Village of Poynette
Urban Forestry Plan & Tree Inventory Analysis

Prepared by: May 8, 2019

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VILLAGE OF POYNETTE
COLUMBIA COUNTY, WISCONSIN

RESOLUTION NO. PR-2019-06
RECOMMENDING ADOPTION OF URBAN FORESTRY PLAN & TREE INVENTORY

WHEREAS, in 2011 the Village of Poynette contracted with Bluestem Forestry Consulting, Inc. to complete and adopt an Urban Forestry Plan & Tree Inventory along with an Emerald Ash Borer Readiness Plan, and

WHEREAS, in 2018 the Parks and Recreation Commission desired to update the plan and budgeted funds to complete the work in 2019, and

WHEREAS, the Village supported and obtained a 50% matching grant from the Wisconsin DNR to assist in funding the project, and

WHEREAS, Bluestem Forestry Consulting, Inc. was contracted to complete the update.

NOW, THEREFORE, BE IT RESOLVED, that the Poynette Parks and Recreation Commission recommends to the Village Board the approval of the attached Urban Forestry Plan & Tree Inventory Analysis.

Adopted this 7th day of August 2019.

Authorized Signature:

Davy Tomlinson
Davy Tomlinson
Parks and Recreation Commission Chairperson

Natalie Megow
Natalie Megow
Village Clerk/Treasurer

VILLAGE OF POYNETTE
COLUMBIA COUNTY, WISCONSIN

RESOLUTION NO. 19-1209
ADOPTION OF URBAN FORESTRY PLAN & TREE INVENTORY ANALYSIS

WHEREAS, in 2011 the Village of Poynette contracted with Bluestem Forestry Consulting, Inc. to complete and adopt an Urban Forestry Plan & Tree Inventory along with an Emerald Ash Borer Readiness Plan, and

WHEREAS, in 2018 the Parks and Recreation Commission desired to update the plan and budgeted funds to complete the work in 2019, and

WHEREAS, the Village supported and obtained a 50% matching grant from the Wisconsin DNR to assist in funding the project, and

WHEREAS, Bluestem Forestry Consulting, Inc. was contracted to complete the update, and

WHEREAS, the Parks and Recreation Commission recommended to the Village Board adoption of the updated draft Urban Forestry Plan & Tree Inventory at their August 7, 2019 meeting.

NOW, THEREFORE, BE IT RESOLVED, that the Poynette Village Board hereby approves the attached Urban Forestry Plan & Tree Inventory Analysis.

Adopted this day August 12, 2019

Authorized Signature:

Diana L Kaschinske
Diana L. Kaschinske
Village President

Natalie Megow
Natalie Megow
Village Clerk/Treasurer

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EXECUTIVE SUMMARY

The urban forest of Poynette provides a multitude of aesthetic, economical, and environmental benefits to citizens, businesses, and visitors alike. Beyond shade and beauty, trees also have practical benefits; provide public services and monetary value. Unlike other public infrastructure components, properly planted and maintained trees increase in value over time.

To help ascertain the state of Poynette's urban forest, Bluestem Forestry Consulting Inc. completed a public tree inventory along street rights-of-way, as well as at seven parks during April of 2019. These parks are: Colby, Columbia, Jamieson, Old Settlers, Paquette, South and Veteran's Memorial. Bluestem completed Poynette's first tree inventory in 2011 and this marks the second complete inventory. It was clear that Poynette utilized the inventory from 2011 and completed an incredible number of forestry tasks during the intervening 8 years. This document reports the findings of the 2019 inventory and makes specific, prioritized recommendations for managing the urban forest resource beginning in 2019 and establishes a routine schedule of maintenance activities beginning in 2022 based upon inventory findings, current staffing, budgets, EAB concerns and tree circumstances. This plan will also compare and contrast the forest as it has changed from 2011 to 2019. The specific trees and actions to complete per year corresponding to Attachment 1 have been provided to the Village in a separate tree inventory database.

Important points of the inventory and current tree management program include:

- *A total of 1,158 trees, 191 planting sites and 30 stumps were inventoried. 863 of these are street trees and 295 are park trees.*
- *A total of 105 (9.1%) trees are green or white ash and are susceptible to Emerald Ash Borer. This is a significant reduction in the ash population of 192 since 2011. Poynette has been proactive at removing small diameter ash trees in advance of EAB. At this time, EAB has been confirmed within Poynette as the inventory indicated there are several trees experiencing dieback and severe infestation. The average diameter of ash trees is 14.2". This plan recommends removing all of these trees from the public tree population over the next three years.*
- *There are 43 trees recommended for removal for safety reasons. This is 3.1% of total maintenance needs. The average diameter of these removals is 23.3". A typical first-time inventory averages removals between 3-10% and the removal percentage in 2011 was 8.0%. Again, this indicates a proactive, responsible forestry program over the ensuing 8 years.*
- *Twenty-four trees should be pruned for safety reasons or for cleaning/dead branches (1.7% of total inventoried population, down from 8.0% in 2011). A typical inventory averages 3-7% safety prune.*
- *Ideally, the forest should be comprised of not more than 5% of any one species and 10% of any one genus. Three genus' are over-represented in Poynette's public tree population. These are (in order of population size): maple, ash and pine. Limited species distribution could result in a population crash if an insect or disease were to attack any one particular species.*
- *More staff time needs to be spent on forestry duties. This plan recommends 88 work days per year need to be devoted to forestry activities to maintain the urban forest properly and healthily. One activity that could really reap future benefits is small tree pruning. This saves time and money as the trees age and mature and greatly improves tree health.*
- *Approximately 75% of sites suitable for trees on street rights-of-way are currently growing a tree. Ideally, this rate would be 100% and all available sites would be home to a tree. Poynette has been very forward thinking and has eliminated a great deal of risks or risk trees through pruning and removal. The next step to round out forestry activities is to beginning a robust tree planting program*

STATEMENT OF PURPOSE AND SCOPE

The purpose of having an urban forest management plan is to ensure that the citizens of Poynette will enjoy the benefits of trees through proper arboricultural techniques and management practices.

The development of a long-range urban forestry maintenance and management plan based on current research and inventory results will provide the foundation for an ongoing program that will result in a healthier and safer community. In particular, a management program can be used to monitor trees for safety risks on a continual basis, will help reduce storm damage, allow work to be executed more efficiently, and establish and prioritize annual budgets.

This plan focuses on existing conditions that require immediate attention, while developing a routine forestry program that will help protect and preserve the Village-managed trees in a cost-effective and efficient manner.

In addition, this plan will provide management options that will allow the Village to mitigate the disruption to its urban forest caused by Emerald Ash Borer (EAB). EAB has been confirmed in Poynette. By taking a systematic approach, it will allow the Village to minimize costs and distribute them over a manageable time period, as well as lessen the social and economic impact that such an infestation will have on the quality of life in the community.

The Director of Public Works, Parks and Recreation Commission, Village Board and Administration will be responsible for implementing this program, inventory updating and seeing that program provisions are carried out. They are also charged with a plan revision at the end of this five year plan duration.

TREE INVENTORY

The first and most important step in managing a community's urban forest resource is to conduct a tree inventory. A tree inventory is the process of counting, characterizing, and recording information about the public trees that make up the publicly owned urban forest. It is a useful tool that documents important information related to the trees.

Documentation is useful for identifying trees a community is responsible for maintaining. This information can then be used to identify areas of susceptibility (i.e. high ash component), low diversity (species and/or age), and future planting opportunities. The information can also be used to document a risk assessment program where trees prone to failure are identified and can be preemptively managed. Additionally, in the case of an accident, being able to produce a risk assessment and work history log indicates the community's active role in maintaining safe trees. The ultimate goal of an inventory is to provide information essential for developing a community urban forest management plan that provides direction for urban forestry initiatives.

Bluestem Forestry Consulting Inc. completed a public tree inventory along street rights-of-way, as well as at Colby Park, Columbia Park, Jamieson Park, Old Settlers Park, Paquette Park, South Park and Veteran's Memorial Park during April of 2019. Wooded, high density park areas and unmaintained street right-of-way areas were not inventoried.

The following data was collected: GPS coordinates, address, street/park name, side street, species, condition, diameter, prioritized maintenance needs, growing space, overhead electric utility, defects, condition percentage, date and

miscellaneous comments. An ID # was assigned to each tree. A definition of inventory terminology including condition ratings and maintenance recommendations can be found in the following sections as well as on the MS Excel database. Data was delivered to Poynette as an MS Excel database as well as an ArcView shapefile.

Species Composition and Diversity

Fifty-four different species were identified within the Poynette urban forest. This is a good number of species. Three genera are over-represented. Ideally, the forest should be comprised of not more than 5% of any one species and 10% of any one genus. For illustration, maple is considered a genus and includes each different species of maple. Each type of maple such as sugar maple is considered a species. Limited species distribution could result in a population crash if an insect or disease were to attack any one particular species.

Similar to Dutch elm disease which destroyed American elms in the 1970-1980's, the emerald ash borer (EAB) is fatal to ash trees. The inventory identified 105 ash trees (9.1% of its public tree population), all of which are threatened by EAB. These figures do not include private ash trees. The Asian Longhorned beetle (ALB) is a threat to America's hardwood trees and particularly maple. There is not a cure or treatment for ALB and it currently infests areas in Massachusetts, New York and Ohio. Maple comprises 32.5% of all public trees in Poynette and ALB is another reason to diversify the forest.

The most common trees growing in Poynette are:

TOP EIGHT SPECIES SUMMARY TABLE		
Species and/or Cultivar	Count	Percentage of Total Population
Norway Maple	185	13.6%
Green Ash	76	6.6%
Sugar Maple	72	6.2%
Silver Maple	70	6.0%
Red Pine*	66	5.7%
Crabapple	59	6.1%
Black Locust**	57	4.9%
Red Cedar*	56	4.8%
Other (46 other species represented)	546	47.1%

**located primarily at Jamieson Park*

***located primarily at Old Settlers Park*

Genus and species that are over the 10% genus and 5% species recommendations are:

SPECIES/GENUS OVER RECOMMENDED LIMITS 5% of any one species, 10% of any one family		
Species/Family	**Count**	**Percentage of Total Population**
Maple Genus (Acer)	378	32.5%
Norway Maple	158	13.6%
Sugar Maple	72	6.2%
Silver Maple	70	6.0%
Ash Genus (Fraxinus)	105	9.1%
Green Ash	76	6.6%
Pine Genus (Pinus)	76	6.6%
Red Pine	66	5.7%

Size Distribution

To optimize the value and benefit of the urban forest, an uneven-aged population is desired to allow allocation of annual maintenance costs uniformly over many years and to assure continuity in the overall tree canopy. A desirable distribution in a community's forest is to have a high proportion of young trees to offset establishment and age related mortality, as the percentage of older trees declines with age. This "ideal", uneven distribution suggests the largest fraction of trees (40% of the total) should be young, with diameters less than 8" in DBH, while only 10% should be in the large diameter classes (>25" DBH).

