

Village of Park Ridge Urban Forest Management Plan



May 11, 2021

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Inventory data and this management plan are provided by the University of Wisconsin – Stevens Point 2021 urban forestry class thru the inventory based on visual recording at the time of inspection. These visual recordings do not include individual tree testing or analysis and do not include aerial or subterranean inspection for tree risk. The University of Wisconsin – Stevens Point 2021 urban forestry class is not responsible for discovery or identification of hidden or otherwise unobservable hazards. The students cannot detect every condition that could possibly lead to the structural failure of a tree and does not provide guarantee or warranty that a tree will or will not fail or that a tree will be healthy and safe for a specified amount of time. Tree records are accurate only at the time of inventory due to changing conditions. Right-of-way measurements are estimates only and it is the responsibility of the City/Village that this report is prepared for to assure that all trees were inventoried.

Executive Summary

This urban forestry management plan is developed for Village of Park Ridge, Wisconsin. The plan was created by UWSP urban forestry students under instruction from Dr. Richard Hauer. UWSP urban forestry students completed a tree inventory to evaluate existing urban tree populations at the Village of Park Ridge and make management recommendations for future urban forest maintenance.

According to the U.S. Census Bureau, the Village of Park Ridge had a population of 573 in 2019. The primary race was White (95%). The median age was 45 and the sex ratio (males per 100 females) was 90.4. The 2019 unemployment rate was 3.4%. The community government structure of the Village of Park Ridge is represented by a Village Board which includes one village president, four village trustees, one village treasurer, and one village clerk. Departments and committees of the village include: Village Board, Fire Department, Comprehensive Planning Committee, Zoning Committee, and Zoning Board of Appeals. Actions from the Comprehensive Planning Committee or Fire Department may influence tree growth and longevity (e.g. tree removal due to fire hazards). The village lacks specialized forestry department or any equipment for tree work. All tree works are contracted. There is one tree ordinance for the community: Ordinance 10.08 - Trees and Shrubs: Public Nuisances Affecting the General Welfare (Diseased and Infected Trees) (R68.10).

The Village of Park Ridge is surrounded by Stevens Point and is in 4b USDA Hardiness Zone (UW-Madison Horticulture Division of Extension). The average value of annual mean temperature over 30 years (1991-2020) is 44.2 F° (National Oceanic and Atmospheric Administration, Appendix B). The mean annual total liquid precipitation over 30 years is 34 inches (NOAA, Appendix B). The majority of Park Ridge has Plainfield loamy sand (PfA).

We used Miller Planning Model to design our management plan, assess current tree conditions, and analyze results. The Miller Planning Model is based on four fundamental questions: what do we have, what do we want, how do we get what we want, and evaluation (feedback). The goals are to ensure public safety, maintain the current tree population, increase species diversity and age structure, promote public participation, and educate the public benefits of having trees. Tree attributes that were collected during the inventory include:

tree name, trunk diameter at breast height (DBH), condition rating, pruning needs, removal priority, address, terrace width, overhead wires existence, and comments.

Overall, 28 unique species, 16 separate genera, and 13 different families comprise the current street tree population of Park Ridge. The species diversity of the street tree population consists most commonly of red maple (17%), white spruce (10%), red pine (7%), red oak (7%), and Siberian elm (7%). At the genus and family level, maples, oaks, pines, and spruces are the most common. To increase biodiversity and resilience of the population, we recommend tree species from other genus and families for all plantings in the next five years. Honey locust, paper birch, and Japanese tree lilac are some candidates to consider.

Overall, 97% of the street trees were given a condition rating of fair to excellent. The remaining trees are either dead or in poor condition and require, in most cases, removal of the tree. The average diameter of trees was found to be 14.9 inches measured at a height of 4.5 feet above the ground. The general distribution of diameter sizes and condition ratings suggest a well-established urban forest. To maintain a tree population of all ages and prevent a large loss of canopy as mature trees die out, it is necessary to plan for and plant trees every year. The business district provides the best opportunity for continued growth of the village's urban forest. There is space for six trees to be added along Sunset Blvd, in front of Precision Cellular and Blinds and Designs. Additional vacancies will become available as dead/dying trees are removed. Routine pruning will also help to maintain the health and safety of the current urban forest population. 44% of trees evaluated require routine pruning (PR), 31% require a lift (PL), 17% safety pruning (PS), 3% vision interference pruning (PV), and 2% prune training of young trees (PT).

Of the 227 trees in total, 10 trees were suggested with high priority for removal. Diameter inch method was used to calculate costs for removal. Trees were categorized by different DBH groups, each of which has a different price level per diameter inch. Under a 2% annual mortality rate, the annual removal cost was \$2500 in the first year and \$1900 in the future years. Using the same method and 2% mortality rate, the annual management costs for tree care was \$7000, including all costs except removal costs and planting costs. To maintain tree canopy cover, planting would occur on current vacant sites and locations where trees would be removed due to mortality. Planting bigger trees come with greater visual impact, but the price

is also higher. Planting smaller trees is cheaper, but they tend to snap more easily or get vandalized. We recommend 80% of newly planted trees be bigger balled & burlapped (B&B) trees, with the remaining 20% to be planted as bare root (BR) seedlings. Based on the local climate and consideration of increasing diversity, we listed several tree species as candidates for future plantations. Using the McPherson's method, the annual planting cost would be \$1700. We also recommend installing a rain garden near Park Ridge Village Hall. A rain garden is aesthetically pleasing, and it helps reduce surface runoff. Rainwater is collected and then infiltrates into the ground, which is very useful in stormwater control. The ideal size of a raingarden near Village Hall would be around 100-300 square feet, 3-5 inches deep, and 10 feet away from the building. The cost of raingarden installation can be subsidized by urban forestry startup grants. In aggregate, the total annual budgets in the first five years considering 2% inflation, would be \$11,200, \$10,800, \$11,000, \$11,200, and \$11,500.

Public education and participation would play a significant role in a successful urban forestry program. The Arbor Day Foundation is a non-profit membership organization that provides such opportunities. Tree City USA is one of their programs that let the public understand the importance of having urban tree canopy in communities. It also provides guidance for basic tree care. An additional tool for engagement is the Champion Tree Program held by the Wisconsin State DNR. Activities such as annual celebrations can encourage the public to care for and protect trees in their community.

Introduction

Purpose and Scope

The purpose of this plan is to provide a street tree inventory and management considerations for the current trees within the Village of Park Ridge. Management considerations will consider what is currently known about the population, goals for improving the urban forest, and strategies on how to achieve these goals. The scope of this management plan, however, will go far beyond what is currently planted, to provide recommendations on how and where to focus management efforts to maintain health and enjoyment of this urban forest for the future.

Proper management and planning of the urban forest improves the sustainability of cities, enhances quality of life for residents, and provides numerous ecosystem services. These ecosystem services provide economic benefit to the city through shading/cooling effects, reduction in stormwater management needs/costs, and increased property values. Investment and maintenance are required for urban forest management. However, the benefits outweigh the costs, and funding support is available for establishing new programs.

Community Capacity

The Village of Park Ridge lack a dedicated parks or forestry department. However, in chapter 10 of the village's municipal code there is a section listed for trees and shrubs (Appendix A). Ordinance 10.08, Trees and Shrubs – Public Nuisances Affecting the General Welfare (Diseased and Infected Trees) (68.10), states that it is Park Ridge's policy to "regulate and control the planting, removal, maintenance, and protection of trees and shrubs upon or in all areas of the Village...". The purpose of this regulation is stated to be for aesthetics, human safety, health of community trees/shrubs, and to provide optimal tree canopy cover. This applies to trees and shrubs in public right of way and any tree or shrub on private property that is determined (by the Village Trustee) to be a danger to any person or property.

Section V of the ordinance provides detail regarding pruning and removal requirements for trees and shrubs within the public right of way. Any shrubs or hedges taller than 36 inches are not permitted within a clear vision triangle within 25 feet of a street corner. Any trees that are

within this 25-foot vision triangle of a street corner must be pruned to provide at least 16 feet of clearance. All branches must be pruned back from any streetlamps to not obstruct the lighting of sidewalks or lighted intersections. At least 8 feet of clearance is required above streetlamps and 16 feet above public streets. In addition to the clearance requirements listed, owners must also remove dead, broken, or decayed tree branches that show a potential for failure and are deemed hazardous (high risk) to the people of Park Ridge. The Village of Park Ridge will step in, if necessary, to do this on private property if any of the above requirements are not met.



Village of Park Ridge Village Hall & Fire Department

Community History

The Village of Park Ridge was incorporated in 1938. Iverson Park is located below the ridge along the village's eastern border, thus giving the name Park Ridge in reference to the geography of the area and its proximity to this nearby landmark. One of the primary reasons for incorporation of the village of Park Ridge was to provide options for the 66 school-aged children within the area. In 1938, Park Ridge had 172 residents in total, children making up 38% of the population. It makes sense then, that providing additional options for school and transportation to school be a top priority. They created a three-member school board and started a village-owned bus service to transport kids safely down Highway 10. The second reason for incorporation was to create regulatory and zoning ordinances, like requiring building permits for new construction, regulating tavern hours, and prohibiting free-roaming pets and livestock. The third reason was to provide improvements, starting with a community hall. The village hall provides use for a variety of community events and was a focal point of the community very early on.



Environmental Considerations

Located at 44° 31' 12" N, 89° 32' 47" W, the Village of Park Ridge is surrounded City of Stevens Point. According to National Oceanic and Atmospheric Administration (NOAA, Appendix B), the calculated average value of the annual mean temperature of Stevens Point over 30 years (1991-2020) is 44.2 F°. The Village of Park Ridge is in Hardiness Zone 4b. The mean extreme maximum temperature of Stevens Point over 30 years is 92 F°. The mean extreme minimum temperature of Stevens Point over 30 years is –18 F°. The mean annual total liquid precipitation over 30 years in Stevens Point is 34 inches, and the mean annual total snowfall is 47 inches. According to Web Soil Survey, the majority of Park Ridge has plainfield loamy sand (PfA) (Fig. 1).

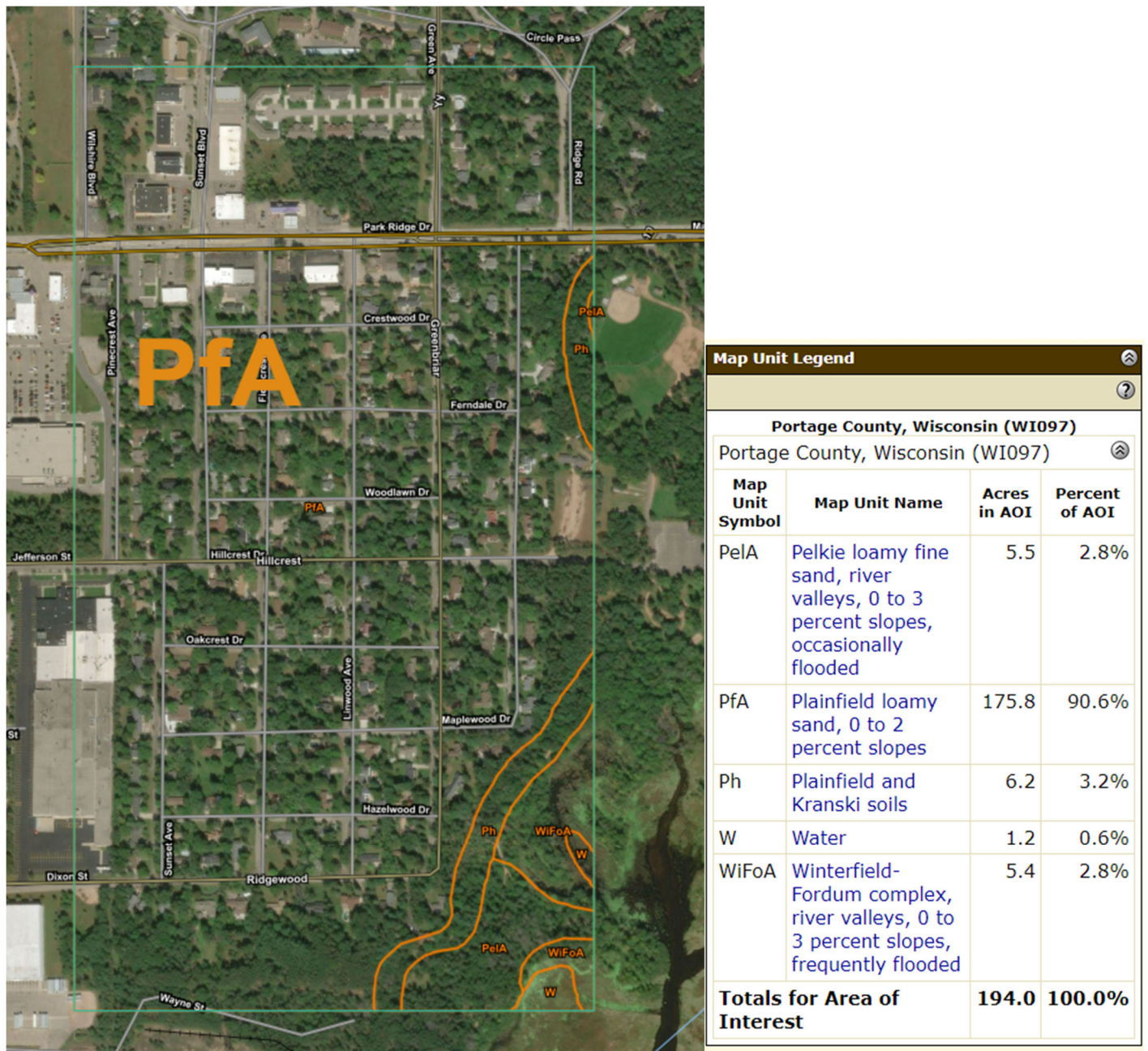


Figure 1. Soil types of the Village of Park Ridge according to the Web Soil Survey.

Miller Planning Model

Having a clear and detailed plan saves time in collecting information and making relevant management strategies. We used the Miller Planning Model (Fig. 2) to design our management plan, assess tree conditions, and evaluate the results. Miller Planning Model is composed of four steps, as follows:

1. What do we have?

First, we need to know the location of our study place and identify where we currently are.

In this case, UWSP urban

forestry students conducted a

tree inventory in Spring 2021. To evaluate the public tree population, data was collected for tree species, trunk diameter at breast height (DBH), location, tree condition rating, pruning/removal needs, and if overhead wires exist above trees.

2. What do we want?

Next, we need to determine management goals. Each city/village may have its own goals, different from others. This step needs involvement from local officials and opinions from local communities. In this case, we want to ensure public safety on all public land and streets in the Village of Park Ridge. Therefore, maintaining tree health, monitoring pests, and identifying & preventing tree failure play a significant role in ensuring public safety and aesthetic beauty of the community. Fiscal responsibility should also be considered from the planning process to the actual management.

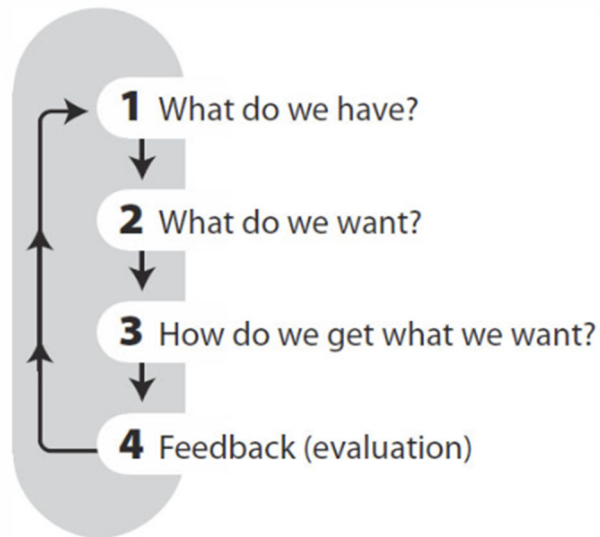


Figure 2. Miller Planning Model

3. How do we get what we want?

This step includes strategies and approaches developed for our management plan.

