

## VILLAGE OF HASTINGS-ON-HUDSON COMMUNITY FOREST MANAGEMENT PLAN



Prepared by

**SAVATREE CONSULTING GROUP**

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January 28, 2022

## Acknowledgments

The tree inventory and risk assessment performed at Uniontown Park, Zinsser Park, Pulver's Woods, and Rowley's Bridge Trail in Hastings-on-Hudson and associated Community Forestry Management Plan was performed thanks to funding received from the New York State Department of Environmental Conservation's (DEC) Division of Lands and Forests' Urban and Community Forestry Program, which works to increase public awareness of the importance of trees and help communities develop and implement comprehensive tree management plans to create healthy forests while enhancing quality of life.

Hastings-on-Hudson would like to recognize the support from the following organizations and individuals:

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## Executive Summary

In August 2021, the SavATree Consulting Group performed an inventory and risk assessment for trees growing at Uniontown Park, Zinsser Park, Pulver's Woods, and Rowley's Bridge Trail in Hastings-on-Hudson, NY. Trees growing within the maintained areas of the park and within 30 feet of trails were included.

One thousand and two trees were assessed in the inventory; 352 at Uniontown Park, 249 at Zinsser Park, 169 in Pulver's Woods, and 232 along the Rowley's Bridge Trail. Fifty-seven different species of trees were included in the inventory. The most common species is Norway maple with 302 trees (30% of the inventoried population).

There are forty-nine dead trees in the inventory (5% of the population) and 72 that are in poor condition (7%). 88% of the population is in Fair or better condition.

The data was run through i-Tree Eco to provide an environmental analysis report on the benefits provided by the trees. Outputs include carbon sequestration, oxygen production, and stormwater runoff avoided, and pollution removal. The full i-Tree report has been provided as a separate document.

Management recommendations were made for 375 of the trees in the inventory. Two-hundred and six trees are recommended for removal; 45 are High priority and 161 are Medium. Pruning and/or installation of supplemental support cables is recommended for 168 trees. Eleven are High priority recommendations and 25 are Medium priority. In addition, there are 116 low priority, routine pruning recommendations and 16 low priority, training pruning recommendations. Additional testing to determine the extent of internal decay is recommended for one tree. The estimated cost to perform the recommended work over a five year period is \$240,915.

## Introduction

The Village of Hastings-on-Hudson is three square miles in size with a population of about 8,000. It maintains over 150 acres in parkland, of which residents are justifiably proud. Some of this land has been previously inventoried and is at the maintenance stage. But other productive work lies ahead for this environmentally conscious community. The scope of work for this project included four parks: Zinsser Park, Uniontown Park, Pulver's Woods, and Rowley's Bridge Trail. The goal is for commonly used areas in the parks to be proactively managed so that the Village will enjoy a greater use of the woods, including knowledge of trees, understanding of proper arboricultural techniques, and restoration of the health of the woodlands.

In 2019, a very large, seemingly healthy tree at Uniontown Park failed and fell onto the baseball field destroying an unoccupied concrete dugout and chain link fence. Despite its healthy canopy, the base of tree had significant internal, basal decay. The incident has upset parents and park-users. Little League representatives have voiced concerns about Uniontown Park safety for a number of years and this incident reinforced their uneasiness. Village leadership, too, was concerned. In addition to the



Uniontown dugout incident, a number of concerning signs regarding tree health have been noted including big trees alongside the ballfields with exposed root systems; trees exhibiting unusual budding and leafing patterns; and the frequency of falling branches. These issues demonstrated a need for a formal tree condition and risk assessment by a qualified arborist. The Village was able to secure funding and the inventory was performed in August, 2021.



Photo taken by the Village of the tree that failed onto the dugout at Uniontown Park. Although the tree was healthy, its base had significant decay.

## How did Hastings-on-Hudson perform the inventory?

Hastings-on-Hudson developed an RFP for the tree inventory and selected the SavATree Consulting Group to perform the work. Their assignment was to perform a tree inventory that includes well-trafficked portions of the parks, focusing specifically on hazard trees and at-risk trees:

**Uniontown Park:** Trees within thirty (30) feet of recreational fields, courts, comfort station, playground, parking lot, and along the walking trails.

**Zinsser Park:** All trees within the maintained areas of the park were inventoried. In addition, trees within 30 feet of adjacent properties and trails within the woodlot were included.

**Pulver's Woods:** The inventory will cover trees within 30 feet of each side of the trail.

**Rowley's Bridge Trail:** Trees within 30 feet of each side of the trail on public land were inventoried.

SavATree Consulting Group provided a Registered Consulting, ISA Certified, and ISA Tree Risk Assessment Qualified Arborist to perform the tree inventory. Each tree in the inventory received an ANSI A300 level 2 visual assessment (ground-based, 360-degree visual assessment of exposed roots, trunk, limbs, and foliage; includes sounding for internal decay with a mallet) and the following data points were collected:

- GPS Location (X and Y GPS coordinates) of trees
- Species (botanical and common names)
- Diameter at breast height (DBH; diameter measured 4.5 feet above grade)
- Crown condition and/or percentage of crown dieback (excellent to dead rating)
- Specific observations of concern
- ISA Qualitative Risk Rating (Extreme, High, Moderate, Low)
- Recommended tree maintenance actions (i.e., remove tree due to defects which cannot be treated), pruned to reduce risk (formative, deadwood, subordinate), prune young trees to improve shape and train, install structural support, pest treatment, stump removal, etc.)
- Priority level of recommended tree maintenance (Immediate, High, Medium, Low, None at this time)
- Residual Risk Rating (Estimated ISA Qualitative Risk Rating after recommended tree maintenance is performed; Extreme, High, Moderate, Low)
- Whether the tree is a NY State native (Yes/No)
- Whether the tree is invasive in NY State (Yes/No)
- Physical tagging of all trees and recordation of tag number
- Photo of select high priority/elevated risk trees
- Name of park/trail where tree is located
- Name of Arborist and date of recording Information
- i-Tree-Eco summary report of environmental benefits

SavATree used ArcGIS Online on an iPad to perform the tree inventory. We used a diameter tape to measure the diameter at a height 4.5' from the base of the trunk.

SavATree inputted the data into Excel and analyzed it using Pivot Charts and Tables. After QA/QC was performed, we exported the results to a web app for your use.

## What were the findings of the inventory?

SavATree included 1,002 trees from Village Parks in the inventory; 352 at Uniontown Park, 249 at Zinsser Park, 169 in Pulver's Woods, and 232 along the Rowley's Bridge Trail. The tree tags were provided by the Village and run from 1001 through 1990. In addition, there are fourteen untagged trees that were inaccessible due to site conditions. These trees are numbered 9000-9013. Trees 9000-9003 are located in a very area of Zinsser Park between the Community Garden and aqueduct trail. 9004-9013 are located in difficult-to-access wooded areas along Rowley's Bridge Trail.

The complete inventory database has been provided as a separate excel file. The web app for the overall inventory can be found here: <https://arcg.is/1ya9jq>. The map includes the Westchester County GIS Parcel layer. Sometimes this layer can take a long time to load or make the map hard to see on a mobile device. The user can click on the three squares icon at the upper-right corner of the map to remove any layer from the visible map. Unclicking a layer will make it invisible, but will not delete it from the map, so it can be added back any point as needed.

Tree icons are color-coded based upon Priority Level of management recommendation where red = High; orange = Medium; yellow = Low; and green = None at this time.

The map can be zoomed by clicking on the +/- icons at the upper-left corner. Clicking on the Home icon below will restore to the map to its original extent. Clicking on any tree icon will bring up a pop-up window with all its collected data.

The map can be searched by tree tag number by using the text box at the top of the page. The map will zoom to the searched tree.

Trees can be filtered by Condition, ISA risk rating, tree care maintenance type, and/or tree maintenance priority by clicking on the funnel-shaped icon below the search text box. In order to make the filters appear on the map, the toggle switch at the upper-right of the pop-up window must be activated. Note: when a filter is activated, a search will only be operated on the trees that are visible on the map within that filter.

The current extent of the map can be printed/saved as a PDF by clicking on the printer icon to the right of filter.

The basemap (shows streets instead of satellite imagery, etc.) can be changed by clicking on the four-square icon to the right of print.

The map can be shared via email or social media by clicking on the three arrows icon to the right of the basemap gallery.

Clicking on the arrow at the bottom-middle of the page will bring up the data table for the tree inventory. If a filter is activated, only those trees will appear in the table.

If the browser on your mobile device allows location/GPS access, clicking on the target icon under the home icon will show your location within the map.