As the table below illustrates, Poynette' size distribution is really good in three of four areas. The only area out-of-range is the 0-8" tree population. The recommendation is to have 40% of trees in this category and Poynette has only 18.0%. Poynette needs to begin tree planting in earnest. This is due to minimal tree plantings in the last several years. Poynette has focused on removing or pruning high risk trees and some of that remains to be completed, which is appropriate for a first time tree inventory. There has been some replanting associated with street construction and the tree species selection was excellent as were the planting techniques. Continuing this will enhance and grow Poynette's urban forest.

Larger trees in Poynette can be found throughout the Village, but many of them can be found in in parks. The average diameter of trees in Poynette is 15.0". Maintenance on older/larger trees is more time consuming than small trees. On average, a 25" diameter tree may take an experienced crew up to 2-3 hours to properly prune and it will require large equipment such as a bucket truck and multiple crew members. It is critical to recognize that Poynette has the proper equipment and staffing levels to complete most prunes and removals in-house, but that due to the large diameter of many of their trees, it will require a very significant time commitment to properly manage their forest. Fortunately, most pruning and removals can be completed during February, March and April when other public works projects are slow.

While, there aren't many small diameter trees, pruning small diameter trees is one of the most beneficial maintenance activities for trees. There are many reasons to prune young trees including making trees more structurally sound and

more storm resistant resulting fewer crew call-outs and it often results in lower maintenance costs in the future because you are removing fewer large branches as the tree matures. Poynette has an outstanding opportunity to care for its trees while they are young, saving time and money now and long into the future. The chart below illustrates the current tree size distribution in Poynette:

SIZE DISTRIBUTION

Existing	dbh*	Ideal**
18.0%	0-8"	40.0%
34.4%	9-16"	30.0%
23.1%	17-24"	20.0%
14.5%	25+"	10.0%

*diameter at breast height (4.5' above ground)
** based on recommendations from 2011 Minnesota Shade Tree Short Course

Condition Distribution

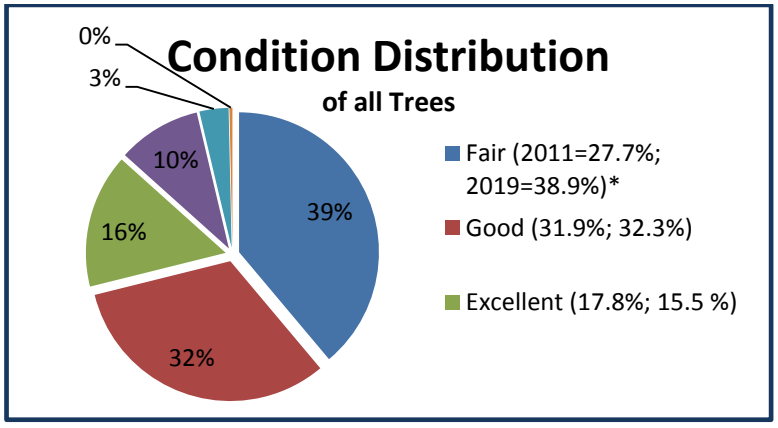
A condition rating helps to assess overall tree health and to evaluate a species structure and performance. For the 2019 inventory, Bluestem Forestry Consulting Inc. used criteria adapted from the International Society of Arboriculture Valuation of Landscape Trees, Shrubs and Other Plants: A Guide to the Methods and Procedures for Appraising Amenity Plants (Ninth Edition) as the basis for the field condition rating.

At least seven factors were examined and rated to determine the condition of a tree. These factors are crown development, trunk, major branch structure, twig growth rate, foliage health, insects/diseases and roots. General descriptions of the criteria used to categorize each condition are in the following table.

Rating	Description
Excellent	A tree in excellent condition has no visible defects and appears to be in perfect health. The tree will exhibit all of the characteristics typical of its species. An excellent tree can be expected to live well into the future.
Good	A tree in good condition has a sound trunk and a full canopy and has only minor mechanical injuries such as minor trunk scarring that will eventually heal. The tree will exhibit most of the characteristics associated with its species and can be expected to live for many years.
Fair	A tree in fair condition will be exhibiting minor to moderate defects. Some situations that would warrant a fair rating include: a thinning canopy, twigs growth may only be 1/2 the expected rate, significant mechanical injury such as scarring on the trunk, insects or disease may be present but are controllable and the crown may be lacking the natural or desired symmetry characteristic to the species. If given routine maintenance such as pruning and mulching a tree that is graded fair will contribute to the forest for many years.
Poor	A poor tree will be expressing low vigor and significant decline as evidenced by branch dieback, abnormal leaf size, early fall coloration, trunk decay due to injury or canker or the production of new branches on the main stem. A tree in poor condition will most likely require removal, but may be improved with priority pruning.
Very Poor	A tree in very poor condition is on the verge of dying. Dieback will be severe or it may be lacking a full crown. Trunk/crown cavities or decay, severe cracks and seams or severe root problems may also be present. Removal for safety will be required.
Dead	A tree in dead condition is simply a dead standing tree. These will most likely occur in wooded or unmaintained areas, but may also occur with smaller new plantings that have failed. These trees will require removal.

The tree inventory results show that a large majority of Village trees (86.7%) are in fair, good or excellent condition. This is a really high percentage and is again due to Poynette's hard work since the last inventory. Dead trees only make up 0.003%. P o o r and very poor trees make up 9.7% and 3.5% of the trees respectively. The goal for Poynette should be no tree in less than fair condition and they are close. The number of trees in poor and very poor condition is primarily due to the failure of over mature trees and EAB.

The chart below is a graphic representation of condition distribution:

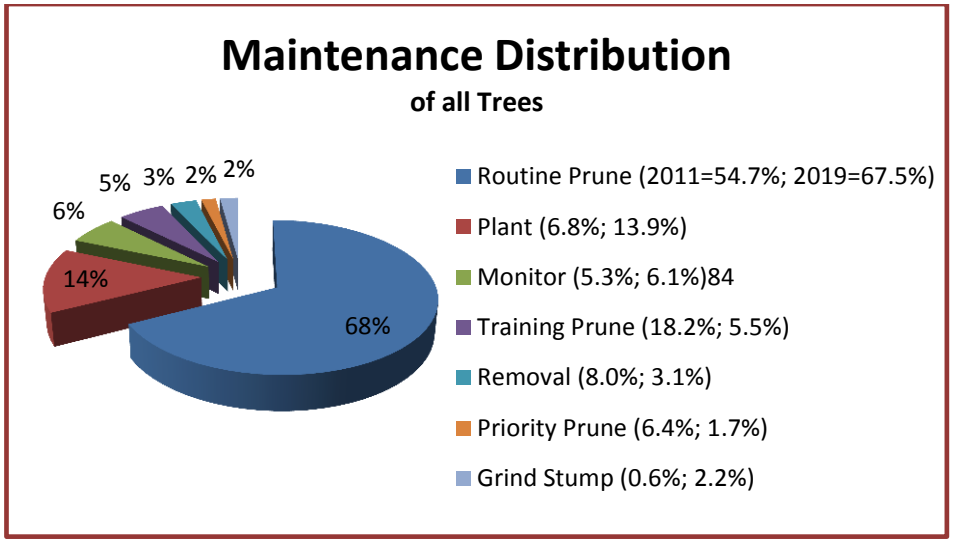


Maintenance Distribution

Each tree inventoried was assigned a maintenance category. Field judgments were made from the ground based on observation and hazard estimation. Criteria were adapted from two sources: A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas (Second Edition) by Nelda Matheny & James Clark and from a Minnesota Department of Natural Resources Publication How to Detect, Assess and Correct Hazard Trees in Recreational Areas. The following are the definitions of the maintenance categories:

Rating	Description
Removal	Trees designated as a removal are either dead or have one or more defects that cannot be remedied. These trees will most likely have a severe trunk defect such as a cavity or extensive decay, have severe cracks associated with weak unions or have a large percentage of crown death and are safety risks. These trees must be removed immediately.
Prune Priority	These trees have severe deadwood, hangers or broken branches that require remediation as soon as possible. Trees with unattached hanging branches or dead attached branches will be listed in this maintenance category. Overall re-evaluation of the tree while pruning may result in removal of the tree if more extensive problems are noted.
Monitor	These trees are experiencing decline or some other defect and need monitoring to be sure that they do not continue to fail and need removal.
Routine Prune	All trees need to be placed on a cycle of trimming to correct structural problems or growth patterns that will eventually affect the tree adversely. Routine pruning will result in a healthier, more vigorous tree and will extend the life of most trees. A routine pruning cycle of once every 5-8 years is ideal.
Training Prune	Training pruning is the structural pruning of all trees 10 years of age or younger. Removing poorly attached co-dominant, crossing and competing limbs while the tree is young, resulting in small cuts and wounds will produce a well-balanced mature crown. This is the most cost-effective form of all maintenance.
Grind Stump	Existing stumps.

The following chart shows the breakdown of trees by maintenance need:



Parks

Seven parks were inventoried in Poynette. A total of 295 trees were inventoried in these areas. This represents 25.5% of the total public tree population. Park/municipal area trees and street trees are combined in the 'Schedule of Activities.'

There are a few notable park items. Jamieson Park has traditionally been used as a campground, but it is no longer being used in this manner. There are a few ideas for re-purposing the park with the most likely result is that it will be used as a dog park. It is a large park with many mature trees (particularly oak, pine and cedar) and it connects to trails that lead to Rowan Park. It is an outstanding resource and would be an excellent dog park.

Old Settlers Park is home to a large population of black locust. Black locust is an invasive species and is generally an undesirable tree. While removing all of these would result in very few trees remaining, Poynette has done an excellent job of whittling down the black locust population and they should begin replanting a variety of species which would help this park continue to be an asset to Poynette.

Below is a breakdown of the tree counts per park/municipal area. Valley View Park did not have any trees.

COUNT OF TREES PER PARK	
Park Name	**Count of Trees**
Colby Park	11
Columbia Park	8
Jamieson Park	192
Old Settlers Park	62
Paquette Park	59
South Park	2
Veteran's Memorial Park	15
TOTAL TREE COUNT	**295**

SUCCESSES AND CHANGES FROM 2011

Poynette forestry program has really been a success story. Through hard work and effort they have greatly improved the health of their overall forest and increased safety to residents and visitors. Some special successes include:

- Removal and replanting of small diameter ash trees in the Columbia Park neighborhood. This was proactive management of ash trees while the trees were small, manageable and more affordable to remove/replant.
- Removal of a large number of risk trees in Jamieson Park. Because this park was used for camping, people are using the park at all hours and days. Removal and pruning of high risk trees greatly increased the safety of users.
- Downtown tree management was wise and thorough. The downtown trees are entirely ash and the Village began treating these to prevent EAB a few years ago and prior to that they widened the tree cut-outs where the trees are planting to encourage tree health.
- Reduction of invasive black locust in Old Settlers Park.
- Increase in overall health of tree population. Trees in fair, good or excellent health in 2011 was 77.4%. In 2019 that number increased to 86.7%.
- Routine maintenance developed into a systematic 'zone' based system allowing for more efficient management of staff and time as well as better care for all trees.
- Tree planting in new street construction areas was excellent from a planting technique and species selection standpoints.
- Removal of small numbers large diameter ash trees that are beginning to show signs of EAB over the last 2-3 years. Poynette has successfully begun removal of its ash population over the course of several years.