Some common considerations are: what's the scale of the inventory? Where, when, and who will conduct the inventory? What's the budget? How many attributes/how much information do we need to collect? What's the most efficient way to collect and manage our data?

4. Evaluation (Feedback)

An urban forest management plan is created based on an assessment of current tree conditions. However, tree conditions are dynamic, and they change over time. Both biotic factors (e.g. tree senescence, exotic pests) and abiotic factors (e.g. unexpected rainstorm, development) may completely change conditions of current tree population. Therefore, it's essential to periodically evaluate whether the management plan needs to be updated. For example, a 3-5 year inspection cycle may suggest the need for updating the tree inventory. Moreover, comments from community residents may also provide useful information on the management plan.

Tree Management Goals and Objectives

Successful urban forest management not only depends on having an adequate understanding of the current tree population, but also establishing prospective and practical goals and objectives for future conditions. We assessed current tree conditions of the Village of Park Ridge, incorporated results with intents and purposes from the tree ordinance, and determined that the goals of our management plan are:

- Ensure public safety, prevent potential damage from trees
- Maintain the current urban tree populations
- Increase species diversity and age class diversity

- Maintain and improve aesthetic values of the urban forest
- Educate the public on the benefits of maintaining urban tree populations

To assist with achieving the goals, our proposed objectives include:

- Promote public safety by removing dead and high-risk trees and pruning branches identified as high risk for failure to reduce -injury or property damage
- Establishing an annual inspection cycle for diseases/pests control
- Establishing a 5-year inspection cycle for pruning
- Plant new trees annually to increase species diversity and age class diversity
- Maintain tree canopy cover at 50% or higher over the community
- Organize community activities and provide resource materials to educate the public on urban forest issues

Tree Inventory Assessment

Species Diversity

There was a total of 227 street trees inventoried for this management plan. Of those 227 trees, there are 28 unique species, 16 separate genera, and 13 different families represented. Red maple (*Acer rubrum*) is the most common tree species, representing 17% (39 trees) of the street tree population. The other most common tree species include, white spruce (10%), red pine (7.0%), red oak (7.0%), Siberian elm (7.0%), northern pin oak (5.3%), northern white cedar (5.3%), basswood (4.8%), white pine (4.4%), and bur oak (4.4%) (Fig. 3). The most common tree genera include maple (24%), oak (20%), spruce (16%), pine (13%), and elm (8%) (Fig. 4). The most common tree families represented in this inventory include the pine/spruce (27%), maple (23%), beech/oak (19%), and elm (8%) families (Fig. 5).

A 5-10-15 rule can be used when choosing which trees to plant. No more than 5% of any given species, 10% of any genus, or 15% of any family should be planted to provide adequate levels of biodiversity. This is not a rigid rule, but red maples and white spruce should be avoided for any plantings in the next five

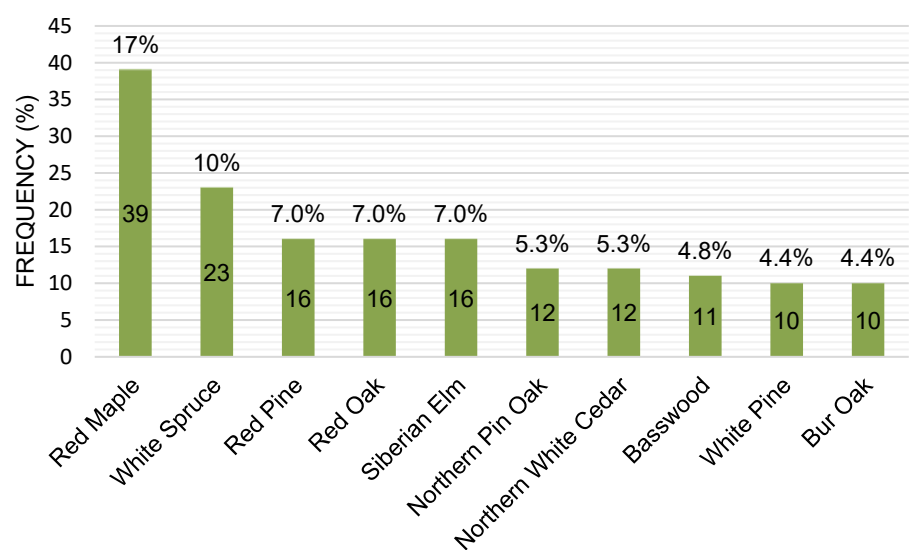


Figure 3. The 10 most common street trees in the Village of Park Ridge

years, as these species make up 17 and 10% of the population, respectively (Fig. 3). At the genus level, maples (*Acer*) and oaks (*Quercus*) most notably exceed this recommendation (Fig. 4). Going a step further to the family level, the pine and spruce family (*Pinaceae*) and maple family (*Sapindaceae*) most notably exceed this recommendation (Fig. 5). Any plantings in the next five years should avoid oaks, maples, pines, and spruces to increase the overall level of biodiversity and robustness of the population. If you do choose to plant from one of those families, ideally avoid red maple, white spruce, red pine, and red oak until they become

a smaller percentage of the total population. Included is a list of all the tree species found in Park Ridge organized by family (Table 1).

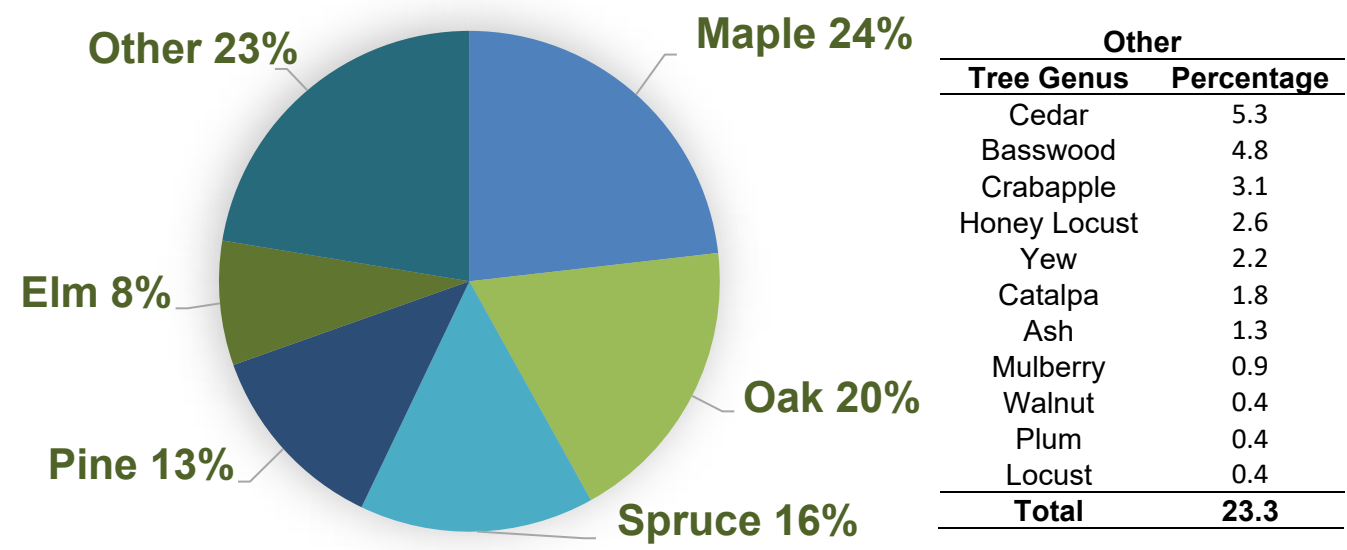


Figure 4. Park Ridge street tree diversity composition at the genus level. Maple (*Acer*) represent 24%, Oak (*Quercus*) 20%, Spruce (*Picea*) 16%, Pine (*Pinus*) 13%, and Elm (*Ulmus*) 8%. 11 other genera combine to make up the remaining 23%.

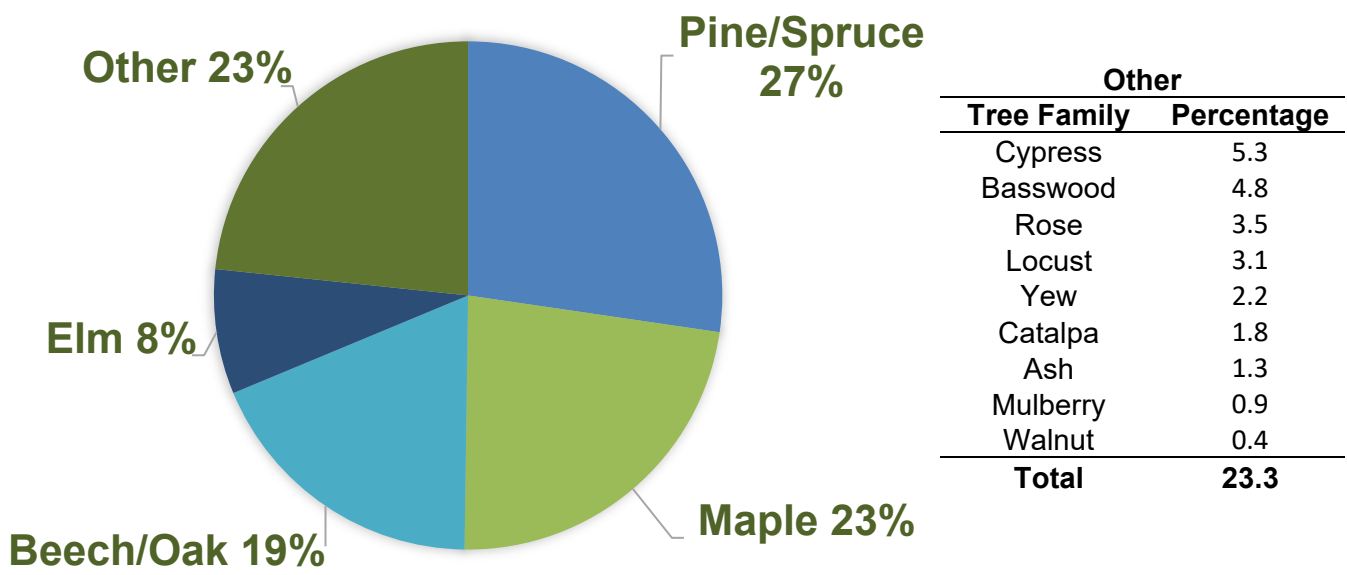
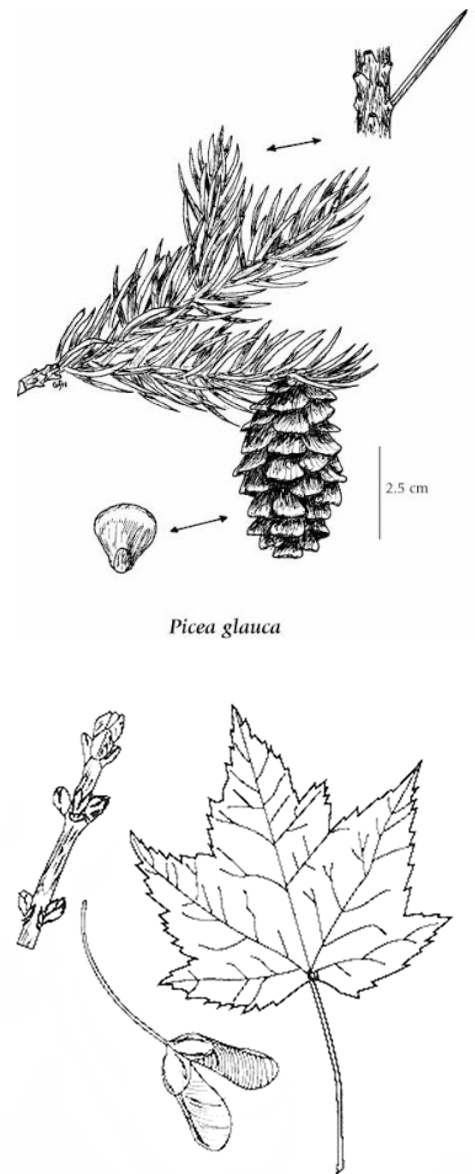


Figure 5. Park Ridge street tree diversity composition at the family level. Pine/Spruce (*Pinaceae*) represent 27%, Maple (*Sapindaceae*) 23%, Oak (*Fagaceae*) 19%, and Elm (*Ulmaceae*) 8%. 9 other families combine to make up the remaining 23%.

Biodiversity of the trees being planted in the public right of way should be a consideration when choosing what trees to plant. However, it should be noted that street trees that we inventoried only account for a portion of the urban forest within Park Ridge. Private trees and additional public park trees make up the rest of the urban forest. Due to the high level of canopy cover (~50%) noted throughout the village, knowledge of tree species in these areas would provide additional consideration when choosing future trees for planting.

Table 1. The Village of Park Ridge street tree species organized by family

Family	Genus	Species	Common Name
Bignoniaceae	<i>Catalpa</i>	<i>Catalpa speciosa</i>	Catalpa
Cupressaceae	<i>Thuja</i>	<i>Thuja occidentalis</i>	Northern White Cedar
Fabaceae	<i>Robinia</i>	<i>Robinia pseudoacacia</i>	Black Locust
	<i>Gleditsia</i>	<i>Gleditsia triacanthos</i>	Honey Locust
Fagaceae	<i>Quercus</i>	<i>Quercus macrocarpa</i>	Bur Oak
	<i>Quercus</i>	<i>Quercus ellipsoidalis</i>	Northern Pin Oak
	<i>Quercus</i>	<i>Quercus rubra</i>	Red Oak
	<i>Quercus</i>	<i>Quercus alba</i>	White Oak
Juglandaceae	<i>Juglans</i>	<i>Juglans nigra</i>	Black Walnut
Moraceae	<i>Morus</i>	<i>Morus alba</i>	White Mulberry
Oleaceae	<i>Fraxinus</i>	<i>Fraxinus pennsylvanica</i>	Green Ash
Pinaceae	<i>Pinus</i>	<i>Pinus banksiana</i>	Jack Pine
	<i>Picea</i>	<i>Picea abies</i>	Norway Spruce
	<i>Pinus</i>	<i>Pinus resinosa</i>	Red Pine
	<i>Pinus</i>	<i>Pinus sylvestris</i>	Scotch Pine
	<i>Picea</i>	<i>Picea omorika</i>	Serbian Spruce
	<i>Pinus</i>	<i>Pinus strobus</i>	White Pine
	<i>Picea</i>	<i>Picea glauca</i>	White Spruce
	<i>Pinus</i>	<i>Pinus strobus</i>	White Pine
Roseaceae	<i>Prunus</i>	<i>Prunus serotina</i>	Black Cherry
	<i>Malus</i>	<i>Malus spp.</i>	Crab Apple
Sapindaceae	<i>Acer</i>	<i>Acer platanoides</i>	Norway Maple
	<i>Acer</i>	<i>Acer rubrum</i>	Red Maple
	<i>Acer</i>	<i>Acer saccharinum</i>	Silver Maple
	<i>Acer</i>	<i>Acer saccharum</i>	Sugar Maple
Taxaceae	<i>Taxus</i>	<i>Taxus spp.</i>	Yew
Tiliaceae	<i>Tilia</i>	<i>Tilia americana</i>	Basswood
Ulmaceae	<i>Ulmus</i>	<i>Ulmus americana</i>	American Elm
	<i>Ulmus</i>	<i>Ulmus pumila</i>	Siberian Elm



Condition Class

Condition class ratings are given to help plan for current and future needs in managing the health of the tree population. The ratings are based on an assessment of tree structure, health, and form. Multiple rating systems exist for conducting tree health assessments. The Council of Tree and Landscape Appraisers (CTLA) scoring system was used to help classify trees for this inventory. Condition ratings between 0-19% indicate the tree is dead or near dying and is likely in need of removal. Condition ratings between 20-39 correlate with poor tree health. Trees in this category are experiencing major health or structural issues and would need intervention to improve longevity. Condition ratings between 40-59% are considered 'fair' and are experiencing some problems or limitations but are otherwise expected to live for a long time. A 60-79% condition rating is considered 'good'. These trees are expected to live a long life and have only minor deficiencies or have not fully matured. 80-100% condition rating is considered 'excellent'. These trees show no obvious physical or health infirmities and are nearly perfect examples of a healthy, mature tree. Four trees in the Park Ridge inventory are considered dead, three are considered poor, 46 fair, 129 good, and 45 excellent (Table 2, Fig. 6). The seven trees in the dead and poor categories would be the highest priority for removal and further attention. Six of these seven have been marked as high priority for removal. The remaining one, is a red maple with dead limbs in the canopy and needs immediate attention for removal of these. The remaining 97% of the street trees were found to be in fair, good, or excellent conditions. The average condition rating for the entire population was 66%.