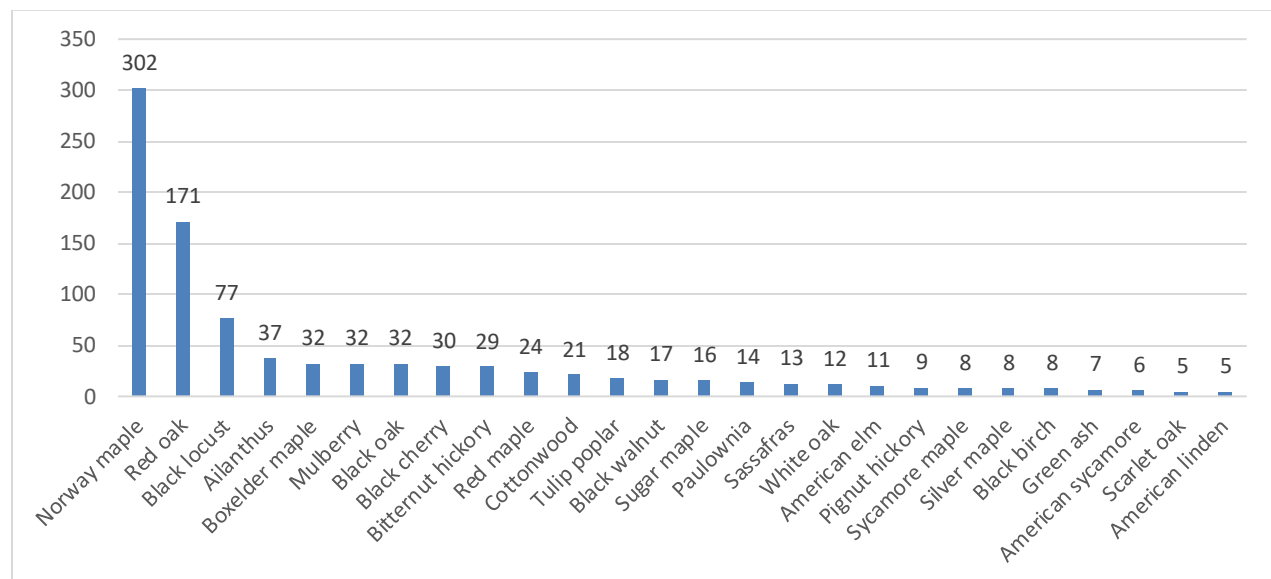
## Tree Species

Dr. Frank Santamour has previously described a method for managing diversity in urban plantings; this is referred to as "the 10-20-30 formula". The formula states that for maximum protection against pest outbreaks, the urban forest should contain no more than 10% of any single tree species, no more than 20% of any tree genus, and no more than 30% of any tree family.

Notable failures of this general guide include the Dutch elm disease outbreak on American elms starting in the 1930's and the impact of emerald ash borer on ash trees that is currently taking place. These pests left some towns completely devoid of street trees and devastated certain parklands.

Although this was not a complete inventory of each park, useful information can be obtained. From my personal observation, the species makeup of the areas included seemed to align with the overall population of each park.

Overall, species diversity within the four study areas is fair (see Figure 1 below). A total of 57 species were included in the inventory; two of which exceed the 10% or more threshold. There are 302 Norway maple (*Acer platanoides*) trees (30.1% of the population) and 171 red oak (*Quercus rubra*) trees (17.1%).



**Figure 1: Species composition from the Hastings-on-Hudson parks tree inventory. Species with 4 and fewer individuals were removed from this table to improve readability.**

Two genus exceed the 20% recommended threshold. There are 392 maple (*Acer*) trees (39.1%) and 229 oaks (*Quercus*, 22.8%). The Sapindaceae family includes maples and horse chestnuts and has 394 individuals in the tree inventory (39.3%).

Five-hundred and fourteen trees in the inventory are native to New York State. This is 51.3% of the population.

Invasive species are non-native species that can cause harm to the environment, the economy or to human health. There are many different lists or ratings for the invasiveness of a given species. Five hundred and six trees (50.5%) within the inventory are considered invasive by some measure. These species include Norway maple, ailanthus (aka tree-of-heaven, *Ailanthus altissima*), black locust, boxelder maple, mulberry, paulownia (*Paulownia tomentosa*), sycamore maple (*Acer pseudoplatanus*), callery pear (*Pyrus calleryana*), sweet cherry (*Prunus avium*), and Siberian elm (*Ulmus pumila*).

## Uniontown Park

Of the 352 trees in the Uniontown Park inventory, 92 are Norway maple (26%) and 69 are red oak (20%). 68% of the trees are NY native and 32% can be considered invasive.

## Zinsser Park

Of the 249 trees in the Zinsser Park inventory, 92 are Norway maple (37%) and 27 are boxelder maple (*Acer negundo*; 11%). 45% of the trees are NY native and 62% are invasive.

## Pulver's Woods

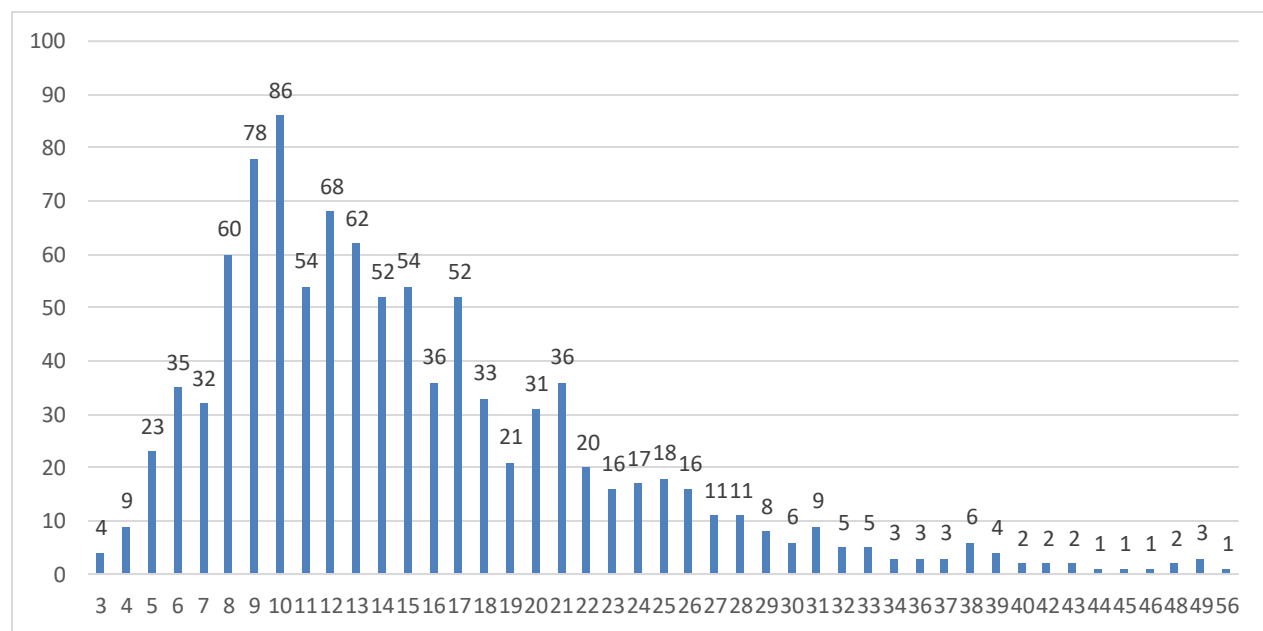
Of the 169 trees in the Pulver's Woods inventory, 77 are Norway maple (45%); 34 are black locust (*Robinia pseudoacacia*); and 31 are red oak (18%). 34% of the trees are NY native and 66% are invasive.

## Rowley's Bridge Trail

Of the 232 trees within 30 feet of the Rowley's Bridge Trail, 53 are red oak (23%); 41 are Norway maple (18%); 25 are mulberry (*Morus spp.*, 11%); and 24 are black locust (10%). 46% of these trees are native to NY and 54% are invasive.

## Tree Diameter Distribution

Tree diameter distribution provides a proxy for tree age and an indicator of population sustainability. A "reverse-J" curve represents a desirable diameter distribution in tree populations as most individuals should be in the smaller diameter classes. This provides for a sustainable canopy; as older and larger individuals die or fail, there is sufficient stock of younger individuals in the population to take their place.



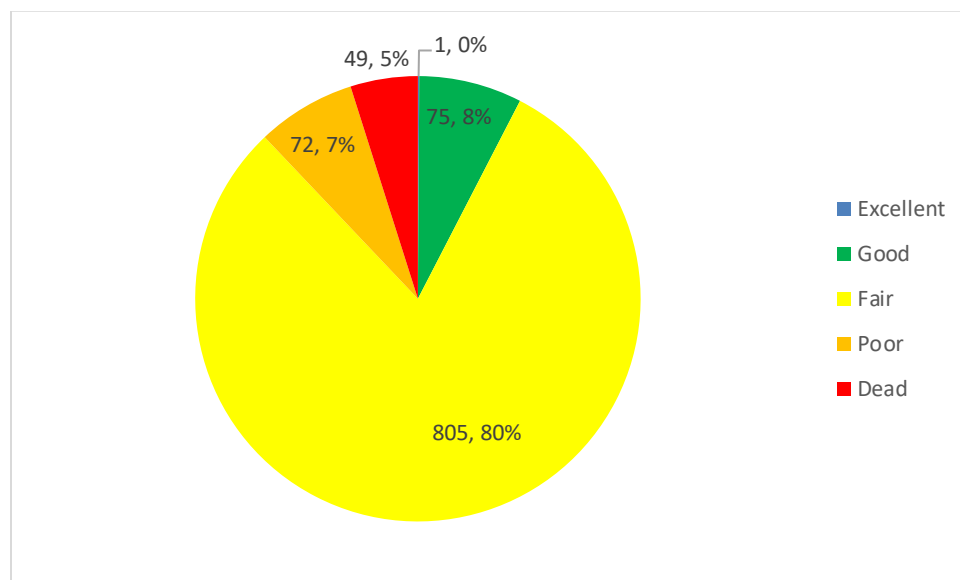
**Figure 2: Diameter distribution of the 1002 trees in the Hastings-on Hudson park tree inventory**

We use size and a proxy for age when looking at the diameter distribution, realizing that this is inexact as some trees are small in stature and so may be mature and still quite small (ex: dogwood). However, this approach gives us a good “big picture” idea of how resilient or vulnerable the population is. The Village’s park tree distribution generally shows a “reverse-J” shape, meaning the majority of trees are younger. This is desirable as you want to have enough younger individuals growing up to assume the roles of the older ones as they decline and are removed.

There is some concern with the large percentage of maple, oak, and invasive trees within the population. If a pest that targets either of these genera (such as oak wilt) were to become established, it could have devastating impacts on the canopy coverage throughout the village.