DOWNTOWN TREES

There are 10 trees in the downtown area growing in tree cut-outs. Cut-outs are the concrete holes cut into a sidewalk area to accommodate trees. The trees are comprised of green and white ash and the average diameter is 12". A few years ago, the Village enlarged the cut-out area because the health of the trees was being negatively impacted. They also began treatment of the trees to prevent EAB. These two management strategies were very effective and the trees regained their health and did not get EAB. However, the trees have once again begun to outgrow their cut-outs and the Village wishes to replace them with a different species. After discussion with the Village Administrator as well as the Director of Public Works, they would like to plant a tree that will not outgrow the cut-out as quickly, will not interfere with signage and will contribute to the welcoming nature of the downtown. The most likely tree species candidate is Japanese tree lilac.

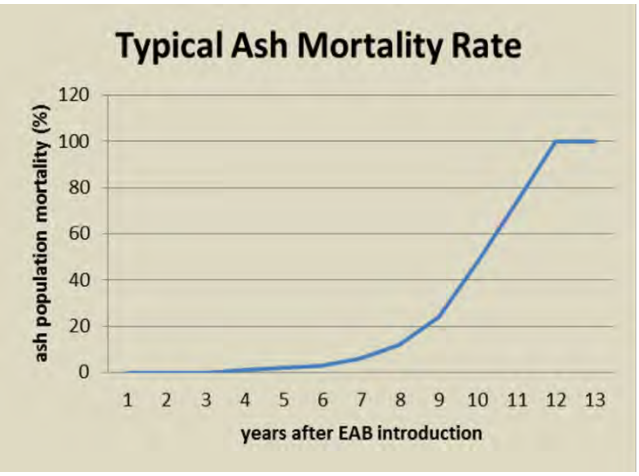
Japanese tree lilac are a smaller growing tree meaning they should not outgrow their cut-outs for a couple of decades. They also will not grow so tall as to block signage. And lastly, they have lovely, fragrant, white flowers that remain on the trees for nearly a month in late spring. There is no need to immediately remove and replant the existing ash as they are protected from EAB at present. It is in the best interest to remove ash throughout the public tree population that are already infested with EAB as they present a high risk of failure and then remove and replant the downtown ash. Other options include serviceberry or hophornbeam.

EMERALD ASH BORER PLANNING

The Emerald Ash Borer (*Agrilus planipennis*) is an exotic pest native to Asia that was identified in southeastern Michigan near Detroit in the summer of 2002. The adult beetles munch on ash foliage but cause little damage. The real damage is caused by the EAB larvae that feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients. It is suspected that the insect was initially introduced to the United States via solid wood packing material carried in cargo ships or airplanes originating in its native Asia.

Once infested with EAB, ash trees typically decline and die over a period of 2-3 years depending upon insect volume. The burden of dealing with volumes of dead and dying trees within a short period of time can place an enormous strain on community budgets, personnel and resources.

At present, the entire state of Wisconsin is under quarantine for EAB and it has been confirmed in the Poynette area. Because the ash has been confirmed in Poynette, they are at the 6-8 year spot on the mortality rate chart below. This means that trees in Poynette are already experiencing sever dieback from EAB. Poynette has made the decision to remove their ash trees rather than treat them and has already begun this task. It is expected that all untreated ash will die over the course of the next few years and removal needs to be completed within this same timeframe. The Schedule of Activities (Attachment 1) has all public ash being removed from the population by 2022. The Village should consider revising their ordinances relating to nuisance trees and whether to accept tree waste from private ash trees.



Marshalling yard/wood utilization. The Village of Poynette takes all of their wood waste to the Village yard site for chipping which is then made available to the public. If a contractor removes a tree, she/he will dispose of the waste. The Village may want to consider alternative uses for wood waste as their tree population grows larger. A good contact for additional wood waste options is Sabina Dhungana, WI DNR Forest Products Staff, sabina.dhungana@wisconsin.gov, phone 608-261-0754. The non-profit Wisconsin Urban Wood (WUW) may also be of assistance utilizing dead, risk or ash tree that have been removed. WUW can be reached by contacting Don Peterson, info@wisconsinurbanwood.org, phone 608-622-7212.

Community Outreach and Education

Public awareness is vital to slowing the spread of EAB, therefore it is never too early to begin the education and outreach process. Education and outreach plays a key role in communicating the effects of EAB on the Village's urban forest and increasing public awareness, understanding, and support for the Village's Urban Forest and Management Plan. Increasing public awareness of the Village's plan for EAB will also enhance the effectiveness of detection survey efforts, help to prevent adverse public reaction to control efforts, and promote compliance with regulations.

Ongoing communication, education, and outreach with employees, public officials, and citizenry will be the key components of the initial public awareness response. The efforts will continue and be expanded upon as more information becomes available. In addition, coordinated public information dissemination to residents and the media from both the state and local levels will ensure that information reaches the public as quickly as possible.
Recommendations:

Provide information to residents assisting with identification of ash on their properties and provide information on treatment options or the removal option. Be sure to stress that ash deteriorate very quickly and the longer the tree deteriorates, the more expensive removal costs will be. ee newest WDNR/UWEX pub Dangers and costs of EAB infested trees

- Find the latest Factsheets from UWEX and the WI DNR at http://labs.russell.wisc.edu/eab/eab-news-and-resources/#Management_Factsheets.
- Educate employees, public officials, and citizens about EAB, the tree management guidelines presented in this plan, and proper wood utilization methods.
- Educate and inform all municipal leaders and officials through presentations and written reports as needed.
- Develop an EAB page on the Village website with updates on Village activities and links to major EAB informational sites. A major information portal is www.emeraldashborer.wi.gov.
- Inform the community on EAB through local media outlets, direct or indirect mailing (tax and utility bills), newsletters, fliers, public meetings, neighborhood associations, and local garden clubs.
- Public service announcements will be encouraged through local media to educate the public about EAB.

Other Insects for Consideration

Asian Longhorned Beetle (ALB)

ALB is an invasive insect originally from China that has become a serious problem to trees in certain parts of the United States. The beetle's larvae creates tunnels by girdling stems and branches on trees. The insect has been reported to have entered the United States via wood packing materials originating from China.

Although ALB seems to prefer maple species (*Acer* spp.) in the United States, it has also been found in horsechestnut/buckeye species (*Aesculus* spp.), alder species (*Alnus* spp.), birch species (*Betula* spp.), poplar species (*Populus* spp.), willow species (*Salix* spp.), and elm species (*Ulmus* spp.). This list in not conclusive since a complete list of host trees in the U.S. has not been determined.

The adult beetles are persistent from July to October, but can be found later in the fall if temperatures remain warm. After adults emerge from their larvae tunnels, they bore another tunnel through wood, creating a round exit hole in the tree bark. Adults generally remain on or around the trees they originated from, only traveling short distances to feed and reproduce.

At the present ALB has not been found in Wisconsin. For more information on the identification and management of ALB please refer to http://asianlonghornedbeetle.com/.

Other Diseases for Consideration

Oak Wilt (OW)

The disease is caused by the fungi *Ceratocystis fagacearum*, which attacks the water-conducting (vascular) system of trees. A tree responds by blocking its vascular system to contain the disease and, in doing so, cuts off the water supply to its leaves. Poynette has 97 oak trees within its public tree population. These are split almost equally between bur oak (Quercus macrocarpa), Northern red oak (Quercus rubra) and white oak (Quercus alba). While bur and white oak tend to be less susceptible to oak wilt than red/black oaks, all oaks should be planted carefully and cared for at the proper time of year because of the risk from oak wilt.

Oak wilt can be spread by insects that carry the pathogen on their bodies from an infected tree to an uninfected tree. It also spreads via the vascular system of grafted roots of adjacent trees. If the disease is allowed to progress, it will spread to healthy oaks that are connected by the roots (root grafts) to the diseased trees. In forested areas where oak is common and root grafting is widespread, an ever-widening pocket of dead oaks will form. Where oak is mixed with other species and is a minor part of the forest, oak wilt will spread slower and may actually stop where roots are not grafted. New pockets of dead oak may also be formed by sap-feeding beetles spreading oak wilt above ground.

In urban areas oak trees are most easily infected by overland spread in the springtime, from bud swelling until two to three weeks past full leaf development. The Wisconsin Department of Natural Resources recommends that you avoid pruning, cutting, or wounding oak trees April through July (April, May, June, and July) in urban areas. Observations and unpublished research have shown that overland infection can occur after July, yet these mid-summer through early fall infections are not common. To take a very cautious approach, do not prune or otherwise wound oaks from April to October. In some years, spring comes much earlier. If daytime temperatures begin to reach the 60-degree mark, stop pruning oak at that time, even if it is still the middle of March.

The first signs of OW occurs when leaves in the upper crown turn a dull green, bronze, or tan beginning at the leaf margin. Soon after, the leaves will drop off with various degrees of discoloration. Brown streaks develop in the new sapwood. Trees in the red oak group are not known to recover once infected. The white oak group varies in species resistance to OW, but they usually die slowly over a period of several years.

STAFFING, EQUIPMENT AND TRAINING

Poynette has the benefit of quite a few pieces of equipment for tree work including dump trucks, Bobcat, front end loader, pick-up trucks, chipper, chainsaws, pole saws and safety equipment. The only piece of essential forestry equipment missing is an aerial lift truck. Because this is not owned by the Village, prunings of large trees and some removals will need to be contracted with a qualified firm. While this has been effective in the past, due to EAB, many local contractors are overwhelmed, including the firm Poynette typically uses. This results in slow response times and a delay in tree work. This plan recommends greatly increased levels of maintenance which will require a large time investment. The Village is encouraged to consider the purchase of an aerial lift truck as a way to save contract cost

while adding a useful piece of equipment to their inventory. Sharing equipment with other departments and even other communities may help to justify purchases and defray costs

The Village works with Alliant Energy to trim under and around power lines. They trim under all lines and assist with removals and prunings to under the power lines at which point the Village crew would complete the work.

The amount of forestry work currently completed by in-house staff is not sufficient to properly manage the urban forest. It will require an average of 42 staff days of work annually to manage the urban forest during the next 3 years. When more routine activities begin, it will require approximately 25 staff days. At present, less than 5% of time is spent on forestry work and most duties such as tree removals require a 3-4 person crew. The crew will be responsible for a great number of tasks that they have not previously completed. A full list of responsibilities and the time required to complete them can be found as Attachment 1: Schedule of Activities 2019-2023.