Table 2. Distribution of the Village of Park Ridge street trees by condition code and relative percentage

Condition Code	Condition %	Frequency	% of Population
Dead	0-19	4	2
Poor	20-39	3	1
Fair	40-59	46	20
Good	60-79	129	57
Excellent	80-100	45	20

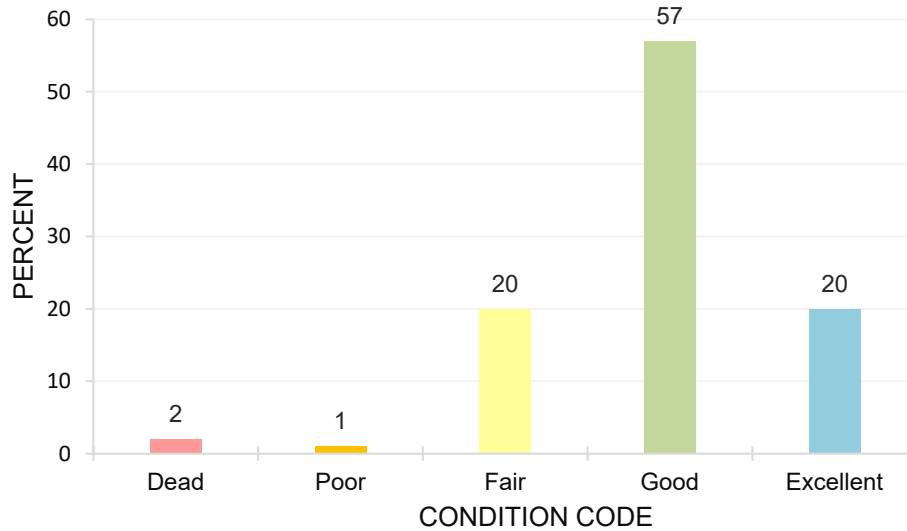


Figure 6. Village of Park Ridge street trees sorted by diameter/DBH. Each grouping infers the number of trees in that class or smaller (e.g. diameter class 6 = 3.1 through 6.0)

Diameter Class

Trunk diameter of trees was measured at a standard 4.5 feet from the ground. The average tree diameter for the street trees in the Village of Park Ridge is currently 14.9 inches. Diameter classes were created as 3-inch groupings to represent the general age distribution present (Fig. 7).

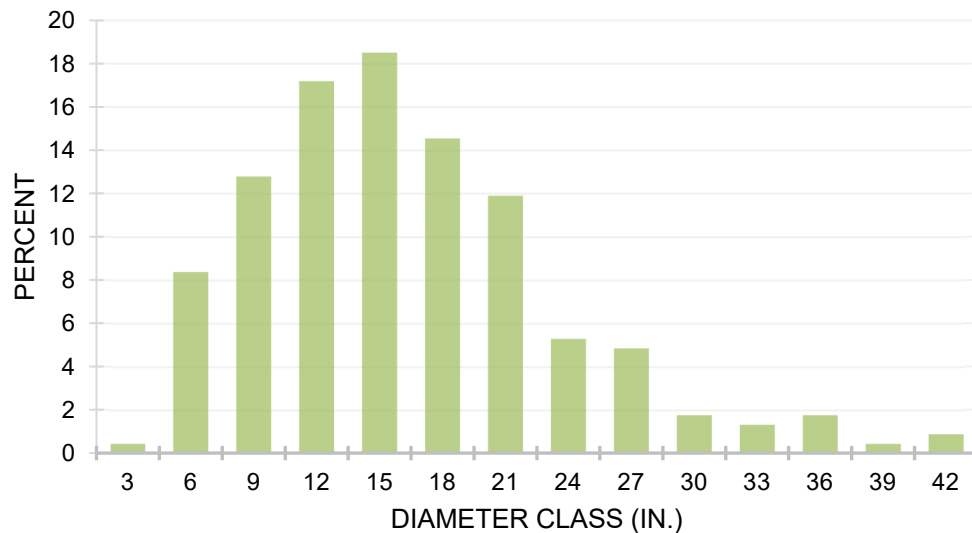


Figure 7. Village of Park Ridge street trees sorted by diameter/DBH. Each grouping infers the number of trees in that class or smaller (e.g. diameter class 6 = 3.1 through 6.0)

The diameter distribution pattern suggests an established population of trees. The middle 50% of the trees inventoried are between 9.4 and 18.8 inches in diameter. Beyond that 54 trees (24%) range from 19 to 42 inches in diameter. Although these large trees create an impressive urban forest, it is recommended to continually plant trees to increase age distribution as much as possible. This will help to prevent a large loss in canopy cover as the tree population is maturing.

Maintenance Requirements

Regular investment into general maintenance requirements of pruning, tree risk assessments, and when necessary, removals, will help to maintain optimal health and safety of the urban forest without overburdening the budget any single year. There are multiple reasons why pruning may be desirable for a given tree. We assessed all trees in the inventory for routine, lift, safety, training, and vision pruning.

Routine pruning (PR) used for managing size and structure of a tree was indicated for 44% (99) of trees. Lift pruning (PL) is indicated when there are low-hanging branches that may interfere with traffic or pedestrians. This was found to be the case with 31% (71) of trees. Any dead, diseased, or damaged branches must be removed to maintain the safety of the area and health of the tree. 17% (39) of trees need this safety pruning (PS). Pruning younger trees can dramatically change or train the shape of the tree to be more upright, aesthetically-pleasing, and to have structural integrity. 2% (5) of trees were found to need prune training (PT). Any time trees are interfering with the line of vision for streets and intersections they would need to be pruned back. 3% (7) of trees were identified that interfered (PI) with the line of vision on a roadway. Tree and location specific information can be found in Appendix B.

In addition to the street tree inventory, trees surrounding the village hall were inventoried for species, diameter, and management needs (Fig. 8). All trees in this space require pruning. One red maple in front of Village Hall is experiencing girdling from a birdfeeder chain wrapped around the tree limb. It is recommended the feeder be removed or modified to support the flow of nutrients within the limb.



Tree Number	Tree Species	Diameter (inches)	Management Needs
1	Red maple	15.0	Prune routine, Prune lift, Prune safety, Prune train,
2	Red maple	16.1	Prune routine, Prune lift
3	Red maple	12.3	Prune routine, Prune safety (removal of large dead limbs present throughout the crown, nearest tree to east entrance driveway)
4	Red maple	13.0	Prune routine
5	Red maple	18.8	Prune routine, Prune vision (intersection visibility)
6	Red maple	13.7	Prune routine
7	Red maple	16.9	Prune routine, Prune safety (removal of smaller diameter dead branches throughout the crown, nearest tree to southside human footpath)
8	Red maple	6.8	Prune routine, Prune train
9	Red maple	21.5	Prune routine, Prune safety (lowest lateral limb is experiencing girdling from a wildlife feeder, evidence of moisture accumulation and possible decay down the lateral and stem of tree)
10	Red maple	14.8	Prune routine, Prune safety (removal of large dead limbs present throughout the canopy)
11	Red maple	18.5	Prune routine, Prune safety (dead limbs throughout the canopy and prevalent evidence of woodpecker damage)
12	Red maple	15.9	Prune safety (several large dead limbs, recommend tree removal within the year)
13	Red maple	25.5	Prune safety (several dead limbs and damage to the central leader/stem, recommend tree removal within the year)
14	Bur oak	23.2	Prune routine, Prune safety (large limbs leaning over the northern paved alleyway). Evidence of strong epicormic shoots along central leader and throughout canopy, not a big concern for this species.

Figure 8. Park Ridge Village Hall map (left), tree with bird feeder girdling (right) and tree inventory (February 2021)

Vacant Planting Sites

The business district area of Park Ridge provides the best opportunity for improving public right of way green spaces through the addition of trees. The grassy strip along Sunset Boulevard in front of Blinds and Designs and Precision Cellular has adequate space for planting trees and is currently empty. Six street trees would fit along this section of public right-of-way (Fig. 9). An alternative is to work with the private landowner to develop the bioswale in front of Precision Cellular (or other areas) into a more productive and aesthetically pleasing rain garden.

Many of the areas lining streets in the business district have been paved, providing no available green space for planting trees, shrubs, or other plants. In addition to replacing lost trees and the area mentioned above, the paved sections lining streets and in medians in the business district would provide the greatest opportunity for increased growth of the urban forest.

Tree Risk Assessment

Certified arborists can provide tree risk assessments to determine the potential level of risk a given tree poses in each area. Considerations for this assessment include the likelihood of a failure and the likelihood of impacting a target (people, cars, or buildings) combined with the consequence of that potential failure (ISA, 2017).

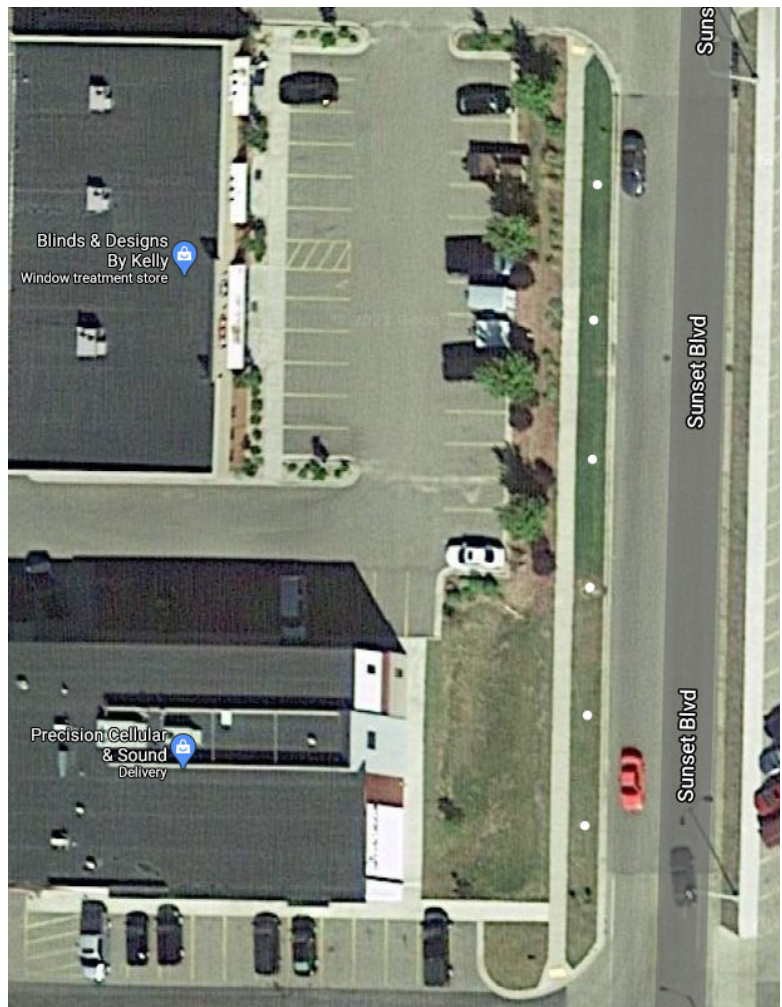


Figure 9. Vacant planning sites for future tree plantings along Sunset Boulevard in the Village of Park Ridge, Wisconsin. White dots represent recommended planting sites.

Additional factors that go into determining these probabilities include site factors, tree health and species, load factors, tree defects, and overall tree condition.

We have indicated which trees are high priority, low priority, or not needed for removal. We have also indicated which trees require pruning due to a potential safety risk of failing limbs falling off. The trees marked as high priority for removal are indicated as such due to the potential risk of failure. Dead and decaying trees lose their structural integrity and have an increased chance of failure.

Urban Forest Value

An estimated dollar value for the current urban forest within Park Ridge was created to gain a sense of value and how much money it would take to replace the current trees. At current state, the Park Ridge urban forest is appraised to be worth approximately \$720,000. The CTLA appraisal system was used to estimate total dollar value of the urban forest. This system includes tree width/diameter measurements, species, conditions, and limitations of the current trees represented; the cost of buying new trees and growing to a similar size and condition within the location; and overall cleanup, installation, aftercare, and related costs to planting the new trees.

The total value of the urban forest, however, goes beyond the dollar value of the trees and the time it would take to grow new ones. Other measurable values to consider are the benefits to human health, water quality, air quality, public safety, property values, aesthetics, biodiversity, and economic sustainability. Value associated with urban forests is present in qualitative metrics as well. Many people report a sense of place attachment to trees and green spaces, providing a sense of community, identity, and belonging. This becomes especially important in our urban environments, where green space can be limited.

Emerald Ash Borer

Emerald ash borer (EAB) is an invasive insect pest that has decimated ash tree populations in several states since it was first discovered in Michigan in 2002. As its name suggests the



Figure 10. Photograph of an adult EAB (top-left), larval stage EAB (bottom-left), larval feeding gallery damage (middle), and half-circle exit hole in bark from adult (right)

larvae feed on the woody tissue below the bark on ash trees (Fig. 10). The injuries sustained from larval damage almost always result in premature tree death. Because the damage builds over time with increased wounds from the larvae, the outward health decline of the trees is not noticeable for some time (3-5 years).

The Village of Park Ridge currently has three green ash trees that are all in good or excellent condition. Estimated cost to preventatively treat these trees with an emamectin benzoate injection is \$340 every other year. The estimated loss in value if these trees were to be lost is \$7800 (CTLA estimation methods). Fortunately, these three trees make up a small percentage of the street tree population and could be replaced if lost (albeit with other species). Economically speaking, however, prevention is less expensive. Treating may also prevent the spread to additional tree populations in the area, as pesticide treatments kill any EAB that try to establish on a pre-treated tree.

According to the Wisconsin Department of Agriculture Trade and Consumer Protection (DATCP), EAB has been found nearby in Stevens Point but no other municipality has reported detection (Fig. 11). Wisconsin saw a sharp increase in the number of EAB detections from 2019 to 2020 (Fig. 12) with an approximate 50% increase in the total number of new communities added to the list of where EAB was found. An EAB homeowner resource guide ([Home-Owner-EAB-Resource-Guide.pdf \(wisc.edu\)](https://www.wisc.edu/extension/publications/2020/01/home-owner-eab-resource-guide.pdf)) published by the UW Extension in Portage County has helpful information regarding ash tree identification (Appendix D), symptoms of EAB, options for treatment, and processing options if a tree does become infected. Providing this information to homeowners can help identify if there are additional ash trees in the village that require treatment.