## Tree Condition

We assigned health condition ratings for each of the trees in the inventory. Five ratings were possible: Excellent, Good, Fair, Poor, and Dead. Figure 3 below shows the current breakdown of condition ratings in the study areas. There are 49 dead trees (5%) and 72 trees in Poor condition (7%). 88% of the trees are in Fair or better condition. This indicates a healthy overall tree population.



**Figure 3: Condition of trees included in the Hastings-on-Hudson park tree inventory**

## Invasive Species

An invasive species is an organism that causes ecological or economic harm in a new environment where it is not native. Related to tree population management, invasive species may be either non-native trees that displace native trees or insect/disease issues that damage native trees and do not have native predators.



As noted above, 50.5% of the trees in this inventory can be considered invasive. If this percentage is consistent over all park land in Hastings, there are thousands of invasive trees. Eradication can only be obtained by removing all invasive trees and grinding/removing their stumps so that they cannot regenerate. This would not be economically feasible at this scale.

Several invasive insect issues were observed during the inventory. These include hemlock woolly adelgid, elongate hemlock scale, and emerald ash borer. These issues can be effectively treated if the infestations are not too severe. Emerald ash borer can kill trees within 2 or 3 years of initial infestation. Treatment is not recommended for trees that have greater than 33% crown dieback.

Others to be on the lookout for that were not observed at this time are Asian longhorned beetle and spotted lanternfly.

Fact sheets for these pests are included in Appendices A-E at the end of this report.

## i-Tree Eco Assessment and Tree Cover Benefits

The data from the tree inventory was run through i-Tree Eco. The full report based on the inventory data has been provided as a separate PDF document. The trees in the study area provide approximately 12 acres of tree canopy cover to the Village. The three most common species are Norway maple, red oak, and black locust. The maples account for approximately 43% of the population and 62% of the leaf area. This lack of diversity is cause for concern.

The 994 trees studied provide the following ecosystem services:

- Tree cover: 11.77 acres; 68.28 acres of leaf area
- Pollution removal: 617.6 pounds/year (\$4.65 thousand/year)
- Carbon storage: 705 tons (\$120 thousand)
- Carbon sequestration: 15.01 tons/year (\$2.56 thousand/year)
- Oxygen production: 40.02 tons/year
- Avoided runoff: 24,000 cubic feet/year (\$1.6 thousand/year)
- Structural values (Urban forests have a structural value based on the trees themselves (e.g., the cost of having to replace a tree with a similar tree); the structural value of an urban forest tends to increase with a rise in the number and size of healthy trees. Through proper management, urban forest values can be increased; however, the values and benefits also can decrease as the amount of healthy tree cover declines): \$2.13 million

## ISA Qualitative Risk Assessment

All trees within striking distance of a potential target pose some level of risk – there is no way for a certified arborist to state that any tree has zero chance of failure. In any tree risk situation, there are

three management options: remove the risk by removing all targets; remove the risk by removing the tree; mitigate the risk by treating the tree and/or the site.

If the tree is treated, reducing its risk can be accomplished by improving tree health and/or decreasing likelihood of limb failure by reducing the size of the tree and/or removing dead, diseased, or weakened branches. Tree health can be improved by restricting activities in the root zone that could lead to compaction and maximizing root health by turf removal, installation of composted mulch as a ground cover, prescription fertilization, and root health treatment.

The site can be treated by reducing the occupancy of the potential strike zone for a tree. This can be accomplished by moving benches or seating areas or the installation of fencing/barriers to prevent pedestrian access under a tree's canopy.

If the tree is removed, risk of tree failure would be removed. However, the benefits the tree provides would also be lost.

The Qualitative Tree Risk Assessment protocol is the best management practice outlined by the International Society of Arboriculture (ISA) for assessing the level of risk associated with standing trees within a given time frame. In order to perform this type of risk assessment, the assessor first determines the Likelihood of Failure and Likelihood of Impacting a target. A potential target may be a person, structure, vehicles, etc. This likelihood of Failure is rated as: Imminent, Probable, Possible, or Improbable, where:

**Improbable** - the tree or branch is not likely to fail during normal weather conditions and may not fail in many severe weather conditions within the specified time period.

**Possible** - failure could occur, but it is unlikely during normal weather conditions within the specified time period.

**Probable** - failure may be expected under normal weather conditions within the specified time period.

**Imminent** - failure has started or is most likely to occur in the near future, even if there is no significant wind or increased load.

A time period of five years was used for this assessment.

The likelihood of impacting a target is rated as: Very Low, Low, Medium, or High, where:

**Very low:** the chance of the failed tree or branch impacting the specified target is remote. This is the case in a rarely used site that is fully exposed to the assessed tree, or an occasionally used site that is partially protected by trees or structures. Examples include a rarely used trail or trail head in a rural area, or an occasionally used area that has some protection against being struck by the tree failure due to the presence of other trees between the tree being assessed and the targets.

**Low:** it is not likely that the failed tree or branch will impact the target. This is the case in an occasionally used area that is fully exposed to the assessed tree, a frequently used area that is partially exposed to the assessed tree, or a constant target that is well protected from the assessed tree. Examples are a little-used service road next to the assessed tree, or a frequently used public street that has a street tree between the street and the assessed tree.

**Medium:** the failed tree or branch may or may not impact the target, with nearly equal likelihood. This is the case in a frequently used area that is fully exposed on one side to the assessed tree, or a constantly occupied area that is partially protected from the assessed tree. Examples include a suburban street next to the assessed street tree or a house that is partially protected from the assessed tree by an intermediate tree.

**High:** the failed tree or branch will most likely impact the target. This is the case when a fixed target is fully exposed to the assessed tree or near a high-use road or walkway with an adjacent street tree.

The matrix below is then used to determine the Likelihood of Failure and Impact.

Likelihood of Failure	Likelihood of Impacting Target			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

**Figure 4 – Likelihood of failure and impact matrix adopted from the ISA Tree Risk Assessment BMP**

Next, the assessor determines the most likely Consequences of tree failure. This is ranked as: Negligible, Minor, Significant, or Severe. The matrix below is then used to determine the overall risk rating for the subject tree. The possible ratings are: Low, Moderate, High, and Extreme.

Likelihood of Failure and Impact	Consequences			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

**Figure 5 – Qualitative Risk Rating matrix adopted from the ISA Tree Risk Assessment BMP**

Of the 1002 trees in the inventory, 973 (97.1%) were assessed to be Low risk. There were 28 Moderate risk (2.8%) and one High risk tree (Tag #1721). No trees were assessed to be Extreme risk.

The high percentage of Low risk trees is expected in a park tree inventory. Parks are only open during daylight hours, so the only targets that have High likelihood of impact are permanent structures such as fences, playground equipment, restrooms, and other buildings. Most of the trees in this inventory grow along low-use trails and, therefore, were assigned Low likelihood of impact. Such trees are very likely to rate out as Low overall risk when using this methodology.

## Next Steps

The SavATree Consulting Group made management recommendations for 375 of the 1002 trees growing in the study areas. We made management recommendations and associated priority level for each tree in need of action. The tree management recommendations were developed to aid Hastings-on-Hudson's goal for preserving its urban forest.

This five-year program was designed to mitigate risk through prioritized tree removal and pruning and to improve tree structure through proactive pruning. SavATree prioritized the work based first based upon risk rating, but also considered the likelihood of tree failure. This was particularly important along wooded, low-use trail where even standing dead trees had Low ISA Qualitative Risk Ratings. Tree conditions and associated risk change over time, so regular monitoring/re-assessment should be performed beyond these recommendations.

## Goals of the Five-Year Plan

By implementing the five-year plan detailed below, the Village of Hastings-on-Hudson should accomplish the following goals:

1. Make the parks and trails safer for visitors by retaining a qualified tree care company to implement recommendations.
  - a. High priority recommendations should be performed first, following by medium, and low. Additional information on priority of recommendations is given below and in Table 1.
2. Maintain the parks by performing industry-approved structural and clearance pruning.
  - a. Structural pruning is a cost-effective way to correct structural issues in young trees and help to reduce their associated risk as they mature.
  - b. Clearance pruning, such as elevation over parking spaces, playgrounds, and fields will improve the visitor experience and make parklands more usable.
  - c. Future plantings should be assessed for the need for young tree structural pruning.
3. Reassess all trees at least every-other-year as tree health and risk changes over time.
  - a. Walk through high-use areas of the park following storm events to identify storm damage in need of immediate action.
  - b. Consider sending members of DPW/Parks staff for training on tree risk assessment to assist with assessments.

4. Maintain and update the tree inventory as trees are removed, pruned, planted, etc. so that it remains current and useful.
  - a. SavATree will update the online map based upon edits made by the Village to the provided Excel file.
  - b. Consider combining data from prior tree inventories into one master map.

## Management Priorities

While in the field performing the inventory, SavATree assigned a maintenance priority level to each tree of High, Medium, Low, or None at this time. For budgeting the five-year management plan, these priority ratings were combined with the management type (remove, treat tree, treat site, etc.) to divide the recommendations into seven groups: High Priority Testing; High Priority Removals; Medium Priority Removals; High Priority Pruning; Medium Priority Pruning, Low Priority Routine Pruning, and Low Priority Training Pruning. The Village should perform all High priority recommendations before addressing the Medium priority and Low priority last.

The High and Medium Priority recommendations are designed to reduce risk associated with trees either through removal, pruning of deadwood, and/or installation of supplemental support systems. These actions should be performed in the first three years of the plan.