Due largely to the lack of an aerial lift truck, the following activities can be completed in-house vs. contracted:

Work completed in-house:	**Work contracted:**
Removals: All park trees, other trees 1-18" dbh	**Removals**: ≥19" dbh
Prunes: 1-10" dbh	**Prunes**: ≥11" dbh
Plantings: All	
Grind stumps: Contracted trees include grinding. In-house trees and existing stumps are ground in-house	

The Village of Poynette would greatly benefit from having a Village Arborist that is an ISA (International Society of Arboriculture) Certified Arborist. To become an ISA Certified Arborist an individual must have practical work in the urban forestry field and complete a comprehensive test on all areas of arboriculture. They must also complete annual continuing education courses to maintain certification. This is an attainable goal for a crew member and should be encouraged. This person could then supervise as well as help with completion of all maintenance activities and would also serve as a forestry expert for the Village and residents. Identifying an individual to begin this process is strongly encouraged. More information on certification can be found at: http://www.isa-arbor.com/Credentials.

Staff should receive training immediately on proper pruning and tree felling techniques. Each year, staff should receive training on some facet of tree care to continually expand their capabilities. The DNR has an urban forestry training page that is in real time and lists all upcoming training opportunities. This page can be found at: http://dnr.wi.gov/topic/UrbanForests/events.html. The Wisconsin Arborist Association also has training opportunities and information can be found at: www.waa-isa.org/events-programs/. A figure has been included in the budget for staff training. Staff will be completing most work in-house and training is critical for proper safety and tree care. Some trees may need to be contracted out to a qualified tree care firm if they are unsafe for staff to complete.

TREE MAINTENANCE TIMELINE

This inventory provides an overall look at Poynette urban forestry maintenance needs. To simplify the order of activities, the following summary has been provided by year. A further description of activities and their associated costs can be located in Attachment 1: Schedule of Activities. Administration is strongly encouraged to support the following activities:

Activities to be Completed in 2019:

Complete removals (43 trees)

Complete priority prune 1 (11 trees)

Complete 1/2 of young tree training prunes (38 trees)

Plant trees (10 plantings)

Receive chainsaw safety training/tree felling training and plant diagnostic training or similar

Activities to be Completed in 2020:

Remove 1/2 of remaining ash population (36 trees)

Complete priority prune 2 (13 trees)

Inspect monitor and very poor, poor trees (approximately 90 trees)

Complete 1/2 of young tree training prunes (38 trees)

Plant trees (42 plantings)

Grind existing stumps (30 stumps)

Receive tree pruning and risk tree identification training or similar

Activities to be Completed in 2021 :

Remove 1/2 of remaining ash population (36 trees)

Complete routine removals (approximately 10 annually = 1% of population)

Complete routine prunes on 1/8 of population (115trees)

Plant trees (42 plantings)

Inspect monitor and very poor, poor trees (approximately 90 trees)

Complete 1/2 of young tree training prunes (38 trees)

Receive training on a variety of topics

Activities to be Completed in 2022 and BEYOND :

Complete routine removals (approximately 10 annually = 1% of population)

Complete routine prunes on 1/8 of population (115trees)

Plant trees (42 plantings)

Inspect monitor and very poor, poor trees (approximately 90 trees)

Complete 1/2 of young tree training prunes (38 trees)

Receive training on a variety of topics

URBAN FORESTRY GOALS

This inventory was the first step towards establishing a defined, efficient forestry program to maximize benefits and minimize costs for the Village of Poynette. The next step is to identify goals and begin the process of implementation. The primary goals and objectives that have been identified to establish a management program in order of priority are:

GOAL 1: ELIMINATE HIGH RISK SITUATIONS.

Objective A: Remove high-risk trees.
Objective B: Prune high risk branches.
Objective C: Remove EAB/ash trees

GOAL 2: ESTABLISH A ROUTINE, COMPREHENSIVE URBAN FORESTRY PROGRAM FOR A HEALTHY FOREST

Objective A: Perform yearly tree inspections/Evaluate risk management program.
Objective B: Perform training prunes.
Objective C: Perform routine pruning and removals.
Objective D: Plant high quality trees with low maintenance requirements.
Objective E: Inventory updating.

GOAL 1: Eliminate high-risk situations.

The first and foremost objective of any municipality entrusted with the responsibility of an urban forest is the safety of its residents and visitors. Until a safe environment has been attained, no other objectives can be tackled. The following is a prioritized list of actions that need to be taken to eliminate the high-risk situations identified during the inventory:

1. Remove trees identified as Removals.
2. Prune trees identified as Prune Priority.
3. Complete ash removals.

A complete listing of activities and their costs can be found as Attachment 1: Schedule of Activities.

Objective A: Remove High Risk Trees

Tree removals are an integral part of a sound forest management program. Removals are as necessary to the urban forest's life cycle as are tree plantings and maintenance. Removals do, at times, stimulate a public reaction because people grow attached to the trees in the vicinity of their homes. Nevertheless, a successful urban forestry program demands that a removal policy be adopted and applied uniformly throughout the Village. A clear policy provides coherent guidelines to enable Village officials and crews to make informed, defensible, consistent removal decisions. Furthermore, such a policy can help allay public concerns about tree removals. The Village's potential losses from

liability claims are also reduced due to healthier and lower risk trees.

The goal of a removal plan is to develop a comprehensive risk reduction program that will guarantee the timely removal of high risk or potentially high risk trees as well as to heighten awareness of hazard abatement procedures.

There are three important reasons for establishing a strong removal policy. The first is to maintain safe public areas by reducing potentially high-risk trees and the liability associated with them. Secondly, the removal of dead and declining trees allows the urban forest manager to make room for new, diverse plantings which in turn increases the overall health of the community forest. Thirdly, it is more cost effective to maintain healthy trees rather than decadent, senescing, over mature trees.

In Wisconsin, municipal governments have a legal duty to exercise reasonable care to protect the general public from foreseeable hazards. To minimize the liability associated with trees in high use areas, such as urban streets and parks, land managers must demonstrate reasonable care in maintaining these trees. Political pressure, inadequate time, untrained staff and inadequate funding are not valid reasons for inaction and may potentially leave the Village liable should there be no designated risk tree removal program showing the effort to reduce the number of these trees.

Based on the inventory data, Bluestem estimates that 43 trees should be immediately removed from the existing tree population. Once this initial group of trees is removed, the Village's removal program should stabilize at approximately 10 removals per year (1.0% of the total population).

Each tree was given a condition rating when it was inventoried. This number is used to calculate the appraised replacement dollar value of each tree, but is also used to prioritize removals. Ratings range from a low of 0% to a high of 100% in 5% increments. For example, a specimen tree in perfect condition received a 100%. A dead standing tree received a 0%. Most removals fall between 0-25%. Removals should start with condition ratings of 0% and continue until they are all removed. This work should begin immediately.

Several factors can assist with prioritizing tree removals and management:

1. Utilize the Risk Management Guide (attachment 2). This guide is a step-by-step system for evaluating risk within the population. This guide was utilized during the inventory fieldwork and is a good guide for the Village to use for day-to-day duties. For example, several steps are listed for tree evaluation. One step is to 'Identify Problematic Conditions'. The inventory identified a condition rating for each tree inventoried. A tree was assigned one of six ratings: excellent, good, fair, poor, very poor or dead. Very poor and dead trees need to be prioritized for removal. Other steps include identifying problematic species, diameters and defects. Some problematic species include willow and boxelder. These trees are typically weak wooded and tend to fail more often than other species such as oak. Problematic diameters include larger diameter trees. A 2" dbh dead tree poses minimal risk, while a 30" dead or very poor condition tree poses a very high risk. Additionally, certain defects should be red-flagged for action. Cavities, decay and excessive dieback are some of the more severe defects noted during the inventory. All of this data can be found within the inventory database. Target and location are also important factors to consider when prioritizing removals. Playgrounds and busy streets where pedestrians and vehicles frequent should receive higher priority than streets with wooded/naturalized rights-of-way. The combination of these factors should be used to determine the order in which trees need to be removed.

2. Prioritizing Funding. The safety risk of failing trees cannot be over-stressed. Staff time and funding needs to be prioritized to maximize public safety and reduce tree-related liability. The frequency of other non-safety tasks should be reduced so that staff can dedicate more time to pruning and removals? Will a reduced mowing schedule endanger residents? Will a 32" silver maple with a trunk cavity endanger residents?

One of the primary purposes of the inventory was to identify risks. The Village can reduce these risks and increase safety for its residents through prompt implementation of the inventory-based pruning and removal recommendations in this plan.

A "high risk" is any tree or tree part that demonstrates a high risk of failure or fractures which would result in damage or injury to people or property. Usually, high-risk trees demonstrate visible defects.

There are two distinct aspects to the definition of a high risk tree: 1) a physical defect within a tree that increases its potential for failure, and 2) the proximity of the tree to people or property that increases the likelihood of personal injury or property damage. A decaying tree in the middle of the Chequamegon National Forest may have a potential for failure, but the chance that tree will cause personal injury is remote. However, that same tree located at the little league fields or anywhere in Poynette, should be considered a high risk because of its urban location.

One task of the urban forest manager is to anticipate tree failures before they occur. There are no absolutes in determining risks - only sound judgment based on experience at recognizing structurally unsound trees.

The number of trees marked for removal within a given year further describes a forest system's health, although in some instances trees need to be removed for reasons unrelated to health. The objective is to eventually have no Village trees with a condition rating lower than fair.

The risk assessment that Poynette should use to evaluate trees was created by the International Society of Arboriculture. It is titled A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas, 2nd Edition by Nelda Matheny and James R. Clark. This can be purchased at Amazon.com and through other sources. Additional resources include the US Forest Service's "Urban Tree Risk Management" guide. This is available at no charge from the WI DNR regional urban forester.

When a tree has been identified for removal or priority pruning, it may indicate an underlying deficiency. For this reason, all trees scheduled for removal along with trees in need of priority pruning need to receive a thorough inspection twice a year (once with the leaves on and once without the leaves) until the tree has been removed or the hazard has been eliminated. Likewise, all trees identified as in need of monitoring, poor or very poor or dead should also receive a similar inspection.

Trees that need to be regularly and frequently inspected were identified as 'Monitors.' These trees may have a problem developing such as dieback or may have old storm damage that warrants attention. A list of these trees can be found in the inventory database.

Village policy should require tree pruning and removal in accordance with national industry standards. Standards-based specification are commonly used when municipalities hire a contractor or purchases materials, but should also be applied to all work completed by staff. Industry standards and specifications include current editions of:

~ American National Standard for Safety in Tree Care Operations, ANSI Z133 (current revision). Can be purchased at: http://www.treecareindustry.org/public/gov_standards_z133.htm

~ American National Standard for Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices, ANSI A300 (current revision). Can be purchased at: http://www.tcia.org/standards/A300.htm

A notification procedure should be enacted to alert nearby residents of the impending removal. Not only does this alert them to the high risk situation, it helps residents feel involved in the decision and gives them time to adjust to the loss of the adjacent tree. The tree can be "marked" and give the nearby homeowner written notification explaining why the tree is being removed, how the removal will be performed, when the removal will begin and if replanting will occur. Include a phone number to be contacted for any additional questions or concerns. By performing this pre-emptive task the Village will find better compliance, cooperation and support from residents regarding the Village's forestry program activities. Ordinances are currently undergoing revisions and will likely include a notification procedure.