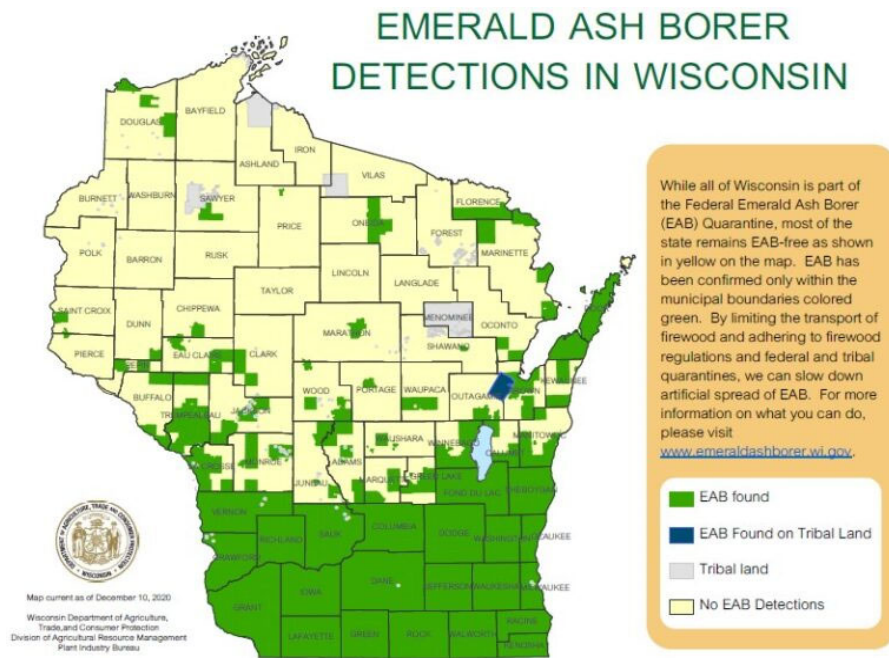


Figure 11. Emerald Ash Borer detections in Wisconsin by municipality and county as of December 10, 2020. (Right) Cumulative number of first community EAB detections. Map and information provided by the Department of Agriculture, Trade, and Consumer Protection. Image taken from webpage [\[https://forestrynews.blogs.govdelivery.com/2021/01/09/municipal-detections-of-emerald-ash-borer-continued-in-2020/\]](https://forestrynews.blogs.govdelivery.com/2021/01/09/municipal-detections-of-emerald-ash-borer-continued-in-2020/).

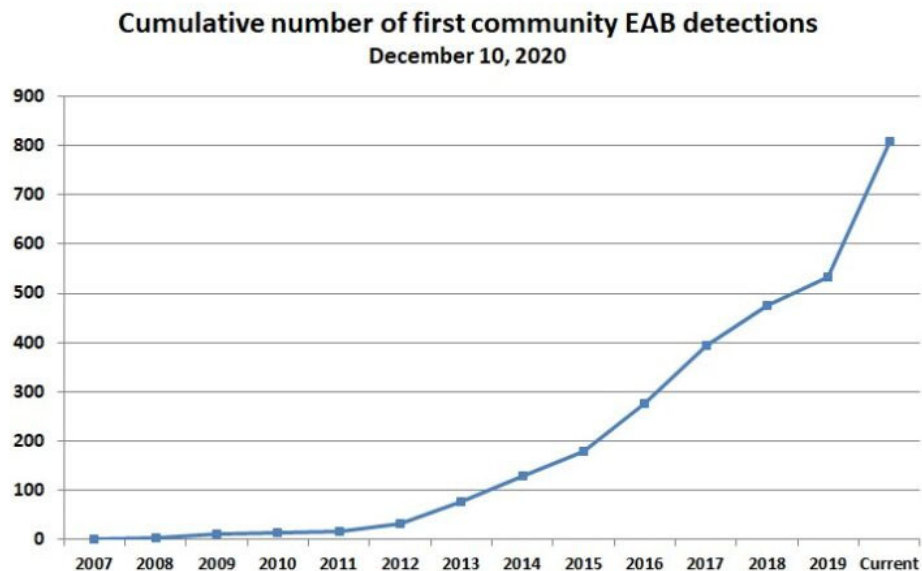


Figure 12. Cumulative number of first community EAB detections in Wisconsin as of December 10, 2020. Data provided by the Department of Agriculture, Trade, and Consumer Protection. Image taken from webpage [\[https://forestrynews.blogs.govdelivery.com/2021/01/09/municipal-detections-of-emerald-ash-borer-continued-in-2020/\]](https://forestrynews.blogs.govdelivery.com/2021/01/09/municipal-detections-of-emerald-ash-borer-continued-in-2020/).

Management Strategies & Recommendations

Removals

Not every single tree in the community generates positive values. Trees that are dead, significantly impacted by diseases and/or pests, and those with severe defects (e.g., decay), are unlikely to live long. Failure of such trees may damage public property and even cause injury to people. Thus, they should be removed as soon as possible. However, tree removal generates costs. In this section, we will talk about budgets on removing trees.

Out of the 227 trees in total, there are ten trees that are assessed with high priority for removal (Table 3). Most of them are dead trees or where overhead wires are detected. To prevent potential damage, we recommend these ten trees to be removed in the first year. Starting in the second year, we used a 2% mortality rate across all tree diameter classes (about five trees/yr. for removal). The estimation of removal cost is based on a study that has three different price levels categorized by three DBH groups: \$15/inch for trees <12", \$25/inch for trees between 12"-18", and \$35/inch for trees >18" (McPherson et al., 2006, 2007). Based on this approach, we calculated the number of inches to be "removed" at each price level and added them together to get the total cost.

Therefore, the total cost of removing those ten trees in the first year is about \$2500. Starting in the 2nd year, the annual removal cost would be about \$1900 (under a 2% mortality rate)

Table 3. Trees with high priority for removal

Address	Tree #	Common Name	Diameter (in)	Comments
40 Hillcrest Drive	1	White Mulberry	8.0	Remove
40 Hillcrest Drive	2	Jack Pine	6.8	Dead
402 Woodlawn Drive	4	White Spruce	4.7	Dead
402 Woodlawn Drive	5	White Spruce	8.4	Dead
402 Woodlawn Drive	6	White Spruce	6.4	
402 Woodlawn Drive	7	White Spruce	9.1	
602 Linwood Dr	2	Black Locust	16.3	
40 Hillcrest Drive	3	Red Maple	16.3	
410 Fieldcrest Ave	7	Catalpa	14.0	
106 Sunrise Ave. (along Hwy 66)	1	American Elm	19.2	high risk tree due to mortality

Tree Management Costs

A healthy urban tree population needs periodical maintenance. Tree management costs covers every aspect of routine maintenance (removal and planting costs are separate and not included here): tree pruning, insect/disease control, watering, mulching, leaf/litter pickup, infrastructure maintenance. We used cost per diameter inch basis to calculate the annual tree management costs. The estimated cost per diameter inch was \$2.08/inch. If the public tree population is maintained at 227 trees every year (which means trees to remove are all replaced by new trees), and a mean diameter of the population is 14.9", the annual tree management costs would be around \$7000 ($14.9''/\text{tree} * 227 \text{ trees} * \$2.08/\text{inch} = \$7035$).

Planting

To maintain adequate tree canopy cover for community, one should consider planting new trees at vacant sites and places where trees will soon be removed. Trees that die annually also create opportunities to for replacement or new plantations. The current tree population has excessive amounts of maple, oak, spruce, and pine based on 5-10-15 rule. Thus, for future plantings we should avoid planting these and focus on other tree species/genus that can increase species diversity. We should also consider external factors that can limit our selections. For example, some planting sites may have overhead or underground utility lines; others may be close to buildings or a light pole. Soil should also be considered. Meanwhile, we should ask ourselves questions on social factors of trees: Can new trees enhance aesthetic beauty of the street? Do any tree species create nuisance on public property, such as odor and litter? Combining the goal of increasing diversity and concerns on a social aspect at the Village of Park Ridge, we came up with six recommended tree species. Table 5 lists common names and scientific names of these six species, their hardiness zone range, mature height, potential canopy spread, and comments of recommendation.

The formula we used to calculate the number of trees to plant annually is: $\# \text{ trees} = [\text{removals} + (\text{vacant sites}/\text{full stocking goal})] / \text{expected survival rate}$. In this case, we recommend a 5-year full stocking goal and expect a 2% annual mortality rate (about five trees die annually). Currently, our inventory found six additional vacant sites and ten trees for immediate removal.

Using the formula, the village should plant at least 11 trees in the first year ($10/0.98 = \sim 10$) and six trees every year starting from the second year.

Planting bigger trees comes with greater visual impact, but also cost more. Smaller trees cost less, but they are more likely to snap or get vandalized. Therefore, we recommend 80% of newly planted trees be in bigger size as balled & burlapped (B&B) trees, with the remaining 20% to be planted as bare root (BR) seedlings. For bare root trees, each tree costs \$250 per 2" caliper; for balled & burlapped (B&B) trees, each costs \$200 per 2" caliper. The annual planting cost would be \$1700.

Table 4. Costs for planting trees in the next 5 years

Year	Total # trees to plant	# B&B trees	B&B Cost	# BR trees	BR Cost	Total Cost
1	8	6	\$1200	2	\$500	\$1700
2	8	6	\$1200	2	\$500	\$1700
3	8	6	\$1200	2	\$500	\$1700
4	8	6	\$1200	2	\$500	\$1700
5	8	6	\$1200	2	\$500	\$1700



Table 5. Recommendations of trees to plant

Common Name	Scientific Name	Hardiness Zone	Mature Height (ft)	Canopy Spread (ft)	Notes
Japanese tree lilac	<i>Syringa reticulata</i>	3-7	20-30	15-25	Small stature tree
Amur maackia	<i>Maackia amurensis</i>	4-7	20-30	20-30	Small stature tree; unique bark
Honeylocust	<i>Gleditsia triacanthos</i>	4-9	30-70	30-70	
Balsam fir	<i>Abies balsamea</i>	3-5	45-75	20-25	Popular as Christmas tree
Paper birch	<i>Betula papyrifera</i>	2-6	50-70	30-40	Beautiful barks
Ginkgo	<i>Ginkgo biloba</i>	4-8	50-80	30-40	Beautiful fall color



Village Hall Rain Garden Demonstration Area

Rain garden installation can help enrich species diversity and create a more aesthetically pleasing landscape. Rain gardens also have other functions: briefly holding rainwater, slowing water movement, reducing surface runoff, filtering contaminants, recharging groundwater, and providing wildlife habitat. Therefore, we recommend having a rain garden on the lawn of Park Ridge Village Hall as a demonstration for the utility of storm water management along streets.

According to Wisconsin Standards Oversight Council and Wisconsin DNR, the typical size of a rain garden ranges between 100-300 square feet. Specifically, it depends on garden depth, soil type, and drainage area. Table 6 demonstrates sizing factors for a rain garden. Since loamy sand is the dominant soil type for the Village of Park Ridge, an ideal garden depth would be three to five inches. However, there are some requirements for the rain garden placement. For example, it needs to be more than ten feet away from the building to collect lawn water. The long side of the garden needs to be perpendicular to the slope and down-sprout to maximize water capture. It also should be wide enough for even spread of water and to grow different plants. Wet areas should be avoided due to its slow infiltration rate. Areas with septic systems and underground utility lines should also be avoided. A flat area with full/partial sunlight is preferred. Based on these considerations, the west side of the Village Hall seems to be a good place for having a rain garden(s). The measure tool from Google Earth indicates a potential installation site can be selected within a polygon of more than 2000 square feet area on the west side of Village Hall (Figure 13). Street reconstruction period may be a good time for the raingarden installation.

Table 6. Sizing factors for rain gardens¹

Garden Depth	Soil Types (Infiltration Rate)		
	Sandy (>1.0 inches/hour)	Silty (0.41-1.0 inches/hour)	Clayey (0.15-0.40 inches/hour)
3-5 inches	0.17	0.35	0.44
6-7 inches	0.13	0.30	0.35
8 inches	0.11	0.23	0.25
>30 feet from down-spout (any depth)	0.03	0.08	0.10

¹Source: (Wisconsin Standards Oversight Council and Wisconsin Department of Natural Resources 2018)
<https://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/shoreland/raingarden/RainGardenManualPrint-small.pdf>

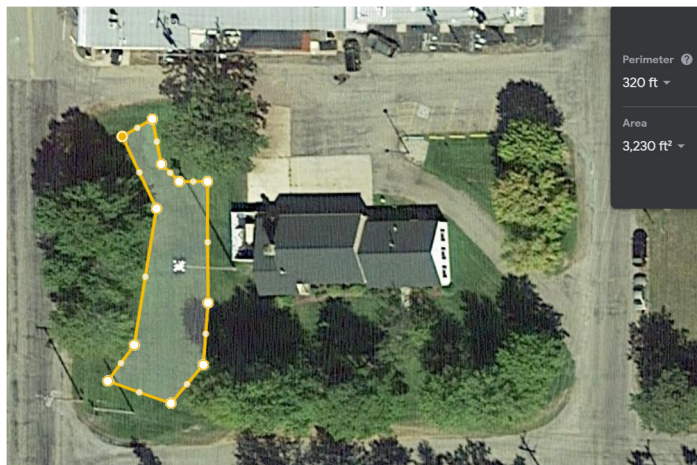


Figure 13. Potential installation site for rain garden

For species selection, a good example can be found from City of Maplewood, Minnesota. Figure 14 includes plants with their mature height, space, and blooming time. Planting perennials are recommended as they will grow back in the next year, which saves costs compared with planting annuals. Johnson's Nursery provides a good reference of prices of plants. One way to reduce costs is applying for Urban Forestry Startup Grants from WI DNR (Appendix E). Startup grants “range from \$1,000 to \$5,000 and require a 50–50 match”. The Village of Park Ridge is eligible for applying this grant as rain garden installation is part of the urban forestry management plan and it promotes sustainable development of the community.

To increase public understanding and awareness with this demonstration, it is recommended that a sign(s) be placed between the rain garden and the road with a brief description of the rain garden and what it does (Fig. 14). Resource and reference materials provided on the village website would also be helpful for generating discussion and increasing adoption within the community. See Appendix F for full-page examples.

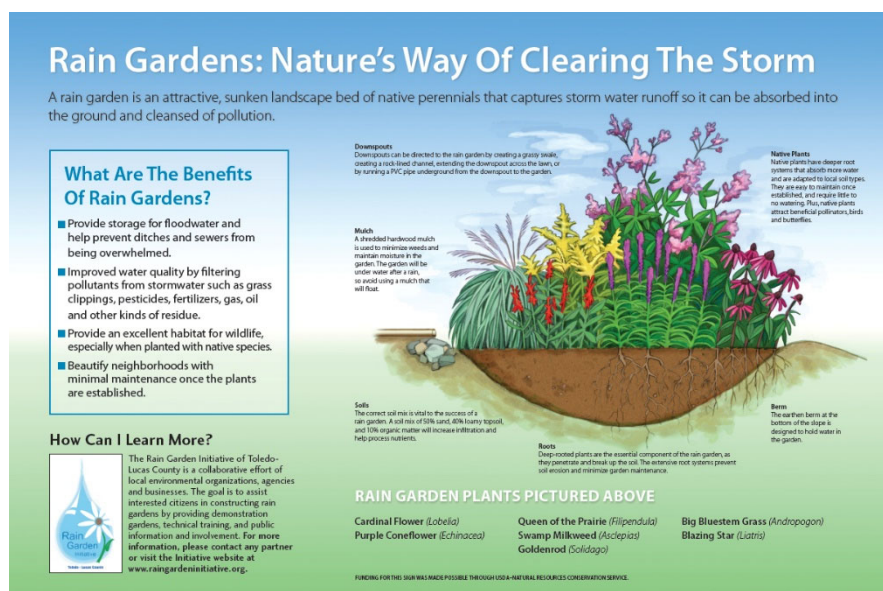


Figure 14. Example of a rain garden sign from Trumbull County Ohio's Storm Water District, webpage [Rain_Garden_Sign.jpg (1212×804) (trumbull.oh.us)]