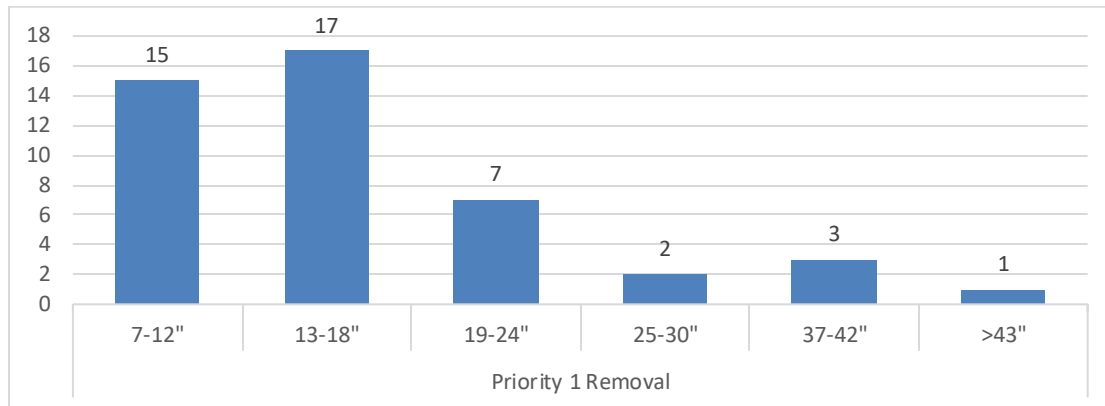
Low Priority Routine pruning addresses conflicts such as branches against buildings, power lines, road/building signs, and structural pruning of larger trees. Training pruning is performed on young trees to address structural issues, such as codominant stems. Performing this type of pruning is a cost-effective way to address issues that will be a problem at maturity. These actions should be performed in years 3-5 after the priority issues are addressed.

## Tree Removals

Tree removal is a necessary management option to remove the risk and liability associated with Village trees. There are tree issues that cannot be resolved from pruning or installation of support cables and sites where targets cannot be eliminated. Some examples include standing dead trees; trees with significant decay, trees with significant decline that would not be cost-effective to prune because they are likely to die in the near-term, and invasive tree species that may not be cost-effective to prune.

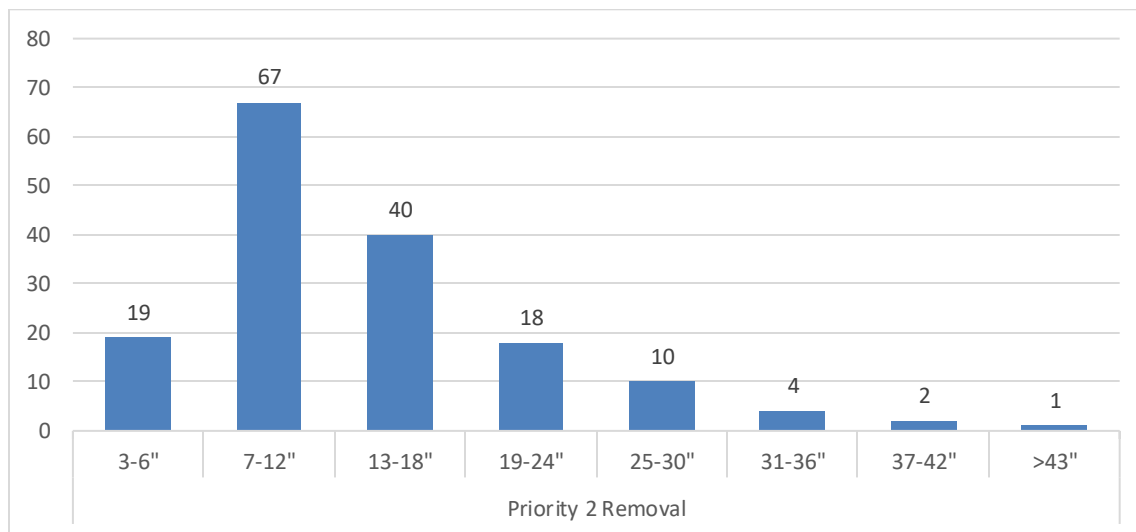
Even though removal is a more expensive management option, it is important to secure the funding needed to complete priority tree removals. Removal eliminates risk/liability and promotes public safety. Tree removals can be performed at any time of the year.

The tables on the following page show the number of High and Medium Priority removals sorted by diameter class. There are 45 High Priority removals and 161 Medium Priority.



**Figure 6 – High priority removals sorted by diameter class**

Seventeen of the High Priority tree removals are in Uniontown Park. Twelve are located in Pulver's Woods; 13 in Zinsser Park; and three along Rowley's Bridge Trail.



**Figure 7 – Medium priority removals sorted by diameter class**

Thirty-nine of the Medium Priority tree removals are in Uniontown Park. Twenty-six are located in Pulver's Woods; 67 in Zinsser Park; and 29 along Rowley's Bridge Trail.





*Photo 1 – Photo taken during the inventory showing Trees 1721 and 1722. These are standing dead trees located at north border of Zinsser Park in proximity to a residence on Wagner Place. The tree on the right (1721) leans toward the house and is rated as High risk. The trees on the left (1722) leans parallel to the wooded edge and is Moderate risk. Both trees are High priority removals.*

## Tree Pruning

Tree pruning for risk reduction commonly involves the removal of deadwood from the canopy, but also may include the installation of supplemental support systems and/or canopy reduction. Dead branches and limbs are prone to failure during storms and normal weather conditions. Codominant stems with included bark are more likely to fail in storm events than trees with a single lead or without included bark.

Removal of deadwood can reduce the risk associated with trees and improve their aesthetics. High Priority pruning is recommended for trees with large deadwood and deadwood over high-use areas such as sidewalks, parking lots, and playgrounds. Medium Priority pruning is for smaller deadwood and large deadwood over lower-use areas.

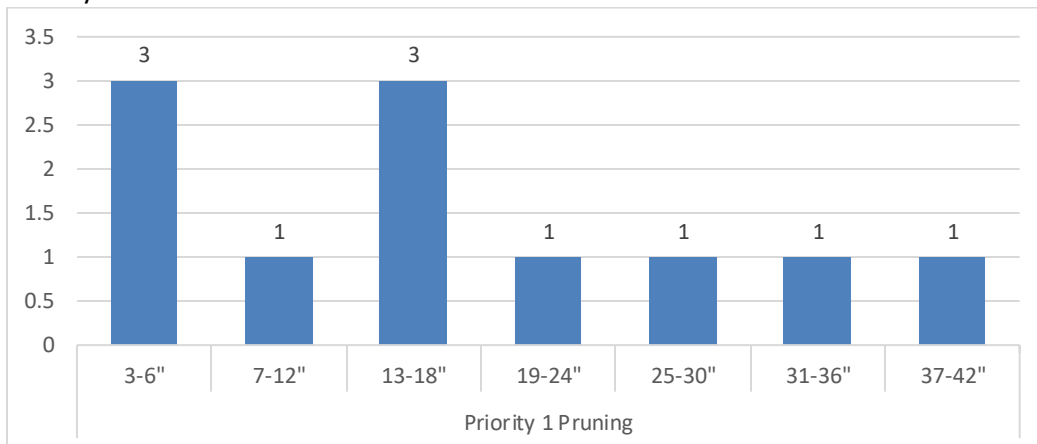
Removal of support wires/wraps that are or will soon girdle recent plantings are also included in this group. This work can be performed by DPW/Parks staff.

Pruning and installation of supplemental support cables should be performed by a qualified tree care company. Deadwood pruning is easiest to perform during the growing season because the dead

branches are easier to see (and it's easier for the Village to confirm that trees were pruned properly). However, research shows that growth and wound closure are maximized if pruning takes place before the spring growth flush. Some trees, such as maples, tend to "bleed" (excessive sap flow from a wound) if pruned early in the spring. It may be unsightly, but it is of little consequence to the tree.

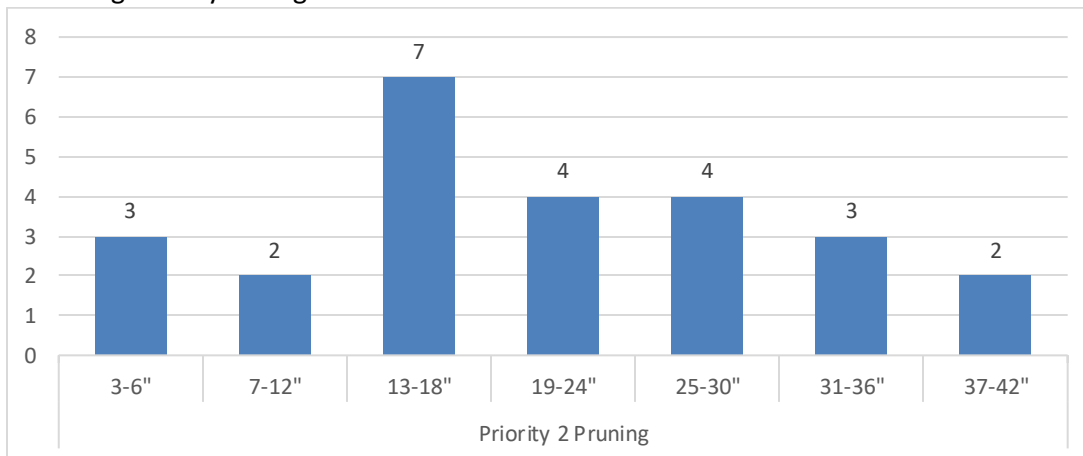
Pruning of live foliage should be avoided in the late spring/early summer right after the new flush of growth. Significant energy is used to push out new growth every year, so the tree needs foliage at that time to photosynthesize and create more.

As shown in the figures below, there are 11 High Priority pruning recommendations and 25 Medium Priority.



**Figure 8 – High Priority Pruning recommendations sorted by diameter class**

Four of the High Priority pruning recommendations are in Uniontown Park. Six are in Zinsser Park and one along Rowley's Bridge Trail.



