding the preservation, planting, management, and protection of trees. The Committee shall develop and recommend implementation of an Urban Forest Management Plan for guidance on urban forestry issues. The Committee shall also meet to provide recommendations to the corporate authorities of the Village after consideration of Village policies and amendments to rules and regulations of the Village, Village policies and the Village Code relating to the Urban Forest Management Plan and the Municipal Code.

Comments or questions regarding this Plan may be directed to the Director of Municipal Services or to the Properties and Recreation Committee at [www.wsprings.com](http://www.wsprings.com).