Objective B: Prune High-risk Branches

A total of 24 trees are in need of priority pruning.

Priority prune trees have obvious risks such as branch cavities, hangers or significantly sized deadwood. These trees should be pruned immediately, in conjunction with the initial high-risk removals in 2019.

The tree inventory was a ground visual only survey and was not intended to substitute for a thorough hazard tree survey and as such the trees have not been aerially inspected. Additional defects may be noted from an aerial inspection. It is important that while trees are being pruned from an aerial bucket truck that their condition be re-evaluated. If the pruner feels they would not benefit from being pruned, they should be removed.

Objective C: Remove and Manage Ash Trees for EAB

The 105 ash trees in Poynette's public population are recommended for removal over the course of three years, beginning in 2019 and ending in 2021. EAB costs and activities are included in Attachment 1: Schedule of Activities.

GOAL 2: Establish a routine, comprehensive urban forestry program for a healthy forest.

Systematic maintenance of existing trees is important for three reasons: safety, cost savings and aesthetics. Maintained trees have a greater lifespan and provide greater canopy benefits than trees that are not maintained. Proper maintenance can also reduce removal and replanting costs. With limited budgets and time, it is necessary to prioritize actions. High-risk tree situations should always be eliminated first (Goal 1) and then routine maintenance should proceed. The following routine objectives are listed from highest to lowest priority.

Objective A: Perform Yearly Tree Inspections & Evaluate the Risk Management Program

It is important that *all* of the street and park trees in the Village get a yearly inspection. Trees that have been identified during the inventory as needing priority pruning, monitoring or removal need a hazard inspection at least *twice* yearly. Complete this inspection once with leaf cover and once without until the hazard has been eliminated or the situation resolved. Additionally, all large diameter trees need an extra inspection after storms. If any hazards are identified, the situations need to be corrected immediately, and then continue with the list of routine maintenance.

It is important that an ISA Certified Arborist complete all tree inspections (greater than 6" in diameter).

Seven factors should be considered when evaluating trees:

Factor	Considerations
Crown Development	Characteristic of species and well balanced
	Branching throughout entire upper 2/3 of trunk area
	Lacking full crown
Trunk	One central leader is desired
	No defects
	Missing sections of bark
	Extensive decay or hollow
Major branch structure	Evenly distributed braches
	Structurally important branches not dead or broken
Twig growth rate	Typical for species and age
	Growth rate reduced
Foliage	Normal size and color
	Small leaves with deficiencies
Insects & Disease	No apparent problems
	Severe infestation
Roots	Extensive root loss
	Stem girdling roots present
	Trunk flare present indicating proper planting depth

An excellent resource guide is "How to Recognize Hazardous Defects in Trees" published by the USDA Forest Service (Guide # NA-FR-01-96). This can be found at: http://www.na.fs.fed.us/spfo/pubs/howtos/ht_haz/ht_haz.htm

To reduce high-risk situations within Poynette, The Director of Public Works should evaluate the risk management program annually. The evaluation can be accomplished by following the Risk Management Guide (Attachment 2). This inventory and management plan represents the first comprehensive inventory but is not a substitute for a hazard tree evaluation. This management plan is the first phase of the risk management program.

Objective B: Perform Young Tree Train Prunes

Training pruning is the structural pruning of all trees 10 years of age or younger. Some benefits of training pruning include:

- *Pruning 2-3 times in the first ten years of a tree's life will reduce 90% of the structural problems the tree will ever have resulting in a healthier and more storm resistant tree that costs less to maintain and has fewer employee call-outs*.
- *This is the easiest pruning to perform due to the small size of the trees.*
- *Increased safety to both the tree and public due to elimination of sight obstructing branches and less branch breakage from car/truck strikes.*
- *Training pruning is the most cost effective pruning because it reduces long-term routine pruning costs.*
- *It is the most economical pruning because an in-house crew can complete it quickly and efficiently.*

Trees that are structurally pruned at this stage require much less care as they mature. It is not necessary that they be pruned every year but an every-other year pruning is a good objective. This results in cost savings and still adequately prunes the tree. This equates to approximately 38 training prunes per year annually. As trees are planted, this number will increase. All of the training prunes can be completed until they are unable to be reached from the ground or are older than 10 years planted, and then they will be scheduled for routine pruning.

Objective C: Perform Routine Pruning & Removals

One of the most beneficial and noticeable activities performed in the urban forest is routine pruning. Routine pruning is the cycle of pruning all trees on a rotating basis. Once all of the safety issues have been addressed, all trees 10 years of age or over (approximately 6" or over) need to be placed on a routine pruning cycle. Some benefits of routine pruning include:

- Increased health and viability of trees.
- Fewer tree mortalities and fewer structural deficiencies.
- Reduced liability from potential tree-related injuries or damages to property.
- Increased property values.
- Enhanced aesthetic value.

- Fewer complaints/requests.
- Increased longevity of tree.
- Reduced future costs associated with hazardous limbs and decay.
- Improved cost effectiveness of tree maintenance reducing the need for on-demand pruning and associated staff overtime.

An excellent resource on proper pruning can be found at:
https://dnr.wi.gov/topic/forestmanagement/documents/pub/FR-256.pdf

Once risk issues have been resolved and ash management is under way, a feasible routine pruning cycle needs to be established. Industry guidelines are to prune each tree over 6" dbh once every 5-8 years. An eight year cycle is recommended. Essentially, the Village has been broken into eight zones and a different zone has work completed in a particular year. For example, routine pruning in 2021 will occur in zone 1, zone 2 in 2021, etc. Taking into consideration Poynette current level of stocking, the above mentioned routine pruning cycle of seven years will result in approximately 115 trees pruned annually. The tree information in the database includes zone it is located in.

Completing one cycle, combined with increased emphasis on training prunes, should greatly reduce the cost and time associated with future routine pruning. If a tree is pruned properly (throughout the entire canopy) and is on a routine pruning cycle, no limb over 4" in diameter should need to be removed. The best time of year to prune is when the leaves are off the trees. If pruning does occur while the trees have their leaves on, it should be after the leaves have fully expanded and not when they are in the process of forming. Pruning should also be avoided when the leaves are turning colors in the fall and in the process of dropping. All American elms and oaks should be pruned during dormancy.

Another facet of routine maintenance includes 'routine' tree removals. Any given Village can expect approximately 1-2% of trees will need to be removed per year due to high-risk situations that develop naturally as the tree population matures. This is in addition to the initial safety removals. In Poynette this estimates a total of 10 removals per year. This has also been figured into the schedule of activities that can be found as attachment 1.

Objective D: Plant high quality trees with low maintenance needs

The Village has completed only a couple dozen tree plantings in recent years, primarily in street construction areas. Trees provide huge benefits and planting needs to occur on an annual basis to assure that trees are growing for future generations and age diversity remains to lessen maintenance spikes. Sites available to plant a tree were inventoried and a listing of these can be found as attachment 3. There were 191 vacant sites identified during the inventory.

Vacant sites were chosen based upon several factors. These include:

- Width of boulevard – If the site had a sidewalk, the distance between the sidewalk and curb needs to be a minimum of 5 feet. Anything less that this causes poor growth and may eventually lead to gridling roots and heaving walks.
- Distance to nearby structures/trees – For a tree to be healthy, it needs to be able to grow unimpeded by other trees or structures such as buildings. Planting sites were only identified when the trees planted will have time to spread their branches and will not interfere with the growth of other trees or touch structures.
- Overhead utilities – It is acceptable to plant when overhead utilities are present, and these sites were identified as such and small trees only are recommended in these areas. Some small trees tend to grow very widely. Be sure that the height AND width of the mature tree is taken into consideration when planting.

- All planting sites were identified as either small or large. This indicates the size of tree suitable for planting in that particular circumstance. As mentioned above, small trees should be planted where overhead utility lines are present and large trees are appropriate where they have plenty of space to grow. A list of species recommendations by size can be found below. There are 148 large sites and 66 small sites.

To continue enjoying and increase the varied benefits of trees, trees must be planted. Certain planting policies can be applied. As always, no planting should take place until all of the high risk safety situations identified have been alleviated. Then, the order of priority for tree planting should be:

1. Trees lost within the past year.

2. Trees lost within the past three years.

3. Appropriate sites within the current work zone. The map delineating work zone areas can be found as attachment 5.

4. Homeowner requests.

Beginning in Year 2019, 10 plantings have been included in the budget annually and in 2020 this jumps to 42 per year (see Attachment 1: Schedule of Activities). Re-planting of removals should occur first (assuming there is sufficient spacing) and then move on to filling existing vacant planting sites. Plantings can occur by the in-house crew. Training may be necessary before this task begins.

Poynette is a Zone 4b climate and types allow for some good street and park tree planting selections. The list below is a quick general list for review.

Good **large** selections include:
swamp white oak (Quercus bicolor) *****
hackberry (Celtis occidentalis)
bur oak (Quercus macrocarpa) *****
elm (Ulmus spp.) – 'New Horizon', 'Accolade', 'Cathedral' *****
American Liberty elm (Ulmus americana 'Liberty')
Kentucky coffeetree (Gymnocladus dioica) – 'Espresso', 'Macho' and other male cultivars do not produce seed pods.
ginkgo (Ginkgo biloba) – Male cultivars only as the female produces fruit which has a very unpleasant odor.
honeylocust (Gleditsia triacanthos) – 'Northern Acclaim', 'Skyline', 'Sunburst', 'Street Keeper'.
Turkish filbert (Corylus colurna)

Good **medium** selections include:
river birch (Betula nigra)
amur chokecherry (Prunus maackii)
horsechestnuts (Aesculus spp.)
amur maackia (Maacia amurensis)

Smaller sites can be filled with:
Japanese tree lilac (Syringa reticulata)
serviceberry (Amelanchier x grandiflora)

hophornbeam (Ostrya virginiana)
American hornbeam (Carpinus caroliniana)
Hawthorn (Crateagus spp.)

It is important to diversify the urban forest as much as possible. Every effort should be made to continue diversification. Planting many different species and varieties keeps the urban forest healthy and attractive. Ideally, no more than 5% of any one species and 10% of any one genus should comprise the Village's trees. It is recommended at present and into the future (next 10 years) that planting of maples should not occur or be very limited due to this genus representing a quarter of the current public tree population.

Many excellent tree planting resources can be found online. A newer publication developed by the WI DNR division of forestry can be found at dnr.wi.gov/forestry/publications/newtreeplanting.pdf.