**Figure 9 – Medium Priority pruning recommendations sorted by diameter class**

Six of the Medium Priority tree prunings are in Uniontown Park. Five are located in Pulver's Woods; seven in Zinsser Park; and seven along Rowley's Bridge Trail.



***Photo 2 – Photo taken during the inventory showing Tree 1664 in Zinsser Park. The weak point of this tree is the codominant union with included bark (yellow arrow). Installation of a supplemental support cable and canopy reduction pruning will help to reduce the risk associated with the tree from Moderate to Low. This is a High priority recommendation.***



***Photo 3 – Photo taken during the inventory showing Tree 1423 on the western edge of Pulver's Woods. There is large deadwood in the canopy over the fence line of a property along High Street. Pruning of this deadwood is a Medium priority recommendation.***

## Additional Decay Testing

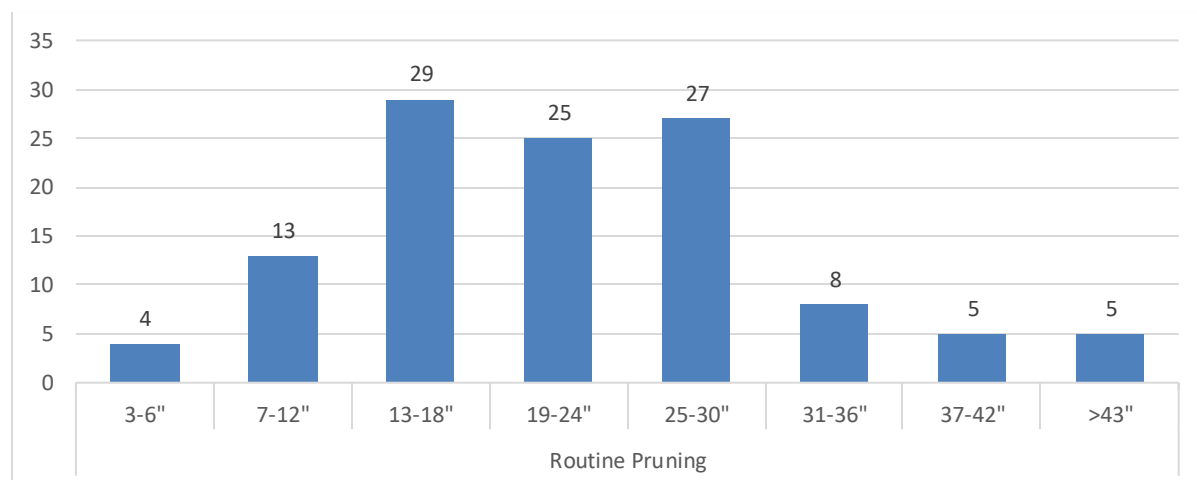
High Priority Testing is recommended for one tree: tag #1535. This is a large sycamore tree near the entrance of Zinsser Park. Sounding the base of this tree with a mallet indicated the presence of internal decay. The extent of this decay will impact its ISA Risk Rating and best management recommendation. If there amount of decay is significant, tree removal may be required. If the amount of decay is not yet critical, the tree will require monitoring and re-testing in the future.

Additional testing for internal decay can be performed with a Resistograph drill, TreeRadar, Sonic Tomography, or a variety of other industry-approved tools. Each of these tools will provide some sort of documentation showing the ratio of solid to decayed/missing wood. In general, when the amount of solid wood is less than 1/3 the diameter of the tree, the amount of decay is considered significant and removal should be considered. Testing should be performed by a qualified tree care company or consulting arborist.

## Routine Pruning

Low Priority Routine pruning is mainly used to address concerns other than risk reduction. This may include clearance pruning for utility lines, buildings, sidewalks, roads, etc. or pruning to improve tree structure and help reduce the likelihood of elevated risk in the future. Structural pruning includes canopy reduction and subordination pruning of codominant stems. Pruning to remove smaller deadwood over low-use areas is also included in this group.

Young tree training is a specific type of routine pruning that is performed on young and recently planted trees. One hundred and sixteen trees have Routine Pruning recommendations.



**Figure 10 – Routine Pruning recommendations sorted by diameter class**

Routine pruning recommendations are more commonly made for smaller, still developing trees when compared to Priority pruning. This type of pruning is very important as it will help to extend the length of a tree's life. It is also a very cost-effective way to manage tree issues as pruning younger/smaller trees

is less expensive than pruning mature trees that require climbing or bucket truck access. Pruning codominant stems or trees with poor form when young is less expensive than pruning mature trees and installing supplemental support systems.

Routine pruning may need to be repeated at regular intervals. Examples include maintaining tree size below wires, over parking/sidewalk, or to maintain clearance from buildings. In addition, phased reductions may be needed to correct structural issues.

The Village should consider hiring an ISA Certified Arborist to their staff in order to perform this type of pruning in-house. The only tools needed would be a hand saw, pole clip, and pole saw. Another option is to send a current DPW/Parks employee to a class to learn proper pruning methods and to obtain their ISA Certification. Having an effective young tree pruning program will reduce long-term maintenance costs.

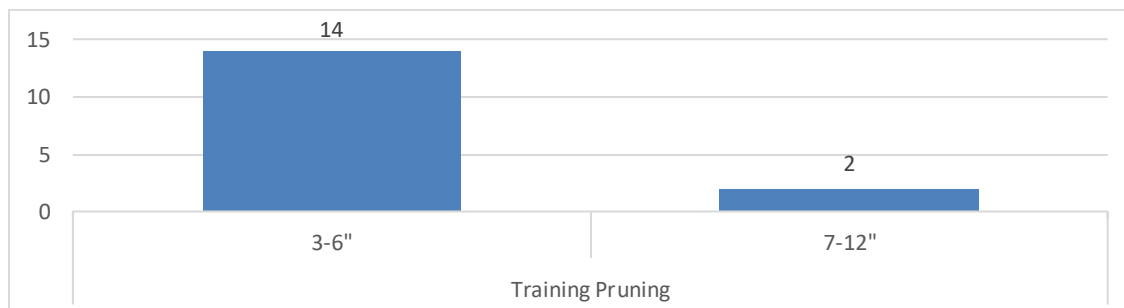
Fifty of the Low Priority Routine pruning recommendations are in Uniontown Park. Nineteen are located in Pulver's Woods; 18 in Zinsser Park; and 29 along Rowley's Bridge Trail.

## Training Pruning

Tree recommended for Training Pruning are under seven inches in diameter. Training is recommended for young trees with structural issues such as codominant stems and limbs with relatively large diameters compared to the parent stem. Addressing these issues now will reduce long-term maintenance costs and improve the lifespan of the tree. Sixteen trees were recommended for training pruning: three at Uniontown Park; 12 at Zinsser; and one at Rowley's Bridge Trail.

The Village is doing a good job of planting new trees. Post-planting care is important to maintain the aesthetics and develop the structure of these trees. Trees that are trained properly will live longer, require less maintenance in the future, and, therefore, cost less money to maintain over their life.

If there is not a qualified arborist on staff, this work should be performed by a tree care company.



**Figure 11 – Training Pruning recommendations sorted by diameter class**



## Tree Planting

Potential planting locations within these parks was not included as part of the project. SavATree worked under the assumption that the Village wants to maintain the existing greenspace within each park. However, new plantings may be required to replace trees within the maintained areas of each park.

Planting should occur in the spring or fall seasons when soil temperatures are moderate, and rainfall is more likely. It is best to avoid planting during the summer when temperatures are high as soils tend to dry out and new trees are easily stressed.

Proper tree selection for each site is important to improve survivability. Some species are shade tolerant and will not grow well in full sun; other species thrive in full sun and will not grow shade. Consideration should also be given to the mature size and aesthetics of the tree. Does the Village want a large tree that will provide shade at maturity or a flowering/fruiting tree that will benefit bees, insects, or birds? If there are wires or other canopy conflicts in the area, a smaller tree should be planted.

There are three common ways for new trees to be purchased: balled and burlapped (B&B), bare root, and containerized. B&B and containerized are very similar. For B&B trees, the roots have been cut and the tree removed from the ground and placed into a burlap bag which is then covered with a wire basket to keep the root together. Containerized trees are dug from the ground and placed into a plastic container that holds the root ball together (or may be grown directly in the container from seed). Containerized trees are often smaller than B&B. The advantage of these types of planting is that it is possible to obtain larger trees (especially for B&B) and they are easier to find at nurseries with a greater species selection. Some cons are that they are heavier to move and often require heavy machinery; they require larger holes to be dug, are more expensive, and the majority of roots are removed when transferred into the burlap/container. In addition, these trees are often misplanted. Proper planting requires the hole be 1.5 to 2 times as wide as the root ball, excess soil be removed from the top of the root ball so that the first root is at ground level, and both the burlap and wire basket be removed.

Bare root plantings are harvested from their growing nursery in the fall and all of the soil is removed from their roots. None of their roots are cut or pruned in any way. The trees are stored during the dormant season. The nursery must make sure the roots don't dry out before they are planted. The advantages of this type of planting is that the trees are very light as there is no soil, smaller holes are needed to plant the trees, they establish quicker because they have a full system, and they are less expensive than B&B. Some issues are that they can dry out if they aren't planted quickly, there tends to be less species diversity, and they are smaller at time of planting (generally less than 2-inches). Due to storage issues, bare root trees are only available in the early spring and tend to sell out. Bare root plantings tend to have higher survival rates.

Appendix F at the end of this report is a document created by the DEC with information on many native tree and shrub species.

Appendix G is a guide for proper b&b tree planting developed by ISA/Trees Are Good.



Appendix H is guide for proper bare root planting developed by the Arbor Day Foundation.