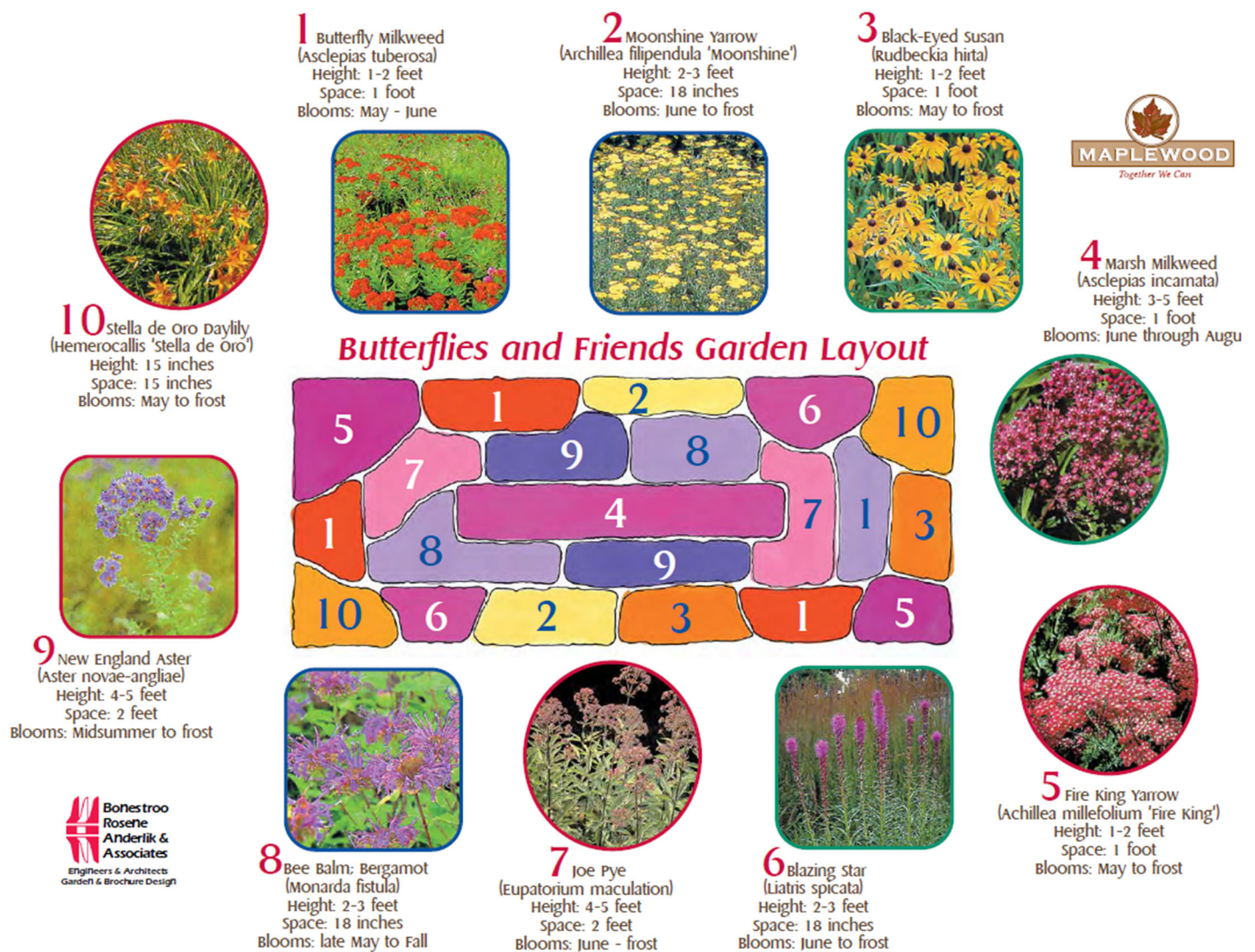


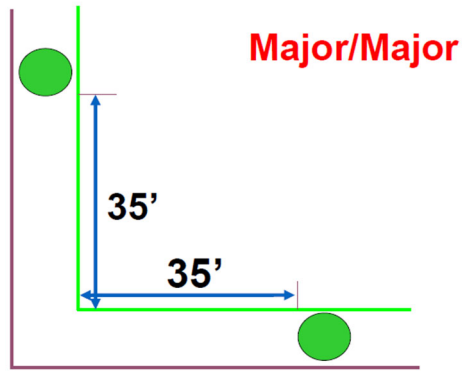
Figure 15. Candidate plants and layout for raingarden, taken from Maplewood, MN webpage [https://maplewoodmn.gov/1035/Designs]

Programmatic Assessment

Tree conditions are dynamic, especially in an urban environment. On the one hand, human activities may interfere with health conditions of urban tree populations. For example, expansion of streets and/or sidewalks may result in less spaces for street trees, potentially triggering a slower growth rate and defects such as adaptive growth. On the other hand, urban trees may also cause troubles to human activities. For example, trees that fall onto streets may cause traffic congestion. In the Village of Park Ridge, our inventory indicates that there is 23% of tree population (53/227) that has a condition rating at “Fair” or lower. Therefore, it’s necessary to monitor and evaluate urban forest with its surrounding environment on a regular basis. Proactive actions such as periodical risk assessment (i.e., the CTLA method we used in inventory), conducted by city forester or other forestry professionals, can help managers know trees that may potentially become hazards in the next few years, so that precautions may be taken to prevent danger.

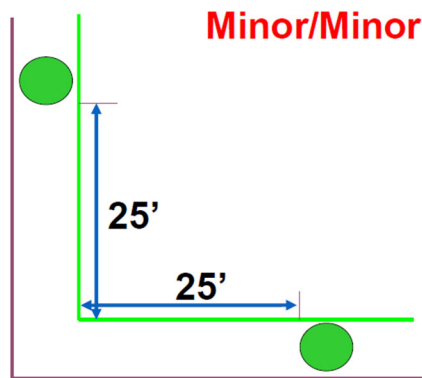
Many trees are near the intersection of roads and may block drivers’ sights of view. Vision triangles should be created so that drivers can see other vehicles in front of the street and traffic from the right/left side. A greater speed limit will require a greater distance for “right-angle sides”. For instance, figure 16 demonstrates that a 35’ distance is the minimum distance on a 35-mph major intersection in City of West Band. Figure 16 demonstrates a 25’ distance at minimum is required on a 25-mph minor intersection. It’s also important to regularly communicate with other municipal departments so that we know what trees may be impacted if there is a construction project nearby. Figure 18 labelled locations where tree branches may become a hazard for the street. For example, branches hanging too low may block drivers’ view or damage the vehicles. Currently, the ordinance includes language for vision triangles.

There are also reactive ways to acquire tree information or other emergency situations. The village can set up a telephone hotline or a website to provide a platform for community members to report accidents. A web map can be very useful for the public to point out where the accident is occurring and for allocating resources based on its location.



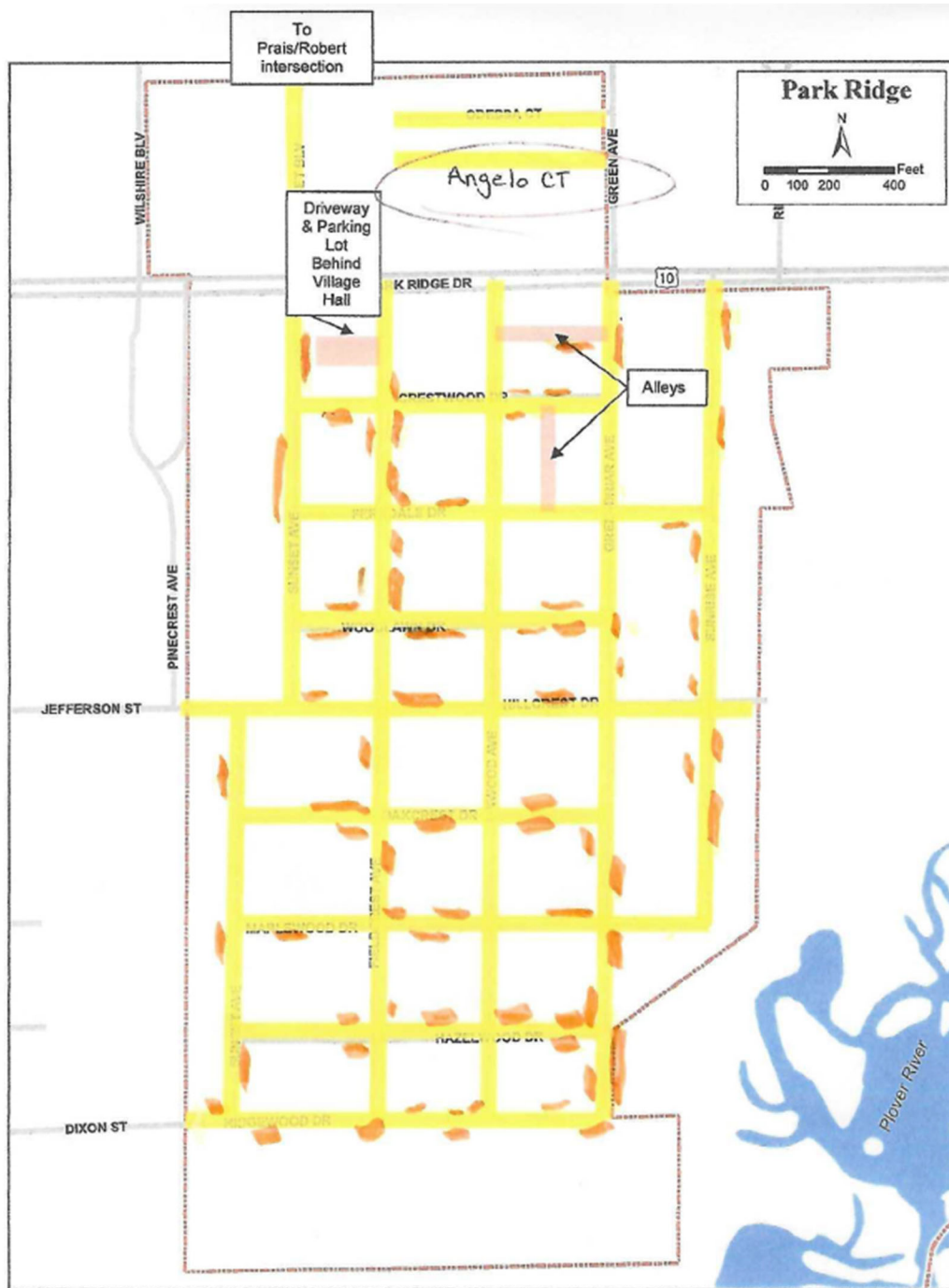
City of West Bend, WI

Figure 16. Minimum distance on a 35-mph major intersection in City of West Bend



City of West Bend, WI

Figure 17. Minimum distance on a 25-mph minor intersection in City of West Bend



March 2021 Brush + Limbs Cutting

Figure 18. Trees to prune for site clearance

Outreach and Education

Many successful urban forestry programs incorporate education and outreach to the general public. All community members benefit from a thriving urban forest and provide a fun reason to bring people together.

The Arbor Day Foundation is a non-profit membership organization that promotes tree planting. One of their programs is Tree City USA, a nationwide program since 1976 that emphasizes the importance of having public trees in communities and ways to care city trees. Tree City USA is in cooperation with USDA Forest Service, Urban and Community Forestry, and National Association of State Foresters. Joining this program will create benefits such as reducing energy costs, consolidating connections between community members, improving community pride and honor, and educating the public the importance of sustainable tree management. Having the Tree Board Handbook will also help understand roles of tree board members. There are four standards to be qualified as a Tree USA community, which include: a tree board or department, a tree care ordinance, a community forestry program with an annual budget of at least \$2 per capita, and an Arbor Day observance and proclamation. Complete description of standards can be found from Appendix G.

The WIDNR Urban Forestry Program aims to monitor and analyze our state's urban forests through continued updates and additions to the Wisconsin Urban Forest Assessment (*Wisconsin DNR*, Undated) Program. In 2015, the program started collecting data on 75 plots in the Madison and Milwaukee metropolitan areas; and in 2016 they expanded to include other areas throughout the state with the plan to return to update data for each plot every seven years. In addition to the plot-based inventory through the Urban Forest Inventory and Analysis Program (UFIA), urban tree canopy cover (UTC) is assessed remotely and a Wisconsin Community Tree Map (CTM) is compiled from independently sourced inventories taken throughout the state. The inventory conducted by UWSP urban forestry class in Spring 2021, under the direction of professor, Dr. Richard Hauer, qualifies as one of those community-sourced inventories to be added to the Wisconsin Community Tree Map. This inventory then, helps to provide management considerations primarily for the local community but also has the potential to add to the greater understanding of urban forestry analysis statewide.

The Champion Tree Program is another pathway for engaging the public with urban forestry. All champion trees are assigned a point value with measurements of the tree's circumference, height, and crown spread diameter ([Form 2400-078 \(wi.gov\)](#)). 20 trees are currently listed as champion trees in Portage County with point values ranging from 71 to 310! For reference, the largest tree by diameter in our street tree inventory was 42 inches. $42 \times 3.14 =$ a circumference of approximately 132 inches. This tree (and possibly others) would be a great candidate to submit for a champion tree after obtaining the remaining information.

Having annual celebrations and events are not only fun but provide opportunities to educate the community about the benefit that a trees and other vegetation provide in our urban environments. This can have a positive affect that encourages people to invest in planting/maintaining trees and gardens in their own yards and makes it more likely for them to support budgets that spend dollars in this area.

Annual Budgets

Annual budgets include removal costs, tree maintenance costs, and planting costs. We assumed adjusted total cost will rise 2% every year due to inflation and rounded our results. Table 7 shows estimated annual budgets spent in tree removal, tree planting, other maintenance activities, and total costs before and after inflation.

Table 7: Total Annual Budgets in the next five years (2% inflation rate)

Year	Removal	Tree Maintenance	Planting	Total	Adjusted Total
1	\$2,500	\$7,000	\$1700	\$11,200	\$11,200
2	\$1,900	\$7,000	\$1700	\$10,600	\$10,800
3	\$1,900	\$7,000	\$1700	\$10,600	\$11,000
4	\$1,900	\$7,000	\$1700	\$10,600	\$11,200
5	\$1,900	\$7,000	\$1700	\$10,600	\$11,500

Summary

Overall, this urban forestry management plan introduced both historical and environmental background of the Village of Park Ridge, reflected what its urban tree population looks like and how well it is performing at the current stage, pointed out issues of the forest, and provided insights on future management recommendations. We believe the proposed management plan can help the Village of Park Ridge ensure public safety, stabilize and improve tree canopy cover on public properties, control diseases and pests, diversify the species found within the tree population, enrich its age distribution, enhance its aesthetic values to the public, and promote public involvement and education, while complying with the current tree ordinance and providing additional references. The rich urban forest of this community provides an amenity to those living in it and is no doubt one reason why the Village of Park Ridge is “a great place to live”. With improvements from our management plan in effect this urban tree population could move from an overall ‘good’ to ‘excellent’ condition, allowing it to thrive through consistent maintenance and management.



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Appendix A – Park Ridge Tree Ordinance

Trees and Shrubs Public Nuisances Affecting the General Welfare (Diseased and Infected Trees) (R68.10)

THE VILLAGE BOARD OF THE VILLAGE OF PARK RIDGE ORDAINS AS FOLLOWS:

Section I. INTENT AND PURPOSE.

A. Having determined that a well-managed urban forest provides many benefits to the Village, its residents and visitors, it is hereby declared to be the policy of the Village of Park Ridge, Wisconsin, to regulate and control the planting, removal, maintenance, and protection of trees and shrubs upon or in all areas of the Village in order to:

1. Promote and enhance the aesthetics and general welfare of the Village.
2. Eliminate and guard against dangerous conditions which may result in injury to persons using the public areas of the Village.
3. Guard all trees and shrubs within the Village against the spread of disease, insects or pests.
4. Promote and enable tree canopy cover throughout Park Ridge to enhance the Village's environmental and aesthetic attributes.

B. The provisions of this ordinance shall apply to all of the following:

1. Trees and shrubs presently or hereafter planted in or upon any public area or public way.
2. Any tree or shrub presently or hereafter planted upon any private premises that the Village Trustee has determined endangers the life, health or safety of persons or property.

Section II. DEFINITIONS.

In this ordinance, unless the context clearly requires otherwise, the following words and phrases shall be defined as follows:

1. "Village" shall mean Village of Park Ridge, Wisconsin.
2. "Village Trustee" shall mean the trustee or any person designated by him/her to act as his/her agent regarding follow-through or enforcement of the Tree and Shrub Ordinance.
3. "Clear vision triangle" shall mean a triangular-shaped portion of land established at street intersections in which nothing is erected, placed, planted or allowed to grow in such a manner as to limit or obstruct the sight distance of motorists entering or leaving the intersection.
4. "Public nuisance" shall mean any tree or shrub or part thereof which, by its condition, interferes with the use of any public area or public way, is infected with a disease, infested with injurious insects or pests, is dead, declining or structurally unsound as determined by the Village Trustee, so as to endanger the life, safety and/or welfare of persons or property.
5. "Tree" shall mean a woody plant usually with a single stem unbranched at the base, reaching mature height of twelve feet or more.
6. "Shrub" shall mean a woody plant usually with multiple stems branched at or near the base, reaching a mature height of less than twelve feet.