All plant quality should follow the American National Standard for Nursery Stock; ANSI Z60 (current revision) should be used when purchasing plant material. Can be found at: http://www.isa-arbor.com/education/onlineResources/cad/resources/educ_CAD_DevelopingPlantingSpecifications.pdf

Poynette may want to consider entering into "Growing Agreements" with nurseries. These are agreements between communities and nurseries where trees are specifically grown for that community. This is being done by several communities throughout Wisconsin to assure that the community will receive a diverse supply of trees of specific sizes at known times for a known price. The agreements are set up several years in advance and require the community to pay a small up-front fee. But, it provides for a better quality of tree on the dates required. Poynette may want to partner with other communities (DeForest, Pardeeville, Portage, etc) to jointly order trees. The use of gravel beds are also an option and more information on those can be found at: http://www.mntreesource.com/gravel-beds.html

Objective E: Inventory Maintenance and Updating

The inventory database has been provided to the Village of Poynette in ArcMap and MS Excel. Staff should complete work orders and input the completed work into the inventory on a continuing basis. Without continual updating in this way, the inventory quickly becomes obsolete.

This management plan contains provisions for five years, beginning in 2019. Typically, a complete re-inventory should be completed every 5 years. When the inventory expires in 2024, a qualified, experienced forester should thoroughly evaluate all of the trees on an individual basis again. It is beneficial for an experienced eye outside the Village perform an inventory due to changing tree conditions and factors.

ATTACHMENT 1:

2019-2023 Schedule of Activities

2019 Activities

Activity	In-House or Contract	# of Trees	Contract Cost or Staff Hours Required	Misc. Comments
Tree Removals	In-House*	28	9 days for a 3-4 person crew	Avg dbh = 18.5" crew averages 3 daily (includes stump)
Tree Removals	Contract	15	$12,750	Avg dbh = 32.3" Avg contractor cost = $850/tree (includes stump)
Priority Prune 1	Contract	11	$3,300	Avg dbh = 27.3" Avg contractor cost = $300/tree
1/2 Young Tree Training Prunes	In-House	38	2 days for 1 crew member	Average = 20 daily
Plant Trees**	Purchase From Supplier; Plant In-House	10	Trees = $1,750; 1 day for a 2 person crew	Trees = $175/each; Crew plants 15 daily
Training (plant diagnostics, tree felling, chainsaw safety)	Contract	n/a	$1,000	Check WAA Fall Conference for potential training opportunities

TOTAL STAFF HOURS/COST*	**37 days/$8,403**
TOTAL CONTRACT COST	**$18,800**

*Cost (including benefits = $28.01/hour. Equipment costs not included.

**Expect to purchase a potted 1.5-2.0" caliper tree for this price.

2020 Activities

Activity	In-House or Contract	# of Trees	Contract Cost or Staff Hours Required	Misc. Comments
Complete 1/2 of Ash	In-House*	42	7 days for a 3-4 person crew	Avg dbh = 11.6" crew averages 6 daily (includes stump)
Complete 1/2 of Ash	Contract	9	$7,650	Avg dbh = 24.1" Avg contractor cost = $850/tree (includes stump)
Priority Prune 2	Contract	13	$3,900	Avg dbh = 17.8" Avg contractor cost = $300/tree
Inspect Monitor and Poor Trees	ISA Certified Arborist	Apprx 90	$1,200	2 days for Arborist
Grind Existing Stumps	In-house	30	4 days for a 2 person crew	Total = 586" crew averages 7 daily
1/2 Young Tree Training Prunes	In-House	38	2 days for 1 crew member	Average = 20 daily
Plant Trees**	Purchase From Supplier; Plant In-House	42	Trees = $7,350; 3 days for a 2 person crew	Trees = $175/each; Crew plants 15 daily
Training (tree pruning and risk tree identification)	Contract	n/a	$1,000	Check WAA Fall Conference for potential training opportunities

TOTAL STAFF HOURS/COST*	**40 days/$9,075**
TOTAL CONTRACT COST	**$21,100**

*Cost (including benefits = $28.01/hour. Equipment costs not included.

**Expect to purchase a potted 1.5-2.0" caliper tree for this price.

2021 Activities

Activity	In-House or Contract	# of Trees	Contract Cost or Staff Hours Required	Misc. Comments
Complete 1/2 of Ash	In-House*	42	7 days for a 3-4 person crew	Avg dbh = 11.6" crew averages 6 daily (includes stump)
Complete 1/2 of Ash	Contract	9	$7,650	Avg dbh = 24.1" Avg contractor cost = $850/tree (includes stump)
Complete Routine Removals (apprx 1% of population)*	In-House	4	1 days for a 3-4 person crew	Avg dbh = 7.2" crew averages 7 daily
Complete Routine Removals (apprx 1% of population)*	In-House	6	$5,100	Avg dbh = 19.1" Avg contractor cost = $850/tree (includes stump)
Routine Prune of 1/8 of Population	In-House	43	4 days for a 3-4 person crew	Avg dbh = 7.2" crew averages 12 daily
Routine Prune of 1/8 of Population	Contract	72	$14,400	Avg dbh = 19.1" Avg contractor cost = $200/tree
Inspect Monitor and Poor Trees	ISA Certified Arborist	Apprx 90	$1,200	2 days for Arborist
1/2 Young Tree Training Prunes	In-House	38	2 days for 1 crew member	Average = 20 daily
Plant Trees**	Purchase From Supplier; Plant In-House	42	Trees = $7,350; 3 days for a 2 person crew	Trees = $175/each; Crew plants 15 daily
Training (variety)	Contract	n/a	$1,000	Check WAA Fall Conference for potential training opportunities

TOTAL STAFF HOURS/COST*	**50 days/$11,204**
TOTAL CONTRACT COST	**$36,700**

*Cost (including benefits = $28.01/hour. Equipment costs not included.

**Expect to purchase a potted 1.5-2.0" caliper tree for this price.

Routine Activities Beginning in 2022

Activity	In-House or Contract	# of Trees	Contract Cost or Staff Hours Required	Misc. Comments
Complete Routine Removals (apprx 1% of population)*	In-House	4	1 days for a 3-4 person crew	Avg dbh = 7.2" crew averages 7 daily
Complete Routine Removals (apprx 1% of population)*	In-House	6	$5,100	Avg dbh = 19.1" Avg contractor cost = $850/tree (includes stump)
Routine Prune of 1/8 of Population	In-House	43	4 days for a 3-4 person crew	Avg dbh = 7.2" crew averages 12 daily
Routine Prune of 1/8 of Population	Contract	72	$14,400	Avg dbh = 19.1" Avg contractor cost = $200/tree
Inspect Monitor and Poor Trees	ISA Certified Arborist	Apprx 90	$1,200	2 days for Arborist
1/2 Young Tree Training Prunes	In-House	38	2 days for 1 crew member	Average = 20 daily
Plant Trees**	Purchase From Supplier; Plant In-House	42	Trees = $7,350; 3 days for a 2 person crew	Trees = $175/each; Crew plants 15 daily
Training (variety)	Contract	n/a	$1,000	Check WAA Fall Conference for potential training opportunities

TOTAL STAFF HOURS/COST*	**25 days/$5,714**
TOTAL CONTRACT COST	**$29,050**

*Cost (including benefits = $28.01/hour. Equipment costs not included.

**Expect to purchase a potted 1.5-2.0" caliper tree for this price.

Work completed in-house:

Removals: All park trees, other trees 1-18" dbh

Prunes: 1-10" dbh

Plantings: All

Work contracted:

Removals: ≥19" dbh

Prunes: ≥11" dbh

Grind stumps: Contracted trees include grinding. In-house trees and existing stumps are ground in-house

ATTACHMENT 2:

Risk Management Guide

RISK MANAGEMENT

Risk: is the potential for suffering harm or loss
Risk Management: is the ability to minimize the potential for harm or loss from occurring by implementing a sound risk reduction strategy.

Types of Risk

- Financial
- Physical harm

A Risk-Reduction Strategy for Trees

- Evaluate the natural resource being managed
- Evaluate the resources available to you (fiscal, staff, equipment, etc.)
- Develop a policy statement
- Develop an action plan
- Periodic review of all four components

EVALUATE THE NATURAL RESOURCES BEING MANAGED

Evaluate the Entire Population

An understanding of the entire population allows you to identify the key problem areas within the population.

- Species distribution
- Diameter distribution
- Condition distribution
- Defects
- Locations and targets

Identify Problematic Species

Identify the species that, based on your knowledge and experience, pose the greatest physical threat.

- High history of failure
- High storm damage potential
- Prone to high-risk structural defects

Identify Problematic Diameters

Identify the diameters that, based on your knowledge and experience, pose the greatest problem in your population.

- Large diameter trees

Identify Problematic Conditions

Identify the conditions that, based on your knowledge and experience, pose the greatest problem in your population.

- Very poor trees

- Poor trees

Identify Problematic Defects

Identify the defects that, based on your knowledge and experience, pose the greatest problem in your population.

- Basal decay and cavities
- Major dieback
- Poor branch attachments

Identify Locations and Targets

Identify the locations and targets that, based on your knowledge and experience, pose the greatest physical threat in your population.

- Busy streets
- Playground areas

EVALUATE THE RESOURCES AVAILABLE TO MANAGE

Staffing

- Number
- Training
- Work load

Equipment

- Diagnostic
- Capabilities/limitations
- Availability

Fiscal

CREATE A TREE RISK MANAGEMENT POLICY STATEMENT

Components of a Policy Statement

- State your agency's understanding of its responsibility to maintain a safe public area.
- Identify the manager of the risk reduction program.
- List any general constraints on managing hazard trees such as financial or personnel.

The following is an example of a Hazard Tree Policy Statement:

> The Village of Metropolis has an active policy to maintain the safety of public lands from potentially hazardous trees. The Village will strive to eliminate, in a timely fashion, any tree deemed hazardous. When available fiscal and human resources limit the ability of the Village to remove high-risk trees, priority shall be placed on trees deemed to carry the highest risk. The standard for rating the potential risk of a tree will be the International Society of Arboriculture's twelve point hazard evaluation system. The Director of Parks, Recreation and Forestry will administer this program and

have final judgment in all matters concerning the mitigation measures taken for any tree deemed hazardous.

Benefits of a Policy Statement

- It defines for staff the overall mission of the company or agency as it relates to high-risk trees.
- Minimizes political influence
- Allows staff to do their job

DEVELOP AND IMPLEMENT AN ACTION PLAN

Goal

After evaluating your resources, define problem areas and broad solutions to those problems. View this as a wish list.

Objectives

Define clear objectives that address the general goals you have established. The details should be more specific. A good objective defines what is going to be done and in what timeline.