## Storm Assessment

Trees are more likely to fail during storm events than “normal” weather. Trees that fail into roads or wires are easily identified and get removed in a timely fashion. However, there are often tree/tree parts that fail into low use areas or that partially fail and remain hanging in tree canopies that are not identified. Hanging or actively failing tree parts can now fail during normal weather when parks, roads, and parking lots are in use. For these reasons, it is important to have a storm response plan in place.

Following every storm event, high-use areas of the Village and parks should be given a level 1 limited visual assessment. For roads, this can be as simple as two people in car driving at a reduced rate of speed. One person to drive and the other to look at the canopy of trees that may impact the road. The passenger should maintain a list of trees of broken/failing tree parts that occurred during the storm. It is not safe to perform this type of windshield assessment with only one person in the vehicle. Ideally, the passenger doing the assessment has received some level of tree risk assessment education and knows how to identify defects of concern.

For parks, someone should walk all of the high-use areas (parking lots, playgrounds, ball fields, etc.) following every storm. These assessments should be performed by an individual who has tree risk assessment training.

Less used areas of the park do not need to be assessed following every storm, but should be walked at least at the end of the storm season (at the end of the winter/early spring) before park usage peaks in the summer.

Storm-damage issues that are observed following storms should be acted on with high priority. In some instances, it may be necessary to temporarily close a road, playground, parking lot, etc. until the risk is mitigated.

## Maintenance Schedule

Based on the observations and recommendations from the inventory, an annual tree maintenance schedule was developed for the study areas within Hastings-on-Hudson. The local SavATree office provided general pricing for each recommendation type and diameter class. The High Priority removals and pruning should be performed first; ideally within the first year. The Medium Priority recommendations should be performed next and completed within three years. Finally, the Routine and Training pruning should be performed in years 4 and 5.

The ability to perform this work in a timely fashion is dependent upon funding. Hastings-on-Hudson may need to attempt to obtain grant money to implement the work on schedule. Years 1 and 2 are of greatest concern due to the number of removals and elevated risk/liability trees.

Each tree should be re-assessed on a regular basis with updated recommendations made. Storm damage, pest infestations, and age-related decline will occur and impact their management recommendations and associated priority.

Table 1 on the following page provides estimated tree maintenance costs over the next five years. (Note: The pricing does not include stump grinding/removal because most of the trees to be removed are growing in wooded areas. These are pre-bid, general prices; all costs are subject to change). It shows the cost for each of the seven maintenance-priority groups sorted by diameter class. The estimated total cost of tree maintenance over the next five years is \$240,915. This includes the following costs:

- \$49,735 in Year 1
- \$86,300 in Year 2
- \$45,575 in Year 3
- \$47,590 in Year 4
- \$11,715 in Year 5

Within the Year 1 work, the greatest priority should be given to the 29 trees with elevated risk ratings (1 High; 28 Moderate). In general, removals should be prioritized over pruning. In addition, larger trees should be treated before smaller trees when budget is an issue. This is because larger trees tend to have larger tree parts that may fall from a greater height if they were to fail. Therefore, the consequences of branch/tree failure from these trees tend to be greater (even if their overall risk is Low). In addition, larger trees tend to have larger strike zones that can impact larger areas of a park/trail.

Appendices I through M provide all of the trees with recommended maintenance actions for Years 1-5 (Appendix I includes Year 1 recommendations, Appendix J includes Year 2, etc.). These tables are also included as separate Tabs in the tree inventory data Excel file.

**Table 1: Estimated Cost of Five-Year Maintenance Program**

Estimated Costs for Each Activity			Year 1		Year 2		Year 3		Year 4		Year 5		Five Year Cost
Activity	Diameter	Cost/Tree	Trees	Total Cost	Trees	Total Cost	Trees	Total Cost	Trees	Total Cost	Trees	Total Cost	
High Priority Testing	>43"	\$1,000.00	1	\$1,000.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$1,000.00
<b>Activity Totals</b>			<b>1</b>	<b>\$1,000.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>\$1,000.00</b>
High Priority Removals	3-6"	\$180.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00
	7-12"	\$460.00	15	\$6,900.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$6,900.00
	13-18"	\$760.00	17	\$12,920.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$12,920.00
	19-24"	\$1,250.00	7	\$8,750.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$8,750.00
	25-30"	\$1,550.00	2	\$3,100.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$3,100.00
	31-36"	\$2,000.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00
	37-42"	\$3,000.00	3	\$9,000.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$9,000.00
	43+"	\$3,900.00	1	\$3,900.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$3,900.00
<b>Activity Totals</b>			<b>45</b>	<b>\$44,570.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>\$44,570.00</b>
Medium Priority Removals	3-6"	\$180.00	0	\$0.00	0	\$0.00	19	\$3,420.00	0	\$0.00	0	\$0.00	\$3,420.00
	7-12"	\$460.00	0	\$0.00	0	\$0.00	67	\$30,820.00	0	\$0.00	0	\$0.00	\$30,820.00
	13-18"	\$760.00	0	\$0.00	40	\$30,400.00	0	\$0.00	0	\$0.00	0	\$0.00	\$30,400.00
	19-24"	\$1,250.00	0	\$0.00	18	\$22,500.00	0	\$0.00	0	\$0.00	0	\$0.00	\$22,500.00
	25-30"	\$1,550.00	0	\$0.00	10	\$15,500.00	0	\$0.00	0	\$0.00	0	\$0.00	\$15,500.00
	31-36"	\$2,000.00	0	\$0.00	4	\$8,000.00	0	\$0.00	0	\$0.00	0	\$0.00	\$8,000.00
	37-42"	\$3,000.00	0	\$0.00	2	\$6,000.00	0	\$0.00	0	\$0.00	0	\$0.00	\$6,000.00
	43+"	\$3,900.00	0	\$0.00	1	\$3,900.00	0	\$0.00	0	\$0.00	0	\$0.00	\$3,900.00
<b>Activity Totals</b>			<b>0</b>	<b>\$0.00</b>	<b>75</b>	<b>\$86,300.00</b>	<b>86</b>	<b>\$34,240.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>\$120,540.00</b>
High Priority Prune	3-6"	\$110.00	3	\$330.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$330.00
	7-12"	\$185.00	1	\$185.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$185.00
	13-18"	\$240.00	3	\$720.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$720.00
	19-24"	\$475.00	1	\$475.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$475.00
	25-30"	\$680.00	1	\$680.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$680.00
	31-36"	\$785.00	1	\$785.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$785.00
	37-42"	\$990.00	1	\$990.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$990.00
	43+"	\$1,225.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00
<b>Activity Totals</b>			<b>11</b>	<b>\$4,165.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>\$4,165.00</b>
Medium Priority Prune	3-6"	\$110.00	0	\$0.00	0	\$0.00	3	\$330.00	0	\$0.00	0	\$0.00	\$330.00
	7-12"	\$185.00	0	\$0.00	0	\$0.00	2	\$370.00	0	\$0.00	0	\$0.00	\$370.00
	13-18"	\$240.00	0	\$0.00	0	\$0.00	7	\$1,680.00	0	\$0.00	0	\$0.00	\$1,680.00
	19-24"	\$475.00	0	\$0.00	0	\$0.00	4	\$1,900.00	0	\$0.00	0	\$0.00	\$1,900.00
	25-30"	\$680.00	0	\$0.00	0	\$0.00	4	\$2,720.00	0	\$0.00	0	\$0.00	\$2,720.00
	31-36"	\$785.00	0	\$0.00	0	\$0.00	3	\$2,355.00	0	\$0.00	0	\$0.00	\$2,355.00
	37-42"	\$990.00	0	\$0.00	0	\$0.00	2	\$1,980.00	0	\$0.00	0	\$0.00	\$1,980.00
	43+"	\$1,225.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00
<b>Activity Totals</b>			<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>25</b>	<b>\$11,335.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>\$11,335.00</b>
Low Priority Prune	3-6"	\$110.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	4	\$440.00	\$440.00
	7-12"	\$185.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	13	\$2,405.00	\$2,405.00
	13-18"	\$240.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	29	\$6,960.00	\$6,960.00
	19-24"	\$475.00	0	\$0.00	0	\$0.00	0	\$0.00	25	\$11,875.00	0	\$0.00	\$11,875.00
	25-30"	\$680.00	0	\$0.00	0	\$0.00	0	\$0.00	27	\$18,360.00	0	\$0.00	\$18,360.00
	31-36"	\$785.00	0	\$0.00	0	\$0.00	0	\$0.00	8	\$6,280.00	0	\$0.00	\$6,280.00
	37-42"	\$990.00	0	\$0.00	0	\$0.00	0	\$0.00	5	\$4,950.00	0	\$0.00	\$4,950.00
	43+"	\$1,225.00	0	\$0.00	0	\$0.00	0	\$0.00	5	\$6,125.00	0	\$0.00	\$6,125.00
<b>Activity Totals</b>			<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>70</b>	<b>\$47,590.00</b>	<b>46</b>	<b>\$9,805.00</b>	<b>\$57,395.00</b>
Training Prune	3-6"	\$110.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	14	\$1,540.00	\$1,540.00
	7-12"	\$185.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	2	\$370.00	\$370.00
<b>Activity Totals</b>			<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>16</b>	<b>\$1,910.00</b>	<b>\$1,910.00</b>
<b>Grand Total</b>			<b>57</b>	<b>\$49,735.00</b>	<b>75</b>	<b>\$86,300.00</b>	<b>111</b>	<b>\$45,575.00</b>	<b>70</b>	<b>\$47,590.00</b>	<b>62</b>	<b>\$11,715.00</b>	<b>\$240,915.00</b>

## Conclusions

Trees provide a wealth of benefits to the environment and for people. In addition to creating oxygen, they reduce stormwater runoff, absorb pollutants, and provide cooling shade. However, trees need to be properly maintained to reduce risk to people and extend their lifespan.