Section III. ADMINISTRATION.

A. Authority to Enter Private Premises.

The Village Trustee or his/her authorized representative shall have the authority to enter upon private real estate, excluding any buildings thereon, at reasonable times for the purposes of examining trees or shrubs to determine if they are a public nuisance. All nuisance trees or shrubs shall be removed pursuant to Section IV of this ordinance and may be appropriately marked by the Village Trustee.

B. Interference Prohibited.

No person shall interfere with the Village Trustee or his/her authorized representative while engaged in the execution or enforcement of this ordinance.

Section IV. PUBLIC NUISANCE, DECLARATION, AND ABATEMENT.

A. Public Nuisance.

The Village Board hereby declares any of the following to be a public nuisance and therefore subject to Subsection C of this section: Any tree or shrub, or part thereof, which by reason of its condition interferes with the use of a public area, is infected with an infectious plant disease, is infested with injurious insects or pests, is dead or cannot substantially support foliage, or endangers the life, health or safety of persons or property.

B. Public Nuisances Prohibited.

No person shall permit a public nuisance to remain in or upon any premises owned or leased by that person within the Village.

C. Abatement of Public Nuisances.

1. The Village shall have the right to cause the removal of any dead or diseased trees on private property within the Village, when such trees constitute a hazard to life and property, or harbor insects or disease which constitute a potential threat to other trees within the Village. The Village Trustee will notify in writing the owners of such trees. Within thirty (30) calendar days after the date of the notice, the owner shall:
 - a. Remove such trees, shrubs or limbs at their own expense, or
 - b. Provide proof to the Village that a firm has been secured to do the job of removing the trees, shrubs or limbs.
2. Abatement by Village. If the owner of such private premises, or his/her agent, shall refuse or neglect to comply with the terms of the written notice within the time specified, the Village Trustee shall cause the public nuisance to be abated by an insured tree removal company and shall report the expense thereof to the Village Clerk who shall enter the cost of abatement, plus an additional \$50.00 administrative fee, as a special charge against the property owner's real estate tax bill. No damage shall be awarded to the owner for the destruction of trees or shrubs pursuant to this ordinance.

SECTION V. TREE AND SHRUB PRUNING AND REMOVAL REQUIREMENTS.

A. Clear Vision Triangle.

No shrub, hedge or other growth exceeding thirty-six (36) inches in height above street grade shall be permitted in any clear vision triangle extending 25 feet from any street corner within the Village. Trees that are located in a clear vision triangle shall be kept trimmed so that the lowest branches projecting over the public street or right-of-way provide a clearance of not less than sixteen (16) feet.

B. Lighting and Overhead Clearance Requirements.

Every owner of any tree overhanging any street or right-of-way within the Village shall prune the branches so that such branches shall not obstruct the light from any street lamp or obstruct the view of any street intersection and so that there shall be a clear space of 8 feet above the surface of a public sidewalk and not less than 16 feet above the travel portion of a public street. Said owners shall remove all dead, diseased or dangerous trees, or broken or decayed limbs which constitute a menace to the safety of the public. The Village shall have the right to prune any tree or shrub on private property when it interferes with the proper spread of light along the street from a street light, interferes with visibility of any traffic control device or sign, or does not have proper clearance/height.

C. Removal.

1. Dead or infected trees shall be cut to ground level and disposed of in the proper manner.
2. In cases where a tree is uprooted due to storms, the stump and roots shall be removed. Any hole created by the removal of the stump and roots shall be filled to the level of the surrounding grade.

D. Violations.

In the event of failure of owners to comply with the provisions of this section, the trees or shrubs in violation of this section shall be declared a public nuisance and shall be subject to abatement as set forth in Section IV of this ordinance.

SECTION VI. APPEALS.

A person/company/property owner who receives an order from the Village and objects to all or part thereof may, within ten (10) days of receipt of order, notify the Village in writing of the nature of the objection and request a meeting with the Village Board. The Village shall schedule such a meeting within thirty (30) days of receiving the request. The Village Board shall notify the appellant of its decision in writing within ten (10) days of the concluded meeting. The Village Board may affirm, cancel or modify the order, in its discretion, to best conform such order to the intent of this ordinance. The decision of the Village Board shall be final.

SECTION VII. SEVERABILITY.

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional by reason of any decision of any court of competent jurisdiction, such decision will not affect the validity of any other section, subsection, sentence, clause, phrase or portion thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or portions thereof may be declared invalid or unconstitutional.

This repeals and replaces all previous versions of Ordinance 10.08.

Passed and adopted by the Village Board of the Village of Park Ridge on this nineteenth day of January, 2015.

Appendix B. Stevens Point Precipitation and Temperature (1990-2020)

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 1079 ft. Lat: 44.5115° N Lon: -89.5853° W
Station: STEVENS POINT, WI US USC00478171

Global Summary of the Year
1990 - 2015
Generated on 03/28/2021

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Liquid Precipitation (Inches)			Frozen Precipitation (Inches)					Number of Days				
Elem->	PRCP	EMXP		SNOW	EMSN		EMSD		DP01	DP10	DP1X	DYHF	DYTS
Year	Total Liquid Content	Extreme Max Precip	Date of Occurrence	Snowfall	Extreme Max Snowfall	Date of Occurrence	Extreme Max Snow Depth	Date of Occurrence	Precip >= 0.01"	Precip >= 0.10"	Precip >= 1.00"	FG+	TS
1990	33.38	1.88	Sep-14	46.6	6.5	Dec-15	13	Dec-18	122	75	6		
1991	32.33	1.26	Jul-17	40.8	4.5+	Nov-27	14+	Jan-15	135	83	4		
1992	36.30	1.83	Sep-16						131	69	10		
1993	36.63	2.71	Jun-09	44.6	6.3	Jan-13			140	77	4		
1994	31.66	1.88	Jul-06	41.3	7.0	Jan-06			113	67	9		
1995	32.96	2.30	Oct-06	38.1	7.0	Mar-07			116	69	10		
1996	31.20	1.44	Jun-02	64.4	7.0	Jan-27	18	Jan-30	137	74	5		
1997	26.50	2.76	Jun-20	43.0	10.0	Mar-14	24	Mar-15	118	59	5		
1998	28.95	2.25	Jun-27	42.6	6.0	Dec-27			106	64	3		
1999	30.98	2.56	Jul-09	33.1	6.5	Jan-03	15	Jan-25	106	61	5		
2000	34.69	1.81	Aug-15	62.8	11.0	Jan-13	18	Dec-29	132	69	10		
2001	33.95	2.47	Jun-12	14.6	2.0	Feb-08	15+	Feb-24	128	82	5		3
2002	38.98	4.40	Jun-22	42.6	7.0	Feb-21	8	Mar-06	115	72	9		
2003	28.06	1.86	Jun-09	35.5	4.6	Jan-31	12+	Feb-07	106	67	5		
2004	35.97	1.48	Jun-17	32.9	4.0	Feb-03	12+	Feb-12	134	82	7		5
2005	30.43	1.61	Aug-12	47.6	7.0	Jan-22	11+	Jan-24	108	61	8		1
2006	28.63	1.67	Dec-23	30.7	7.0	Feb-17	8+	Feb-20	111	67	6		4
2007	29.67	2.50	Aug-20	68.8	7.5	Mar-02	12	Mar-03	113	66	7		4
2008	30.09	1.25	Apr-01	89.4	8.8	Feb-18	22	Feb-19	131	76	4		
2009	31.79	1.71	Aug-08	37.2	7.0	Dec-09	14+	Jan-24	126	67	3		4
2010	41.99	3.88	Sep-23	30.2	8.0	Dec-12	10+	Dec-22	114	69	13		15
2011	34.91	2.99	Jul-20	52.2	11.0	Feb-21	14	Feb-21	124	68	5		10
2012	27.94	1.94	Oct-14	38.2	5.9	Dec-10	8+	Dec-31	113	61	6		16
2013	31.54	1.75	Apr-10	68.0	6.4	Jan-31	14	Feb-23	143	78	4		11
2014	36.50	2.53	Aug-30	64.6	5.2	Feb-18	22	Feb-18	148	83	8		10
2015	40.81	3.23	Sep-07	29.7	8.9	Dec-29	9	Dec-29	114	67	10		13

Notes

(Blank) Data element not reported or missing.

X Monthly means or totals based on incomplete time series.

+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

T Trace Amount.

FG+ Heavy Fog

TS Thunderstorms

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 1079 ft. Lat: 44.5115° N Lon: -89.5853° W
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151 Patton Avenue
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Elem->	PRCP	EMXP		SNOW	EMSN		EMSD		DP01	DP10	DP1X	DYHF	DYTS
Year	Total Liquid Content	Extreme Max Precip	Date of Occurrence	Snowfall	Extreme Max Snowfall	Date of Occurrence	Extreme Max Snow Depth	Date of Occurrence	Precip >= 0.01"	Precip >= 0.10"	Precip >= 1.00"	FG+	TS
2016	38.64	2.59	Mar-16	54.6	5.5+	Mar-24	12+	Dec-25	143	79	5		12
2017	37.75	2.98	Jun-13	33.7	5.2	Jan-11	14	Jan-11	146	82	8		24
2018	38.43	2.50	Jun-18	57.6	9.1	Apr-14	19	Apr-16	120	68	11		7
2019	45.39	2.18	Jul-21	79.4	7.3	Feb-13	23	Mar-02	148	93	12		14
2020	33.72	2.84	Jun-21	45.2	9.0	Feb-10	18	Feb-10	115	74	7		12
2021													

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1990 - 2015
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National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (Fahrenheit)			Degree Days (Base 65 degrees)		Extremes				Number of Days			
Elem->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00
Year	Annual Mean Temp	Mean Max Temp	Mean Min Temp	Heating Degree Days	Cooling Degree Days	Extreme Max Temp	Date of Occurrence	Extreme Min Temp	Date of Occurrence	Max Temp >= 90F	Max Temp <= 32F	Min Temp <= 32F	Min Temp <= 0F
1990	46.3	56.7	35.9	7557	495	92	Jul-04	-22	Dec-23	2	46	164	14
1991	45.2	54.6	35.8	7414	653	96	Jul-16	-21	Jan-25	11	77	164	25
1992	44.1	52.7	35.5	7832	223	91	Aug-10	-14	Jan-16	1	63	169	12
1993	42.9	51.8	34.1	8268	342	90	Aug-26	-13	Feb-25	1	76	173	25
1994	44.4	54.5	34.3	8254	447	96	Jun-18	-31	Jan-19	5	72	153	27
1995	43.4	52.8	34.0	7393	664	102	Jul-14	-14	Dec-11	11	93	163	32
1996	41.0	50.5	31.5	9097	341	92	Jun-30	-32+	Feb-03	2	101	185	48
1997	43.2	52.3	34.0	8617	321	90	Jul-17	-17	Jan-26	1	76	172	23
1998	47.8	57.2	38.4	7010	509	89+	Jul-21	-14+	Dec-31	0	59	136	9
1999	45.6	55.6	35.6	7165	488	97	Jul-31	-19	Jan-05	7	57	153	22
2000	44.1	54.0	34.2	7480	367	92	Sep-01	-21+	Dec-26	1	79	153	29
2001	45.5	55.3	35.7	8207	495	94	Aug-08	-8+	Feb-22	7	66	148	18
2002	44.5	54.2	34.9	7448	525	92	Jul-22	-14	Mar-04	4	63	184	8
2003	43.6	53.7	33.6	8177	464	91+	Aug-25	-13	Jan-27	2	72	163	36
2004	43.8	53.3	34.2	8085	300	87+	Jul-22	-19+	Dec-25	0	66	154	27
2005	45.3	55.2	35.5	7718	650	94	Jul-18	-13+	Jan-17	10	88	159	23
2006	46.1	55.6	36.6	7260	455	96	Aug-01	-28	Feb-18	6	51	160	4
2007	45.2	54.8	35.6	7626	587	92	Jul-09	-18	Feb-06	6	86	152	24
2008	41.1	51.5	30.6	8736	292	88	Sep-03	-22	Feb-21	0	93	185	52
2009	42.5	52.0	33.1	8650	231	92	Jun-24	-25	Jan-17	1	79	168	42
2010	46.1	55.6	36.6	7396	574	90	May-25	-11	Dec-15	1	78	154	19
2011	43.9	52.8	35.1	8414	504	93	Jun-08	-18	Jan-22	6	77	166	16
2012	47.6	57.7	37.6	6827	654	95+	Jul-07	-12	Jan-20	10	56	151	5
2013	42.2	51.6	32.8	8299	485	91+	Aug-28	-18	Dec-30	4	91	178	31
2014	40.5	49.5	31.4	9334	336	86+	Jul-23	-24+	Jan-07	0	101	173	48
2015	45.0	54.3	35.7	8514	362	88+	Sep-07	-17	Feb-19	0	71	150	33

Notes

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Elem->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00
Year	Annual Mean Temp	Mean Max Temp	Mean Min Temp	Heating Degree Days	Cooling Degree Days	Extreme Max Temp	Date of Occurrence	Extreme Min Temp	Date of Occurrence	Max Temp >= 90F	Max Temp <= 32F	Min Temp <= 32F	Min Temp <= 0F
2016	46.5	55.4	37.6	7067	510	89+	Jul-23	-15	Dec-19	0	60	141	21
2017	44.6	53.8	35.5	7243	371	89	Sep-23	-16	Dec-28	0	75	152	22
2018	43.7	53.2	34.2	8342	623	94+	Jul-01	-16+	Jan-02	9	88	182	22
2019	42.6	51.7	33.5	8596	439	90	Jul-20	-28	Feb-01	1	85	175	35
2020	45.4	54.9	36.0	7848	592	93	Jun-03	-17+	Feb-15	6	60	177	12
2021													

Notes

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FG+ Heavy Fog

TS Thunderstorms

Appendix C – Selected Inventory Data for Pruning

Address	Common Name	Diameter (in)	Condition (%)	Prune Routine (PR)	Prune Lift (PL)	Prune Safety (PS)	Prune Train (PT)	Prune Vision (PV)	Remove Priority (N, L, H)
106 Sunrise Ave.	Bur Oak	15.5	65	Y	N	N	N	N	N
106 Sunrise Ave.	Red Oak	27.0	60	Y	N	N	N	N	N
106 Sunrise Ave.	Red Oak	24.2	60	Y	N	N	N	N	N
106 Sunrise Ave.	Norway Spruce	20.0	85	Y	N	N	N	N	N
106 Sunrise Ave.	Red Pine	16.3	70	Y	N	N	N	N	N
106 Sunrise Ave.	White Pine	26.8	70	Y	N	N	N	N	N
106 Sunrise Ave.	Silver Maple	24.4	70	Y	N	N	N	N	N
106 Sunrise Ave. (along Hwy 66)	American Elm	19.2	0	N	N	N	N	N	H
108 Pinecrest Dr.	Siberian Elm	22.3	50	Y	N	Y	N	N	N
108 Pinecrest Dr.	Siberian Elm	25.7	50	Y	N	Y	N	N	N
112 Linwood Ave	Northern White Cedar	20.0	70	Y	N	N	N	N	N
112 Linwood Ave	Yew	12.0	50	Y	N	N	N	N	N
112 Linwood Ave	Yew	7.0	45	Y	N	N	N	N	N
112 Linwood Ave	Yew	6.0	50	Y	N	N	N	Y	N
112 Linwood Ave	Siberian Elm	35.0	60	Y	N	N	N	N	N
112 Linwood Ave	Siberian Elm	10.3	70	Y	N	N	N	N	N
117 Greenbriar Avenue	Red Oak	39.3	75	Y	Y	Y	N	Y	N
117 Greenbriar Avenue	Yew	14.0	45	Y	N	N	N	Y	N
117 Greenbriar Avenue	Yew	12.4	50	Y	N	N	N	Y	N
15 Park Ridge Dr.	Scotch Pine	12.5	75	Y	N	N	N	N	N
15 Park Ridge Dr.	Basswood	17.0	40	Y	N	Y	N	N	L
15 Park Ridge Dr.	Basswood	9.6	60	Y	N	N	N	N	L
15 Park Ridge Dr.	Basswood	9.5	60	Y	N	N	N	N	L
15 Park Ridge Dr.	Basswood	11.9	55	Y	N	N	N	N	N