Actions

A series of actions should be identified that address each objective defined

PERIODIC REVIEW OF ALL FOUR COMPONENTS

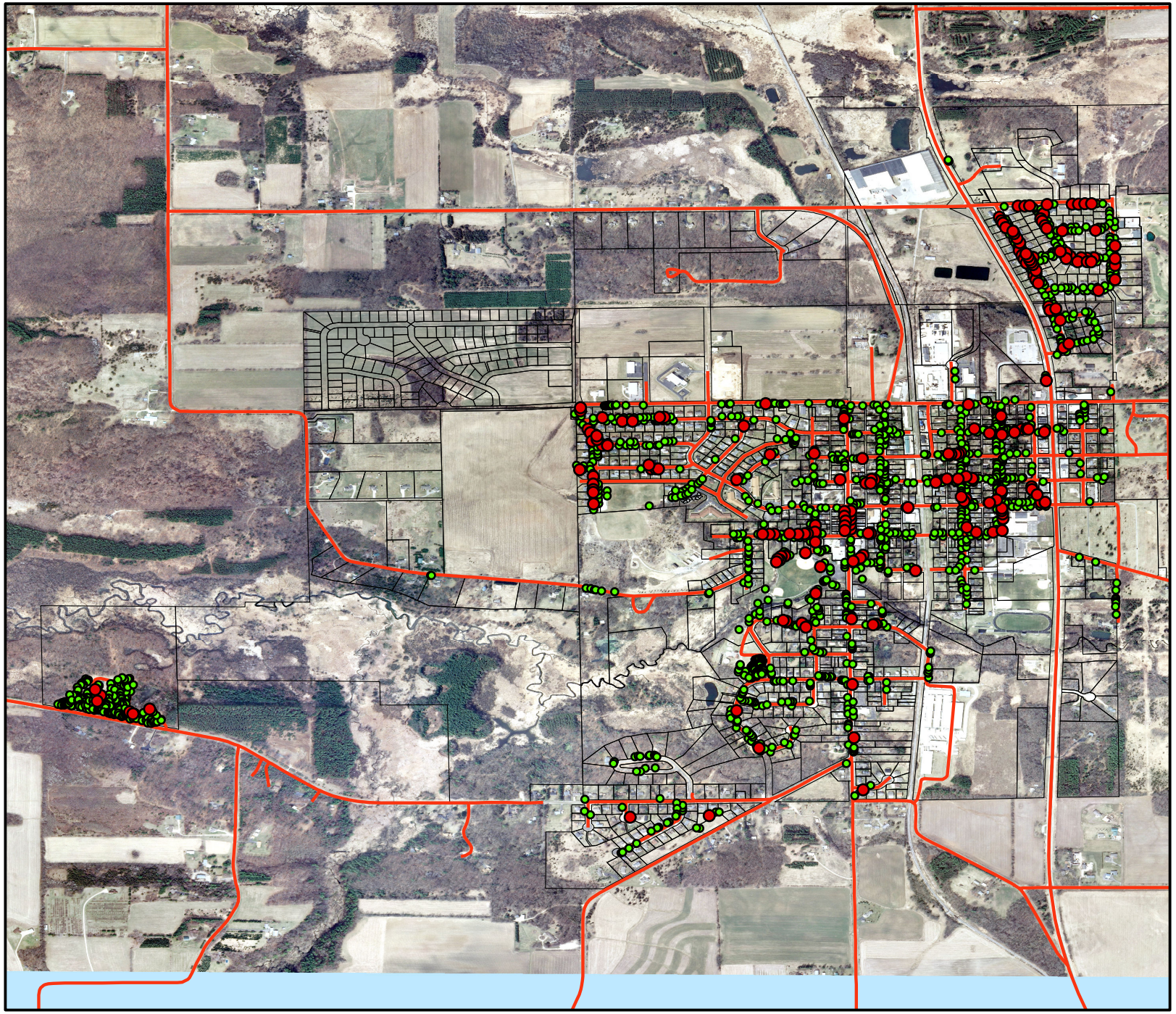
Review all four components of your risk management plan frequently.

ATTACHMENT 3:

Ash Map Location

ASH TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831



City of Poynette

Urban Tree Inventory
2019

- Ash Species
- Street Tree
- Streets
- Parcels

N
W E
S

0 750 1,500 3,000
Feet

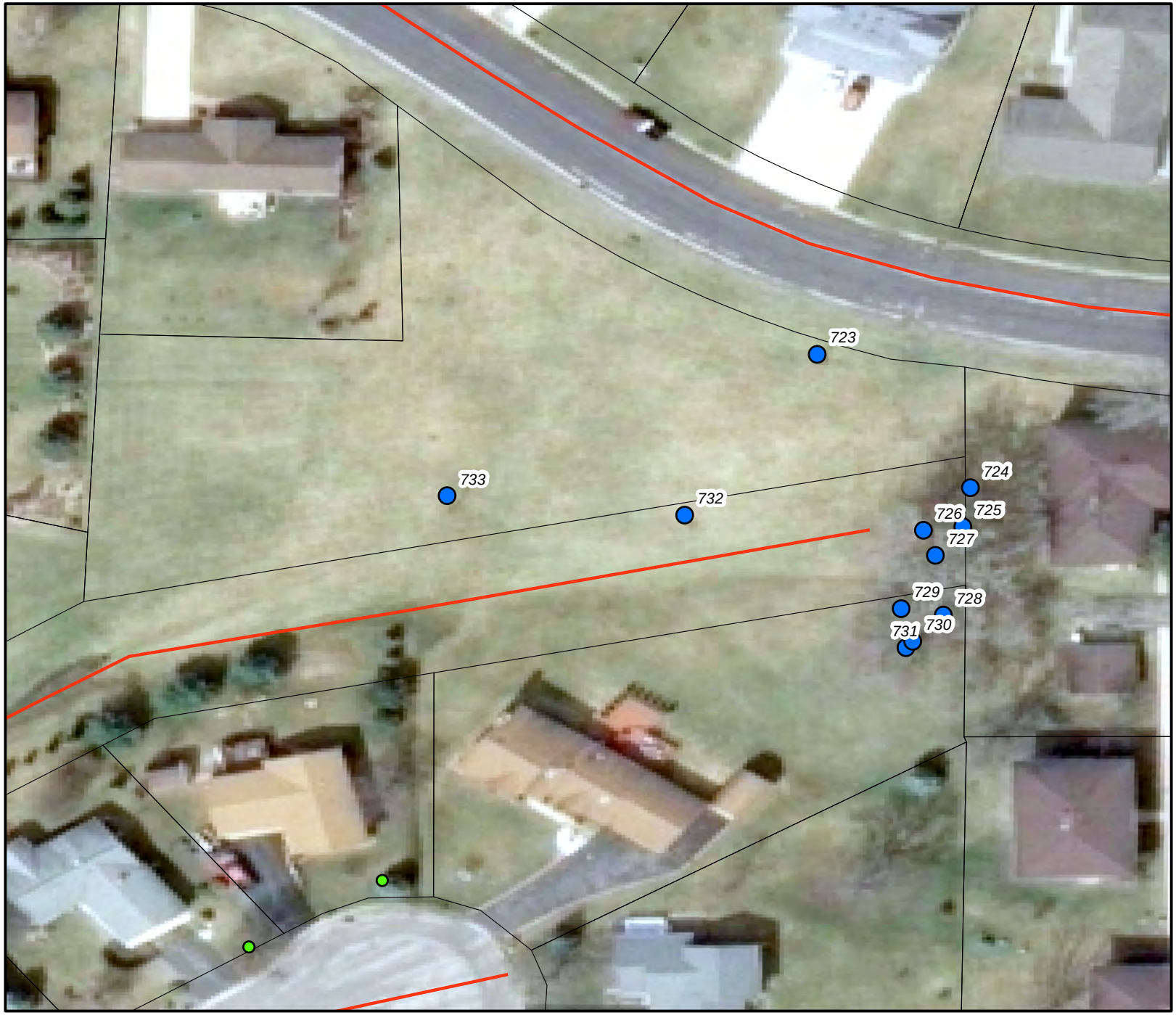
Map Created On:
August 12, 2019

ATTACHMENT 4:

Park Maps

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831



Colby Park

City of Poynette

Urban Tree Inventory
2019

ParkTree
Streets
Street Tree
Parcels

N
W E
S

0 25 50 100
Feet

Map Created On:
July 27, 2019

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831

Columbia Park

City of Poynette

Urban Tree Inventory
2019

ParkTree
Streets
Street Tree
Parcels

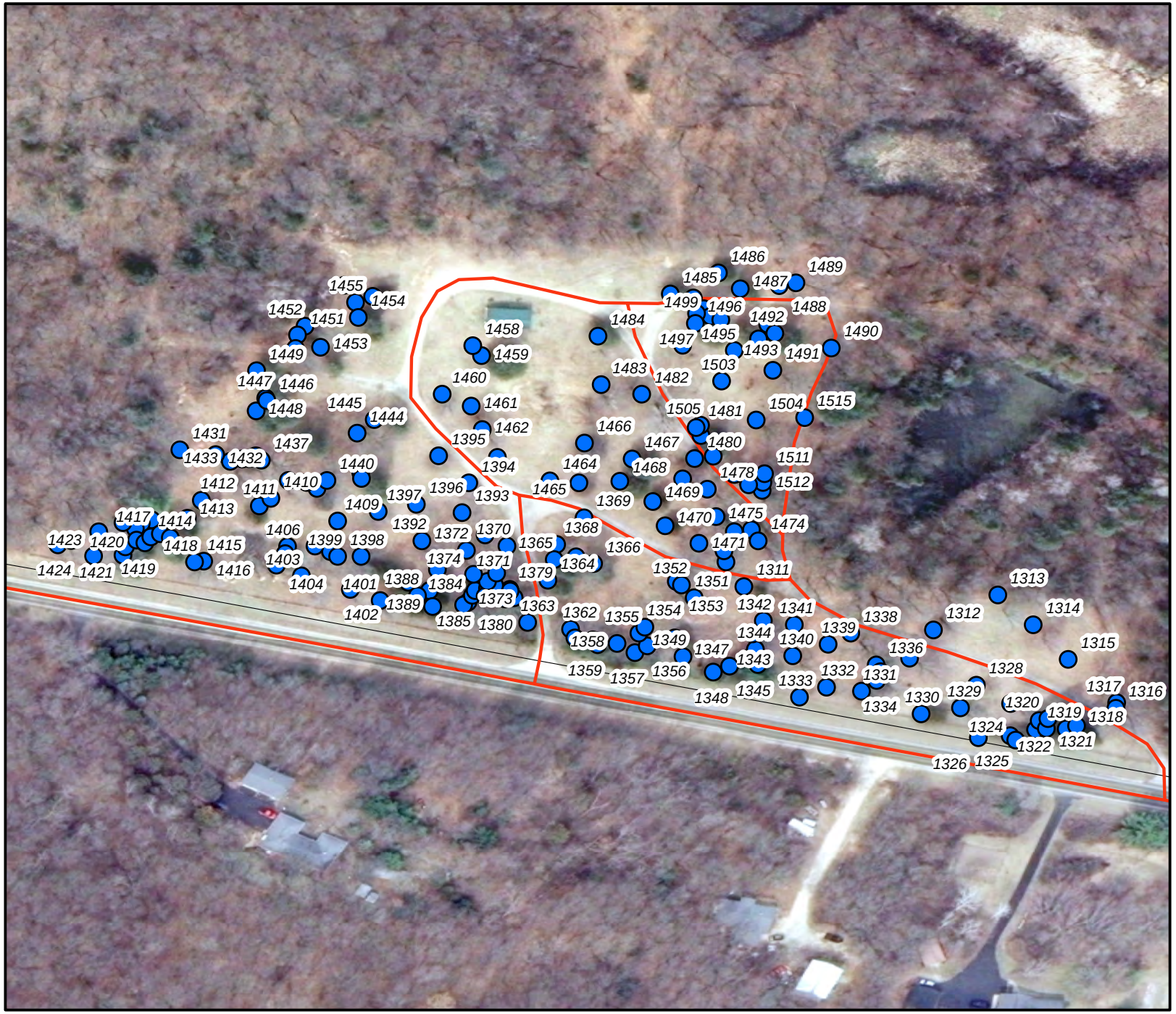
N
W E
S

0 25 50 100
Feet

Map Created On:
July 27, 2019

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831



Jamieson Park

City of Poynette

Urban Tree Inventory
2019

- ParkTree
- Streets
- Street Tree
- Parcels

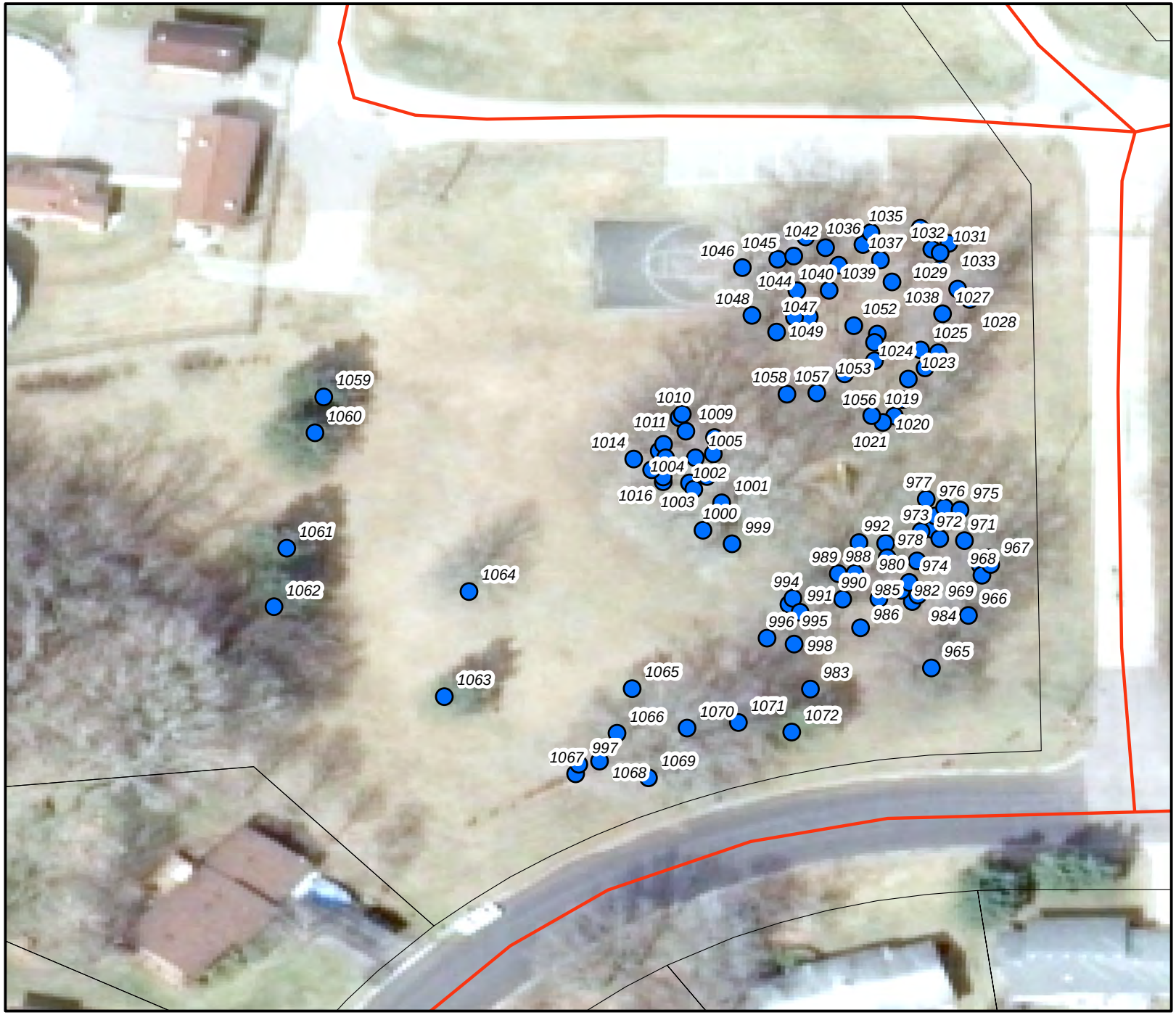
N
W E
S

0 75 150 300
Feet

Map Created On:
July 27, 2019

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831



Old Settlers Park

City of Poynette

Urban Tree Inventory
2019

- ParkTree
- Streets
- Street Tree
- Parcels

N
W E
S

0 25 50 100
Feet

Map Created On:
July 27, 2019

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831

Paquette Park

City of Poynette

Urban Tree Inventory
2019

- ParkTree
- Streets
- Street Tree
- Parcels

N
W E
S

0 70 140 280
Feet

Map Created On:
July 27, 2019

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831

South Park

City of Poynette

Urban Tree Inventory
2019

ParkTree
Streets
Street Tree
Parcels

N
W E
S

0 25 50 100
Feet

Map Created On:
July 27, 2019

PARK TREE LOCATIONS

BLUESTEM FORESTRY CONSULTING, INC.
49910 South Loop Road • Drummond, WI 54832
(715) 739-6831

Veteran's Memorial Park

City of Poynette

Urban Tree Inventory
2019

ParkTree

Streets

Street Tree

Parcels

N
W E
S

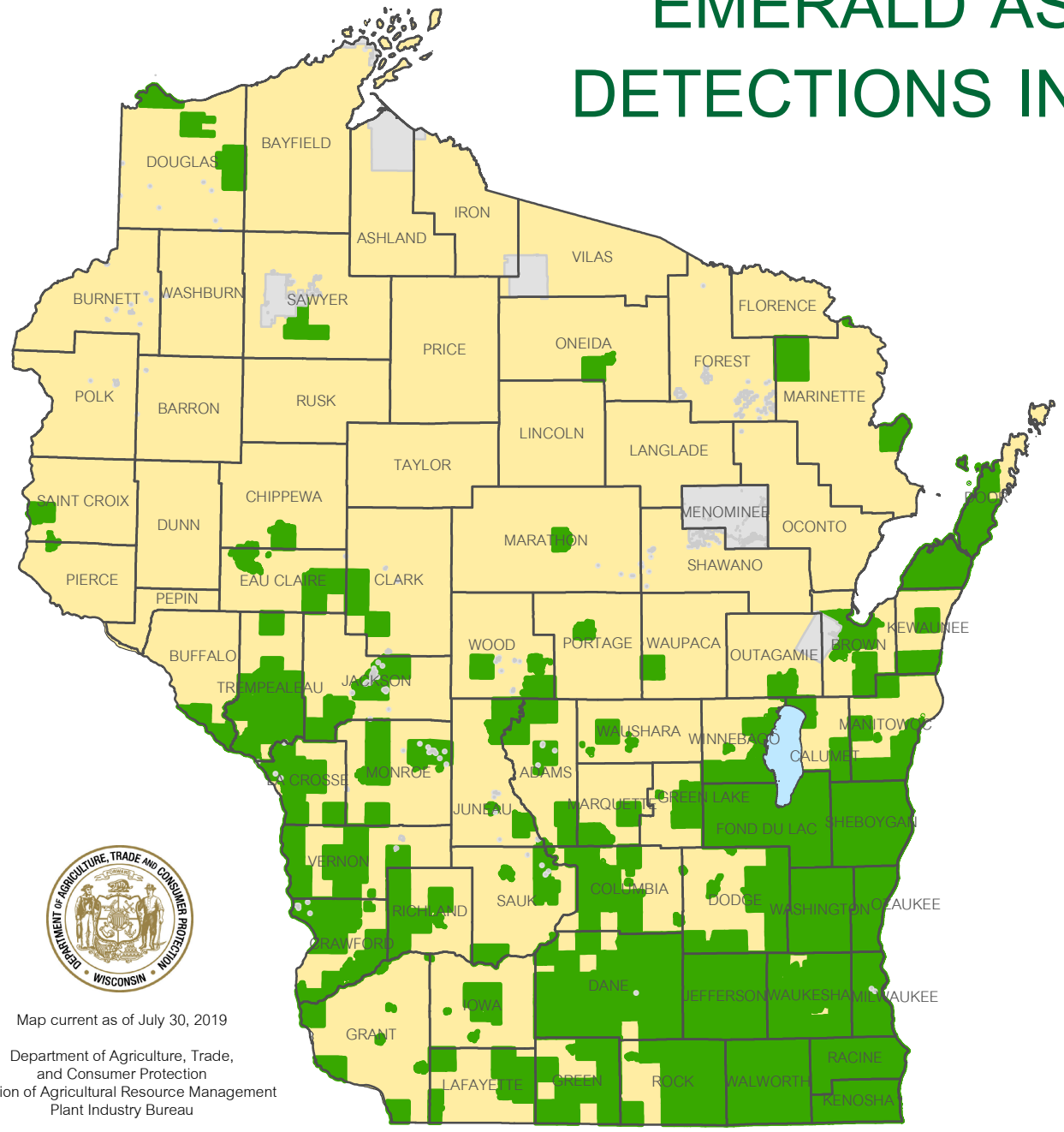
0 25 50 100
Feet

Map Created On:
July 27, 2019

ATTACHMENT 5:

EAB Detections in Wisconsin

EMERALD ASH BORER DETECTIONS IN WISCONSIN



Map current as of July 30, 2019

Department of Agriculture, Trade,
and Consumer Protection
Division of Agricultural Resource Management
Plant Industry Bureau

While all of Wisconsin is part of the Federal Emerald Ash Borer (EAB) Quarantine, most of the state remains EAB-free as shown in yellow on the map. EAB has been confirmed only within the municipal boundaries colored green. By limiting the transport of firewood and adhering to firewood regulations and federal and tribal quarantines, we can slow down artificial spread of EAB. For more information on what you can do, please visit www.emeraldashborer.wi.gov.

- Tribal Jurisdiction
- EAB Confirmed Area
- No EAB Detections