The Village of Hastings-on-Hudson should use the findings of this park tree inventory to proactively manage their trees; starting with the High priority recommendations before moving onto Medium and Low priority work. It's important to point out that although some recommendations are Low priority, they are still important. Most of this work is structural pruning – addressing issues like codominant stems when trees are young is cost-effective and increases the life of the tree.

Going forward, it would be advantageous if the Village had an ISA Certified Arborist on staff. This individual could perform the young tree and clearance pruning for the Village and help with proper tree planting and post-storm tree assessments. Over time, training and existing team member or hiring a Certified Arborist would cost less than hiring a tree care company for all of this work.

## Further Reading

The International Society of Arboricultural (ISA) has a great website with useful information for tree owners. Here are a few of the applicable topics for additional reading:

- Choosing the Right Tree: <https://www.treesaregood.org/treeowner/choosingtherighttree>
- Managing Tree Hazards and Risks: <https://www.treesaregood.org/treeowner/treehazards>
- Storm-related Tree Damage:  
[https://www.treesaregood.org/Portals/0/TreesAreGood Storm%20Related%20Tree%20Damage 0721.pdf](https://www.treesaregood.org/Portals/0/TreesAreGood%20Storm%20Related%20Tree%20Damage%200721.pdf)
- Plant Health Care, Mulching, and Mature Tree Care:  
<https://www.treesaregood.org/treeowner/planthealthcare>
- Tree Planting: <https://www.treesaregood.org/treeowner/plantingatree>
- Tree Pruning: <https://www.treesaregood.org/treeowner/pruningyourtrees>



## Appendix A: Hemlock Woolly Adelgid Fact Sheet

### HEMLOCK WOOLLY ADELGID

*Adelges tsugae*



Department of  
Environmental  
Conservation

#### What is the hemlock woolly adelgid?

The hemlock woolly adelgid, or HWA, is an invasive, aphid-like insect that attacks North American hemlocks. HWA are very small (1.5 mm) and often hard to see, but they can be easily identified by the white woolly masses they form on the underside of branches at the base of the needles. These masses or ovisacs can contain up to 200 eggs and remain present throughout the year.



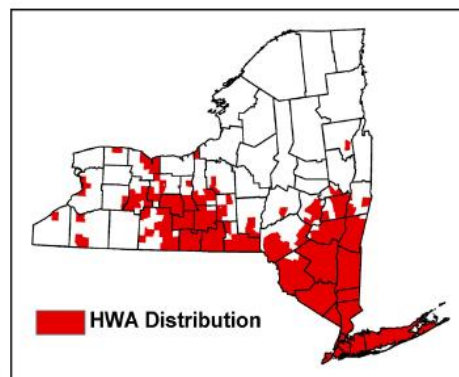
White woolly ovisacs on an eastern hemlock branch  
Connecticut Agricultural Experiment Station,  
Bugwood.org

#### Where is HWA located?

HWA was first discovered in New York State in 1985 in the lower Hudson Valley and on Long Island. Since then, it has spread north to the Capitol Region and west through the Catskill Mountains to the Finger Lakes Region, Buffalo and Rochester. In 2017, the first known occurrence in the Adirondack Park was discovered in Lake George.

#### Where does HWA come from?

Native to Asia, HWA was introduced to the western United States in the 1920s. It was first observed in the eastern US in 1951 near Richmond, Virginia after an accidental introduction from Japan. HWA has since spread along the East Coast from Georgia to Maine and now occupies nearly half the eastern range of native hemlocks.



#### What does HWA do to trees?

Once hatched, juvenile HWA, known as crawlers, search for suitable sites on the host tree, usually at the base of the needles. They insert their long mouthparts and begin feeding on the tree's stored starches. HWA remain in the same spot for the rest of their lives, continually feeding and developing into adults. Their feeding severely damages the canopy of the host tree by disrupting the flow of nutrients to its twigs and needles. Tree health declines, and mortality usually occurs within 4 to 10 years.

#### What trees are affected?

All species of hemlock are vulnerable to attack, but severe damage and death typically occurs in eastern (*Tsuga canadensis*) and Carolina (*Tsuga caroliniana*) hemlocks only. Eastern hemlock is the most common species of hemlock in New York State.

#### What are the signs of an infestation?

- White woolly masses (ovisacs) about one-quarter the size of a cotton swab on the underside of branches at the base of needles
- Needle loss and branch dieback
- Gray-tinted foliage



HWA damage to needles and branches  
Chris Evans, University of Illinois, Bugwood.org

## What is the impact on NYS ecosystems?

Hemlocks are ecologically important due to the unique environmental conditions they create under their dense canopies. These cooler, darker and sheltered environments are critical to the survival of a variety of species that rely on them for food, protection, and ideal growing conditions. Moose, black bears, salamanders, and migrating birds, as well as unique lichen and plant communities, are all closely associated with the hemlock ecosystem. Well suited for growing on steep slopes where not many other species can grow, hemlocks stabilize shallow soils and provide erosion control. In addition, they are often found along streams, where their shade helps moderate water temperatures, maintaining a suitable environment for cold-water species such as trout. Removal of hemlocks from NYS ecosystems can dramatically change ecosystem processes and may result in the loss of unique plants and wildlife.

## What is being done?

### Biological Control

Several predators from Asia have been successfully introduced in HWA- infested areas. In addition, *Laricobius nigrinus*, a beetle native to the Pacific Northwest, has been released at various locations in the Finger Lakes region with promising results, though more controls are needed to stop HWA.



*Laricobius nigrinus* feeding on HWA  
US Forest Service, Bugwood.org

### Chemical Control

Chemical insecticides can be used to treat an already infested tree or as a preventive measure in a high-risk infestation area. They are useful for treating individual, ornamental, or high-value trees, but are not practical or economical in a forest setting. Two insecticides that have shown promising results are Imidacloprid and Dinotefuran. Both must be applied by a licensed pesticide applicator, and either can kill HWA on its own. Applying both insecticides to an infested tree, however, combines the immediate effectiveness of the fast-acting Dinotefuran with the long-term protection of Imidacloprid, leaving the tree adelgid free for up to seven years.

### Integrated Pest Management

The most effective management strategy for controlling HWA combines the short-term protection of insecticides with the long-term solution of biological control agents. As research continues on the effectiveness of natural enemies to control HWA populations, chemical insecticides can keep trees alive and free of infestation until natural enemies take over.

## What can I do?

If you believe you have found HWA...

- Take pictures of the infestation signs as described above (include something for scale such as a coin or ruler).
- Note the location (intersecting roads, landmarks or GPS coordinates).
- Contact DEC (see below) or your local Partnership for Regional Invasive Species Management (PRISM) by visiting [www.dec.ny.gov/animals/47433.html](http://www.dec.ny.gov/animals/47433.html).
- Report the infestation to iMapInvasives at [www.NYiMapInvasives.org](http://www.NYiMapInvasives.org).
- Slow the spread of HWA in our forests by cleaning equipment or gear after it has been near an infestation, and by leaving infested material where it was found.

### CONTACT INFORMATION

#### Bureau of Invasive Species and Ecosystem Health

Division of Lands and Forests

New York State Department of Environmental Conservation

625 Broadway 5<sup>th</sup> Floor, Albany, NY 12233-4253

P: (518) 402-9425 | [foresthealth@dec.ny.gov](mailto:foresthealth@dec.ny.gov)

[www.dec.ny.gov](http://www.dec.ny.gov)

Updated January 8, 2018



Department of  
Environmental  
Conservation



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## Appendix B: Hemlock Elongate Scale Fact Sheet

# Pest Alert

United States  
Department of Agriculture

Forest Service

Northeastern Area  
NA-PR-01-02

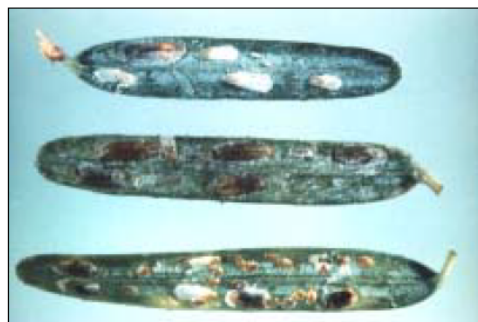
### Elongate Hemlock Scale

The elongate hemlock scale, *Fiorinia externa* Ferris, native to Japan, is a pest of eastern hemlock, *Tsuga canadensis*, and Carolina hemlock, *T. caroliniana*, in the Eastern United States. It has been found in the District of Columbia and in nine states from Virginia to southern New England and west to Ohio. *F. externa* attacks the lower surface of the hemlock needle, where it removes fluids from the mesophyll cells through piercing and sucking mouthparts. Elongate hemlock scale sometimes occurs with two other exotic pests — a circular hemlock scale, *Nuculaspis tsugae* (Marlatt), and the hemlock woolly adelgid, *Adelges tsugae* Annand. Mixed infestations of scales and adelgids can greatly hasten hemlock decline.

**Hosts:** Elongate hemlock scale is known to develop and reproduce on 43 species, representing 7 genera of native and exotic conifers, including 14 species that are native to the United States. Spruce and fir tend to be even more susceptible than hemlock, although it has not yet spread into the natural ranges of these other native conifers.

**Description:** Adult females are soft-bodied, legless, wingless, and are enclosed in an elongate, parallel-sided cover that is light yellow to brown, translucent, and about 2mm long. The male cover is elongate, white, and about 1.5mm long. Adult males are light brown, about 1.5mm long, have legs and wings, but are feeble-flying insects. Crawlers are legged first-stage nymphs that hatch from translucent eggs within the female cover. Crawlers are soft bodied, lemon-colored, and about 0.1mm long. Second-stage nymphs are enclosed in an oval, amber-colored cover, and are soft bodied, sedentary, and vary in size from 0.1mm to 1.0mm.