15 Park Ridge Dr.	Basswood	12.2	60	Y	N	N	N	N	N
15 Park Ridge Dr.	Basswood	6.9	60	Y	N	N	N	N	N
15 Park Ridge Dr.	Basswood	14.3	60	Y	N	N	N	N	N
15 Park Ridge Dr.	Siberian Elm	21.0	50	Y	N	N	N	N	N
15 Park Ridge Dr.	Siberian Elm	18.0	55	Y	N	Y	N	N	N
15 Park Ridge Dr.	Siberian Elm	23.0	40	Y	N	Y	N	N	L
15 Park Ridge Dr.	Siberian Elm	17.3	55	Y	N	Y	N	N	N
15 Park Ridge Dr.	Siberian Elm	23.6	55	Y	N	Y	N	N	N
15 Park Ridge Dr.	Siberian Elm	12.9	50	Y	N	Y	N	N	N
15 Park Ridge Dr.	Siberian Elm	18.8	50	Y	N	Y	N	N	N
19 Park Ridge Dr.	Honey Locust	16.1	70	Y	N	N	N	N	N
19 Park Ridge Dr.	Honey Locust	11.0	70	Y	N	N	N	N	N
19 Park Ridge Dr.	Honey Locust	10.7	70	Y	N	N	N	N	N
19 Park Ridge Dr.	Honey Locust	14.5	70	Y	N	N	N	N	N
19 Park Ridge Dr.	Honey Locust	14.8	70	Y	Y	N	N	N	N
202 Fieldcrest Ave	Bur Oak	13.1	75	N	N	N	N	N	N
202 Fieldcrest Ave	White Pine	7.1	85	N	N	N	N	N	N
202 Greenbriar Ave	Northern Pin Oak	32.3	75	N	N	Y	N	N	N
202 Linwood Dr	Norway Spruce	9.2	75	N	Y	N	N	N	N
202 Linwood Dr	White Pine	11.9	85	N	N	Y	N	N	N
202 Linwood Dr	White Pine	13.0	80	N	Y	N	N	N	N
202 Linwood Dr	White Pine	9.4	60	Y	N	N	N	N	L
203 Greenbriar Ave	Silver Maple	17.2	55	N	N	N	N	N	L
206 Pinecrest Ave	Serbian Spruce	10.2	65	Y	N	N	N	Y	N
206 Pinecrest Ave	Serbian Spruce	8.3	65	Y	N	N	N	Y	N
209 Sunrise Ave	Norway Spruce	28.1	95	N	Y	N	N	N	N
21 Hillcrest Dr	Northern Pin Oak	24.0	65	N	N	Y	N	N	N
211 Sunset Ave	Green Ash	11.0	80	N	N	N	N	N	N
211 Sunset Ave	Red Maple	14.0	70	Y	N	N	N	N	N
217 Greenbriar Ave	White Spruce	19.9	60	N	Y	N	N	N	N
217 Linwood Ave	Norway Spruce	4.5	95	N	N	N	N	N	N

217 Linwood Ave	White Spruce	4.3	95	N	N	N	N	N	N
22 Ferndale Drive	Red Oak	25.6	65	N	N	N	N	N	N
23 Park Ridge Dr.	Crab Apple	6.4	70	Y	N	N	N	N	N
23 Park Ridge Dr.	Crab Apple	5.4	70	Y	N	N	N	N	N
23 Park Ridge Dr.	Crab Apple	7.5	70	Y	N	N	N	N	N
24 Hillcrest Drive	Red Oak	38.1	60	N	N	N	N	N	N
24 Hillcrest Drive	White Spruce	14.0	50	N	Y	N	N	N	L
30 Ferndale Drive	Red Oak	34.3	65	N	N	Y	N	N	N
30 Ferndale Drive	Red Oak	9.4	70	N	Y	N	N	N	N
30 Hazelwood Dr	Green Ash	13.6	75	N	N	N	N	N	N
301 Greenbriar Ave	White Oak	15.6	65	N	N	N	N	N	N
301 Greenbriar Ave	White Spruce	13.5	80	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	10.4	75	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	12.9	80	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	12.8	75	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	15.0	70	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	6.4	75	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	9.3	70	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	8.1	75	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	11.4	80	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	11.1	85	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	11.2	80	N	Y	N	N	N	N
301 Greenbriar Ave	White Spruce	14.9	80	N	Y	N	N	N	N
301 Greenbriar Ave	Red Maple	14.0	40	N	Y	N	N	N	N
301 Greenbriar Ave	Red Maple	9.9	45	N	N	N	N	N	N
301 Greenbriar Ave	Red Maple	17.0	50	N	Y	N	N	N	N
301 Greenbriar Ave	Red Maple	7.4	70	N	Y	N	N	N	N
301 Greenbriar Ave	Red Maple	10.4	70	N	N	N	N	N	N
304 Sunset Ave	Siberian Elm	25.1	60	Y	N	Y	N	N	N
304 Sunset Ave	Siberian Elm	16.0	70	N	N	N	N	N	N
305 Sunrise Ave	Red Oak	34.2	55	N	N	Y	N	N	N
305 Sunrise Ave	White Pine	6.2	90	N	Y	N	N	N	N

305 Sunrise Ave	White Spruce	8.0	90	N	Y	N	N	N	N
31 Ridgewood Dr	Bur Oak	19.4	80	N	Y	N	N	N	N
31 Ridgewood Dr	Bur Oak	19.5	80	N	N	N	N	N	N
31 Ridgewood Dr	Northern Pin Oak	19.0	55	Y	N	N	N	N	N
31 Ridgewood Dr	Northern Pin Oak	19.1	60	Y	N	N	N	N	N
31 Ridgewood Dr	Northern Pin Oak	19.2	70	Y	N	N	N	N	N
312 Linwood Ave	Norway Spruce	13.3	50	N	Y	N	N	N	N
316 Sunset Ave	Siberian Elm	16.4	60	Y	N	Y	N	N	N
318 Fieldcrest Ave	Red Maple	11.3	75	N	N	N	N	N	N
318 Fieldcrest Ave	Red Maple	12.0	75	N	Y	N	N	N	N
318 Fieldcrest Ave	Red Maple	17.5	75	N	Y	N	N	N	N
318 Fieldcrest Ave	Red Maple	12.8	75	N	Y	N	N	N	N
32 Crestwood Ave	Black Walnut	12.4	55	N	Y	N	N	N	N
321 Sunrise Ave	American Elm	15.2	70	N	Y	N	N	N	N
34 Ridgewood Dr	Northern Pin Oak	18.7	75	Y	N	N	N	N	N
34 Ridgewood Dr	Norway Spruce	18.8	60	N	N	Y	N	N	N
4 Ridgewood Dr	Red Maple	19.7	65	N	Y	N	N	N	N
40 Hillcrest Drive	White Mulberry	8.0	45	Y	Y	Y	N	N	H
40 Hillcrest Drive	White Mulberry	9.3	50	N	Y	N	N	N	L
40 Hillcrest Drive	Jack Pine	6.8	0	N	Y	N	N	N	H
40 Hillcrest Drive	Red Maple	16.3	30	Y	Y	Y	N	N	H
400 Woodlawn Drive	Green Ash	9.3	80	N	Y	N	N	N	N
400 Woodlawn Drive	Red Maple	3.0	90	N	N	N	N	N	N
400 Woodlawn Drive	Red Maple	3.5	90	N	N	N	N	N	N
400 Woodlawn Drive	Red Maple	3.5	90	N	N	N	N	N	N
402 Woodlawn Drive	Red Oak	15.1	55	N	Y	N	N	N	N
402 Woodlawn Drive	White Pine	17.7	70	N	Y	N	N	N	N
402 Woodlawn Drive	White Spruce	7.0	70	N	N	N	N	N	N
402 Woodlawn Drive	White Spruce	4.7	0	N	N	N	N	N	H
402 Woodlawn Drive	White Spruce	8.4	0	N	N	N	N	N	H

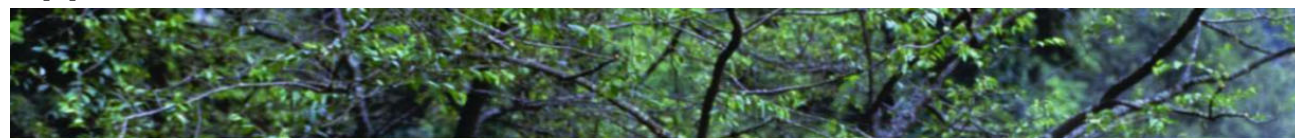
402 Woodlawn Drive	White Spruce	6.4	40	N	N	N	N	N	H
402 Woodlawn Drive	White Spruce	9.1	40	N	N	N	N	N	H
403 Greenbriar Ave	Bur Oak	13.8	65	N	Y	N	N	N	N
403 Greenbriar Ave	Red Pine	13.6	85	N	N	N	N	N	N
403 Greenbriar Ave	Red Maple	12.3	70	N	Y	N	N	N	N
403 Woodlawn Drive	Bur Oak	25.5	70	N	N	N	N	N	N
403 Woodlawn Drive	Red Oak	20.8	70	N	Y	N	N	N	N
403 Woodlawn Drive	Red Oak	10.8	60	N	N	N	N	N	N
403 Woodlawn Drive	Red Oak	8.1	60	N	N	N	N	N	N
403 Woodlawn Drive	Red Oak	9.8	60	Y	Y	N	N	N	N
404 Fieldcrest Drive	Sugar Maple	5.2	80	N	N	N	Y	N	N
404 Fieldcrest Drive	Sugar Maple	4.5	85	N	N	N	N	N	N
410 Fieldcrest Ave	Catalpa	16.6	70	N	Y	N	N	N	N
410 Fieldcrest Ave	Catalpa	14.0	30	N	N	Y	N	N	H
410 Fieldcrest Ave	Catalpa	12.1	50	N	N	Y	N	N	N
410 Fieldcrest Ave	Catalpa	21.4	45	N	N	Y	N	N	L
410 Fieldcrest Ave	Northern Pin Oak	32.1	55	N	N	Y	N	N	N
410 Fieldcrest Ave	White Pine	24.1	70	N	N	N	N	N	N
410 Fieldcrest Ave	Red Maple	10.0	55	N	Y	N	N	N	L
410 Fieldcrest Ave	Sugar Maple	7.1	75	N	Y	N	N	N	N
410 Fieldcrest Ave	Sugar Maple	6.3	65	N	Y	N	Y	N	N
411 Greenbriar Ave	Red Maple	28.7	50	Y	N	Y	N	N	L
411 Greenbriar Ave	Sugar Maple	17.6	45	N	N	N	Y	N	L
411 Linwood Ave	Red Oak	15.6	70	N	Y	N	N	N	N
411 Linwood Ave	Crab Apple	5.2	70	N	N	N	N	N	N
411 Linwood Ave	Red Maple	4.8	80	N	N	N	N	N	N
42 Ridgewood Dr	Northern Pin Oak	18.3	70	Y	N	N	N	N	N
42 Ridgewood Dr	Northern Pin Oak	18.4	85	Y	N	N	N	N	N
42 Ridgewood Dr	Red Maple	18.1	50	N	Y	Y	N	N	N
46 Ridgewood Dr	Norway Spruce	23.4	85	N	N	N	N	N	N
46 Ridgewood Dr	Norway Spruce	19.9	85	N	N	N	N	N	N

46 Ridgewood Dr	Siberian Elm	11.0	55	Y	N	N	N	N	N
46 Ridgewood Dr	Siberian Elm	18.0	60	N	Y	Y	N	N	N
49 Park Ridge Dr.	Bur Oak	16.6	80	Y	Y	N	N	N	N
49 Park Ridge Dr.	Red Maple	42.0	60	Y	N	N	N	N	N
51 Park Ridge Dr.	Basswood	16.8	75	Y	Y	N	N	N	N
51 Park Ridge Dr.	Basswood	4.6	75	Y	N	N	N	N	N
51 Park Ridge Dr.	Basswood	11.6	70	Y	Y	N	N	N	N
51 Park Ridge Dr.	Basswood	13.7	75	Y	Y	N	N	N	N
512 Sunset Ave	White Pine	21.4	85	Y	N	N	N	N	N
517 Greenbriar Ave	White Spruce	15.0	80	N	Y	N	N	N	N
519 Sunrise Ave	Sugar Maple	14.7	70	N	Y	N	N	N	N
520 Linwood Dr	Honey Locust	14.2	70	N	Y	Y	N	N	N
55 Maplewood Dr	Red Pine	16.5	65	N	N	N	N	N	N
55 Maplewood Dr	Red Pine	15.0	50	N	N	N	N	N	N
55 Maplewood Dr	Red Pine	27.2	55	N	N	N	N	N	N
57 Sunset Blvd.	Crab Apple	6.0	65	Y	N	N	N	N	N
57 Sunset Blvd.	Crab Apple	5.0	65	Y	N	N	N	N	N
57 Sunset Blvd.	Crab Apple	5.0	65	Y	N	N	N	N	N
57 Sunset Blvd.	Red Maple	7.5	70	Y	N	N	N	N	N
57 Sunset Blvd.	Red Maple	6.0	65	Y	N	N	N	N	N
57 Sunset Blvd.	Red Maple	6.3	65	Y	N	N	N	N	N
601 Sunset Ave	White Oak	24.0	75	Y	N	N	N	N	N
602 Linwood Dr	Black Locust	16.3	65	Y	Y	N	N	N	H
602 Linwood Dr	Bur Oak	32.4	60	N	N	N	N	N	L
602 Sunrise Ave	Northern White Cedar	11.8	80	N	Y	N	N	N	N
602 Sunrise Ave	Norway Spruce	19.0	75	N	N	N	N	N	N
605 Greenbriar Ave	White Oak	19.5	80	N	N	N	N	N	N
605 Greenbriar Ave	White Oak	12.0	85	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	12.9	80	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	12.0	75	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	13.2	75	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	16.1	75	N	N	N	N	N	N

605 Greenbriar Ave	Red Pine	13.1	75	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	16.1	75	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	10.7	75	N	N	N	N	N	N
605 Greenbriar Ave	Red Pine	11.7	70	N	N	N	N	N	N
616 Greenbriar Ave	Northern Pin Oak	17.7	70	N	N	N	N	N	N
616 Greenbriar Ave	Red Pine	14.9	80	N	N	N	N	N	N
617 Linwood Dr	Norway Maple	20.1	65	N	N	N	N	N	N
617 Linwood Dr	Norway Maple	15.2	80	N	Y	N	N	N	N
617 Linwood Dr	Red Maple	21.8	40	Y	N	N	N	N	L
618 Fieldcrest Ave	Black Cherry	6.5	75	Y	Y	N	N	N	N
618 Fieldcrest Ave	Norway Maple	7.3	75	N	Y	N	N	N	N
620 Sunrise Ave	White Spruce	7.0	80	Y	N	N	N	N	N
66 Hillcrest Drive	Red Oak	23.9	75	N	Y	N	N	N	N
66 Hillcrest Drive	Red Oak	15.8	70	N	Y	N	N	N	N
702 Greenbriar Ave	Northern Pin Oak	27.2	75	N	N	N	N	N	N
702 Greenbriar Ave	White Pine	10.9	85	N	N	N	N	N	N
717 Linwood Dr	Northern Pin Oak	34.7	65	N	N	Y	N	N	N
719 Greenbriar Ave	Bur Oak	13.0	80	N	N	N	N	N	N
809 Fieldcrest Ave	Norway Maple	20.2	75	N	Y	N	N	N	N
809 Fieldcrest Ave	Norway Maple	11.3	90	N	Y	N	N	N	N
809 Sunset Ave	Red Maple	19.8	80	N	Y	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	9.3	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	15.2	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	11.3	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	6.0	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	6.0	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	8.0	60	Y	N	N	N	N	N

Crestwood Dr. Middle Block	Northern White Cedar	8.2	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	6.9	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Northern White Cedar	7.0	60	Y	N	N	N	N	N
Crestwood Dr. Middle Block	Red Pine	24.6	75	Y	N	Y	N	N	N
Crestwood Dr. Middle Block	Red Pine	18.1	65	Y	N	N	N	N	N
Village Hall along Alley	Bur Oak	23.2	70	Y	N	Y	N	N	N
Village Hall Crestwood Dr.	Red Maple	18.8	55	Y	N	N	N	Y	N
Village Hall Crestwood Dr.	Red Maple	13.7	70	Y	N	N	N	N	N
Village Hall Crestwood Dr.	Red Maple	16.9	65	Y	N	Y	N	N	N
Village Hall Crestwood Dr.	Red Maple	21.5	55	Y	N	Y	N	N	N
Village Hall Crestwood Dr.	Red Maple	14.8	55	Y	N	Y	N	N	N
Village Hall Fieldcrest Ave	Red Maple	15.0	65	Y	Y	Y	Y	N	N
Village Hall Fieldcrest Ave	Red Maple	16.1	70	Y	Y	N	N	N	N
Village Hall Fieldcrest Ave	Red Maple	12.3	60	Y	N	Y	N	N	N
Village Hall Fieldcrest Ave	Red Maple	13.0	65	Y	N	N	N	N	N
Village Hall Main Entrance	Red Maple	6.8	85	Y	N	N	Y	N	N
Village Hall Sunset Ave	Red Maple	18.5	55	Y	N	Y	N	N	N
Village Hall Sunset Ave	Red Maple	15.9	30	N	N	Y	N	N	L
Village Hall Sunset Ave	Red Maple	25.5	40	N	N	Y	N	N	L
Woodlawn Drive	Northern White Cedar	6.0	90	N	Y	N	N	N	N

Appendix D – Ash Tree Identification Bulletin



Extension Bulletin E-2942










Reprinted, March 2007

Ash Tree Identification

Ash species attacked by emerald ash borer include green (*Fraxinus pennsylvanica*), white (*F. americana*), black (*F. nigra*), and blue (*F. quadrangulata*), as well as horticultural cultivars of these species. Green and white ash are the most commonly found ash species in the Midwest with blue ash being rare.

While other woody plants, such as mountainash and pricklyash, have “ash” in their name, they are not true ash, or *Fraxinus* species. Only true ash are susceptible to attack by emerald ash borer.

To properly identify ash trees, use the following criteria:

	<p>Branch and Bud Arrangement</p> <p>Branches and buds are directly across from each other and not staggered. When looking for opposite branching in trees, please consider that buds or limbs may die; hence not every single branch will have an opposite mate.</p>	
 <p><small>Diane Brown-Rytlewski</small></p>	<p>Leaves</p> <p>Leaves are compound and composed of 5-11 leaflets. Leaflet margins may be smooth or toothed. The only other oppositely branched tree with compound leaves is boxelder (<i>Acer negundo</i>), which almost always has three to five leaflets. White ash (on left) and green ash (on right)</p>	
 <p><small>*Paul Way, Iowa State University</small></p>	<p>Bark</p> <p>On mature trees (left), the bark is tight with a distinct pattern of diamond-shaped ridges. On young trees (right), bark is relatively smooth.</p>	
 <p><small>*Paul Way, Iowa State University</small></p>	<p>Seeds</p> <p>When present on trees, seeds are dry, oar-shaped samaras. They usually occur in clusters and typically hang on the tree until late fall, early winter.</p>	<div>   <p>Emerald Ash Borer</p> </div>

Appendix E – Urban Forestry Startup Grants



URBAN FORESTRY STARTUP GRANTS

Urban forestry startup grants support small projects focused on initial steps in community tree care and management. A long-term goal for applicants should be development of a sustained community tree management program.

Application deadline is Oct. 1 for projects to be completed between Jan. 1 and Dec. 31 of the coming year. Resolution required with application.

ABOUT

Grants range from \$1,000 to \$5,000 and require a 50–50 match (total project cost range is \$2,000 to \$10,000).

The project sponsor must initially fund 100% of project costs with cash, in-kind contributions and/or donations. Upon completion, the project sponsor requests reimbursement for 50% of eligible costs (501(c)(3) nonprofit organizations may request an advance when a grant is awarded).

Only one startup grant may be awarded to an applicant per year.

Projects begin Jan. 1 and must be completed within one calendar year.

WHO MAY APPLY

Cities, villages, towns, counties, tribes and 501(c)(3) nonprofit organizations who meet two or more of the following conditions:

- Starting, or recently started, a community-wide tree care program.
- Resuming tree care and management activities that were once a regular community-wide program that ended.
- Community tree care (planting, pruning, removal) by staff or contractors is infrequently performed.
- Involvement and support for community trees and their care by boards/committees, elected officials, organizations and/or residents is low to non-existent.
- There are no trained staff, contractors or volunteers authorized to handle, advise or oversee community tree care and management.

A maximum of three urban forestry startup grants may be awarded to an applicant within the lifetime of the startup grant program. To be eligible for a third startup grant, an applicant must either: a) have an existing tree inventory; or b) use the grant process to complete one.

ELIGIBLE PROJECTS AND COSTS

Projects must relate to community tree management, maintenance or education within Wisconsin cities, villages or other areas of concentrated development.

Projects by 501(c)(3) organizations must focus on their community's trees.

Projects may consist of **no more than three** of the following eight components:

- tree planting;
- tree pruning;
- tree removal;
- tree inventory;
- insect and disease treatment;
- staff training;
- urban forestry management plan; and
- information/education/outreach (may include forming a tree board, writing a tree ordinance, staff and/or volunteer training, or improving awareness of the importance of community trees and their management).

Eligible costs are those necessary for completing the project and incurred during the project period. Costs must be documented, reasonable and consistent with the project scope. Examples include:

- salaries and fringe benefits of people working directly on the project;
- cost of services, supplies, equipment or facilities used on the project; and
- value of labor, services, supplies, equipment or facilities donated to the project by third parties.

HOW TO APPLY

Review the [urban forestry grant application guide](#) for more details.

- Obtain a resolution from your governing body designating a representative to file the application and handle all grant actions on behalf of the applicant.
- Complete application form [8700-298](#). The form is electronically fillable, printable and savable.
- 501(c)(3) organizations must include a copy of their constitution, bylaws or articles of incorporation, unless already on file with the DNR urban forestry program.

Many current browsers do not open PDF forms properly. Follow the instructions below to open the forms on this page.

1. From a desktop computer, download the PDF form (right-click on the link, then select "Save link as" or "Save target as").
2. Make a note of the file location and file name so you can access the file from your device. Do not double-click the file.
3. Open the Adobe Reader software then select "File > Open" then browse to the PDF file you saved on your device.

See [PDF help](#) for additional information.

Appendix F – Rain Garden Sign Examples

Rain Gardens: Nature's Way Of Clearing The Storm

A rain garden is an attractive, sunken landscape bed of native perennials that captures storm water runoff so it can be absorbed into the ground and cleansed of pollution.

What Are The Benefits Of Rain Gardens?

- Provide storage for floodwater and help prevent ditches and sewers from being overwhelmed.
- Improved water quality by filtering pollutants from stormwater such as grass clippings, pesticides, fertilizers, gas, oil and other kinds of residue.
- Provide an excellent habitat for wildlife, especially when planted with native species.
- Beautify neighborhoods with minimal maintenance once the plants are established.

How Can I Learn More?



The Rain Garden Initiative of Toledo-Lucas County is a collaborative effort of local environmental organizations, agencies and businesses. The goal is to assist interested citizens in constructing rain gardens by providing demonstration gardens, technical training, and public information and involvement. For more information, please contact any partner or visit the Initiative website at www.raingardeninitiative.org.

Downspouts

Downspouts can be directed to the rain garden by creating a grassy swale, creating a rock-lined channel, extending the downspout across the lawn, or by running a PVC pipe underground from the downspout to the garden.

Mulch

A shredded hardwood mulch is used to minimize weeds and maintain moisture in the garden. The garden will be under water after a rain, so avoid using a mulch that will float.

Soils

The correct soil mix is vital to the success of a rain garden. A soil mix of 50% sand, 40% loamy topsoil, and 10% organic matter will increase infiltration and help process nutrients.

Roots

Deep-rooted plants are the essential component of the rain garden, as they penetrate and break up the soil. The extensive root systems prevent soil erosion and minimize garden maintenance.

Native Plants

Native plants have deeper root systems that absorb more water and are adapted to local soil types. They are easy to maintain once established, and require little to no watering. Plus, native plants attract beneficial pollinators, birds and butterflies.

Berm

The earthen berm at the bottom of the slope is designed to hold water in the garden.

RAIN GARDEN PLANTS PICTURED ABOVE

Cardinal Flower (*Lobelia*)
Purple Coneflower (*Echinacea*)

Queen of the Prairie (*Filipendula*)
Swamp Milkweed (*Asclepias*)
Goldenrod (*Solidago*)

Big Bluestem Grass (*Andropogon*)
Blazing Star (*Liatris*)

FUNDING FOR THIS SIGN WAS MADE POSSIBLE THROUGH USDA-NATURAL RESOURCES CONSERVATION SERVICE.



Monarch
Danaus plexippus



BIOSWALES

Reducing Harmful Runoff Pollutants



Tiger Swallowtail
Papilio glaucus



Joe-Pye Weed
Eutrochium purpureum



Foxglove Beardtongue
Penstemon digitalis



Blue Lobelia
Lobelia siphilitica



Purple Coneflower
Echinacea purpurea



New England Aster
Aster novae-angliae



Culver's Root
Veronicastrum virginicum



Big Bluestem
Andropogon gerardii



Blue Vervain
Verbena hastata



Coreopsis
Coreopsis grandiflora

These planted areas along the White Pine Trail are known as 'bioswales'. A bioswale is a shallow depression designed to collect stormwater runoff using native plants. Every time it rains, oil, fertilizer, and other nonpoint source pollutants are washed off the parking lot and into a storm drain which leads to the river. The deep roots of native plants help water to be absorbed into the soil which filters out the pollutants, resulting in cleaner, healthier water.

Special Thank You To Our Generous Sponsors Listed Below



This NPDES Pollution Control project has been funded wholly or in part through the Michigan Department of Environmental Quality's Nonpoint Source Program by the United States Environmental Protection Agency under assistance agreement C907547C. It is a Grand Valley State University - Groundswell for the Lower Grand River Education Initiative project.

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Appendix G – Tree City USA

Tree City USA®

Take Pride in a Greener Community

You have seen the signs along the road and perhaps a Tree City USA flag flying at city hall in other communities. Towns and cities that have received their Tree City USA recognition take pride in this distinction. And the people who live there enjoy the valuable benefits of having a greener, healthier community.

Tree City USA is a national recognition program that began in 1976 and is sponsored by the Arbor Day Foundation in partnership with the U.S. Forest Service and National Association of State Foresters. By meeting four fundamental standards, an incorporated municipality of any size can qualify.

Applying for the Tree City USA award is easy and the recognition is outstanding. There are now thousands of communities that proudly receive roadside signs, fly the flag of Tree City USA and — knowing the value of participation — renew their application every year.

“Tree City USA is a great way to get the community involved in green space. A community that feels involved will take better care of their environment.”

— ALISON LITCHY, FORT SMITH, AR

FUNDAMENTAL COMPONENTS OF TREE CITY USA

■ STANDARD 1: A TREE BOARD OR DEPARTMENT

The formation of a tree board or department often stems from a group of citizens. In some cases a mayor or city officials have started the process. Either way, the benefits are immense. Involving residents and business owners creates wide awareness of what trees do for the community and provides broad support for better tree care.

■ STANDARD 2: A TREE CARE ORDINANCE

City ordinances reflect the values of a community. That is, they speak about what its residents believe are worth protecting to create or maintain their quality of life and an environment that is both safe and pleasant. Trees are certainly worthy of this formal attention for the common good.

A public tree care ordinance encourages beautification, air cooling and purification, noise abatement, property

value enhancement, and all the other attributes of trees in cities of all sizes. It also enables city government to prevent and control destructive insects and diseases, avoid unnecessary costs and liability from hazardous trees and tree-related accidents, and protect residents from unscrupulous or careless operators.

■ STANDARD 3: A COMMUNITY FORESTRY PROGRAM WITH AN ANNUAL BUDGET OF AT LEAST \$2 PER CAPITA

Most communities probably already spend at least \$2 per capita. Also, community trees — when cared for — can actually save money. A managed program can ensure benefits that surely outweigh costs. It does require dollars to plant and keep trees in healthy condition, but this should not be a barrier to becoming a Tree City USA.



■ STANDARD 4: AN ARBOR DAY PROCLAMATION AND OBSERVANCE

The importance of this tree-planting holiday provides an excellent opportunity to educate about trees and tree care. It also creates pride within the community and can help garner public support for the city's entire urban forestry program.

Part of the fun of Arbor Day is creating something that will be enjoyed by the whole community. Visit arborday.org/celebrate for ways to make your community celebration a memorable one.

 **Arbor Day Foundation®**
100 Arbor Avenue • Nebraska City, NE 68410

HOW TO EARN TREE CITY USA RECOGNITION

1. Get Your Community Interested
— Find Allies and Partners



2. Contact Your State Urban and
Community Forestry Coordinator



3. Work Together to Fulfill the Four
Tree City USA Standards



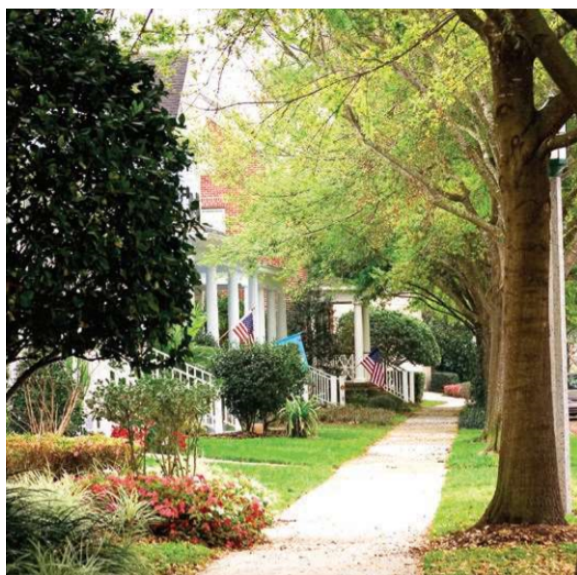
4. Celebrate Arbor Day!



5. Submit your Application

Communities that receive Tree City USA recognition receive support that helps make the celebration easy to plan and conduct. Here is some of what you will receive in your first year:

- Two road signs.
- A 4' x 6' Tree City USA flag.
- Beautiful wall plaque.



With a bit of organizing, virtually any community — large or small — can qualify for Tree City USA recognition. The end result will be safer community trees, better informed citizens, and a higher quality of life for residents and businesses.



TREE CITY USA®: *Your Community Is Ready*

As the first step in helping your town or city become a Tree City USA community, an important person for you to contact is the urban and community forestry coordinator in your state forester's office.

Visit arborday.org/coordinators for your contact's information and a directory list of all states.

Your state coordinator is the resource for beginning your Tree City USA application. He or she will have answers to your questions and will be more than happy to help your community become a Tree City USA.

How to Apply

Simplicity is one of the principles of the Tree City USA application and annual recertification process. Experience has shown that getting started as a Tree City USA often results from a single individual or a small group taking the lead. Here is all you have to do:

A Talk with the person in your community currently responsible for trees (city forester, park superintendent, public works director, etc.). Also discuss with your mayor, city manager, city clerk, a key council person, or whomever else in your city government should be informed and whose support you will need.

B Go to portal.arborday.org. The Tree City USA application can easily be completed online.

C The application is normally completed by the city forester or other person responsible for trees, or the tree board chair. Once your application is submitted, it's reviewed at a state level and then it will be reviewed by the Arbor Day Foundation at a national level. To learn more about applying and your state's deadlines visit arborday.org/treecityusa.



 **Arbor Day Foundation®**
100 Arbor Avenue • Nebraska City, NE 68410