**Life History:** The elongate hemlock scale completes two generations each year in the Southern and Mid-Atlantic States, but usually only one in the Northeast. Its life stages are broadly overlapping everywhere, so crawlers can be found throughout the spring and summer. Crawlers are the only stage capable of dispersing and establishing new infestations. Dispersal between trees is primarily by wind and birds. Females have three stages of development after the egg, while males have five. Within a day or two after hatching, crawlers of both sexes settle beneath the thin waxy cuticle on the lower surface of the youngest hemlock needles and begin to feed. The first-stage nymph for both sexes secretes a cover around itself as it grows. It then molts into a second feeding stage, continues to grow and add to its cover. The second-stage female then molts into the adult feeding stage. The second-stage male molts into a non-feeding prepupa and spins a cocoon, where it pupates before it emerges as an adult. The adult male mates with the female and dies soon thereafter without feeding. The adult female lays about 20 eggs within her cover. When crawlers hatch, they exit through a small opening at the posterior end of the cover. Elongate hemlock scale usually overwinters, either as an egg or as an inseminated adult female.



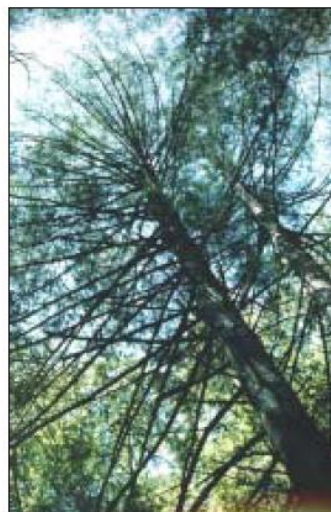
Nymphs and adults of elongate hemlock scale, *Fiorinia externa*, on the lower surface of hemlock needles.



Nymphs and adults of circular hemlock scale, *Nuculaspis tsugae*, on the lower surface of hemlock needles.

**Damage to Hemlock:** Scale populations build slowly on healthy trees, but much more quickly on stressed ones. Feeding by elongate hemlock scale causes foliage to turn yellow and drop prematurely. Dieback of major limbs, which progresses from the bottom of the tree upwards, usually occurs after scale density reaches about 10 individuals per needle. Trees often die within the next 10 years, but some survive longer in a severely weakened condition with only a sparse amount of foliage at the very top of the crown. These weakened trees are unsightly and have little chance for recovery. They often fall victim to secondary pests, such as hemlock borer and *Armillaria* root disease, and are readily broken and thrown by wind.

**Control:** Outbreaks of elongate hemlock scale often intensify following infestations of hemlock woolly adelgid, drought, or other stresses that have weakened the trees. Therefore, maintaining trees in healthy condition will discourage the buildup of scale populations. For example, hemlock have shallow roots and are consequently susceptible to drought, so ornamental trees should be watered during dry periods. However, applications of nitrogen fertilizer and broad-spectrum insecticides can exacerbate the pest problem. Nitrogen enhances the survival, development rate, and fecundity of *F. externa*, which results in higher scale densities on fertilized trees than on untreated ones. Also, inadequate pesticide application can cause resurgence in scale populations by eliminating natural enemies. The aphelinid parasitoid, *Aspidiotiphagus citrinus* Craw, consistently kills more than 90 percent of each generation of elongate hemlock scale in Japan. In the northeastern United States rates of parasitization are inconsistent (5-96 percent) because the life cycles of *A. citrinus* and *F. externa* are not synchronized. Two coccinellid beetles, the twice-stabbed ladybird beetle, *Chilocorus stigma* (Say), and *Microwisea misella* (LeConte), also attack *F. externa* in North America, but not frequently enough to control scale populations. Nevertheless, when broad spectrum or poorly applied pesticides eliminate these enemies, scale populations often rebound dramatically.



**Damage to hemlock caused by elongate hemlock scale.**



**Adult of the aphelinid parasitoid, *Aspidiotiphagus citrinus*.**



**Adult of the twice-stabbed ladybird beetle, *Chilocorus stigma*.**

Control of elongate hemlock scale is not possible in forests, but in ornamental plantings it can be controlled by thoroughly drenching trees with horticultural oil during early spring, when trees are dormant, and again, if needed, during the growing season. In forests, declining hemlocks should be salvaged to prevent buildup and spread of scale populations.

Photos and text by Mark S. McClure, The Connecticut Agricultural Experiment Station, P.O. Box 248, 153 Cook Hill Road, Windsor, CT 06095



For additional  
information, contact:

USDA Forest Service  
Northeastern Area  
Forest Health Protection  
180 Canfield Street  
Morgantown, WV 26505  
(304) 285-1542

USDA Forest Service  
Northeastern Area  
Forest Health Protection  
271 Mast Road  
Durham, NH 03824  
(603) 868-7600



## Appendix C: Emerald Ash Borer Fact Sheet



United States Department of Agriculture  
Agricultural Research Service



**BIOLOGICAL INTEGRATED PEST MANAGEMENT RESEARCH UNIT**

Robert W. Holley Center for Agriculture and Health, Ithaca, New York

**FACT SHEET**

### EMERALD ASH BORER

#### A Lethal Invasive Threat to North American Ash

Emerald ash borer (EAB) was discovered for the first time in North America in 2002 near Detroit, Michigan. The beetles probably arrived in solid wood packing materials on cargo ships or airplanes arriving from Asia. Research indicates EAB has been in North America since the early 1990s. The known infested area now encompasses significant portions of several states and provinces. Within these areas, more than 25 million ash trees have already been killed by EAB. Costs to municipalities, property owners, nursery operators and forest products industries will easily range into the billions of dollars.

Although adult EAB can fly up to a few miles, the greatest risk of long-distance spread is from human movement of infested ash trees or firewood. Regulatory efforts are now being undertaken that include prohibitions on the movement of these items. Eradication efforts are now directed at small, localized infestations. Nevertheless, the beetle has been found in an increasingly wide area each year since its discovery. **Two Ithaca-based ARS entomologists made the first discovery of EAB in New York in June 2009.**

Adult beetles are metallic green and about a half-inch long. Adults feed only on ash foliage but the key damage is inflicted by larvae feeding on the inner bark of ash trees. They have a one- or two-year life cycle completed entirely in association with ash trees. Adult emergence in late spring is followed by mating, feeding and egg laying. Newly hatched larvae penetrate the tree and feed in the area between the bark and the wood, which is where tree nutrients are transported. Beetle larvae overwinter in the outer portions of wood or bark and pupate in the spring.



**Emerald Ash Borer (EAB) adults**

**EAB larva (arrow) within its feeding gallery**



**Ash trees killed by EAB in Randolph the site of the first New York discovery**

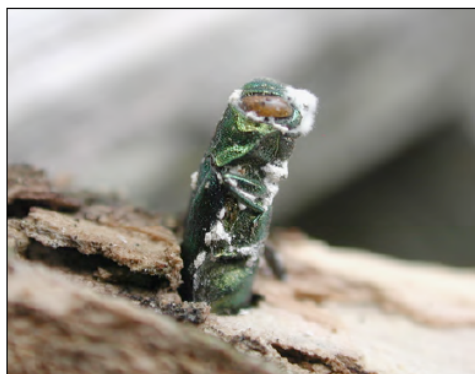
**EAB larval galleries under bark**



## Can Emerald Ash Borer Be Controlled?

Research is being done to help understand the EAB life cycle, detect and contain infestations, and control adults and larvae. Removal and destruction of infested trees is not always cost-effective and success depends on early detection. Chemical insecticide treatments may be effective at protecting selected trees but cannot be used safely over large areas. **Research focused on developing safe, sustainable, environmentally compatible biological management options is needed.** A successful management program will likely require several approaches, including the integration of arthropod biological control agents, microbial pathogens of EAB and other biological control organisms. The delivery and timing of the release of these agents must be studied to optimize effectiveness against emerald ash borer within infested areas.

### ► *By understanding beetle and natural enemy life cycles* ◀



**Emerging EAB  
killed by a  
pathogenic fungus**  
(USDA FS photo)



**Parasitic wasps  
attacking EAB  
egg (above) and  
larva within wood  
(below)**  
(USDA FS photos)

### ► *By developing effective ways to deploy biocontrol agents* ◀



**Fungal spores  
being applied  
to ash trees**

**A cluster of  
girdled ash trees  
attracts EAB and  
will serve as  
release point  
for parasites**  
(SUNY ESF photo)



## Research Partnerships Are Keys to Success

The current emerald ash borer program comprises many municipal, state and federal entities. A key component of the multiagency effort is a research team representing USDA Agricultural Research Service, SUNY-ESF, Cornell University, NYSDEC, USDA Forest Service, and USDA APHIS. Research is jointly conducted on assessing the status of EAB infestations and deploying safe, effective biological control agents for managing this pest. In addition, municipal officials and private landowners are cooperating in the research by providing access to trees on their properties.

**The USDA ARS Biological Integrated Pest Management Research Unit (BioIPM)** is located in the Robert W. Holley Center for Agriculture and Health on the Cornell University Campus. The Unit has, for more than 20 years, played a critical role in world-wide efforts to develop insect pathogenic fungi for biological control of insect pests of agriculture. The BioIPM Unit maintains the world's largest collection of entomopathogenic fungi and conducts biologically-based pest management research on key pests of greenhouses, nurseries and forests, including the emerald ash borer. For more information on this project, contact: Dr. John D. Vandenberg at [www.ars.usda.gov/ithaca/BioIPM](http://www.ars.usda.gov/ithaca/BioIPM)

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## Appendix D: Asian Longhorned Beetle

# ASIAN LONGHORNED BEETLE

*Anoplophora glabripennis*



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Conservation

### What is the Asian longhorned beetle?

The Asian longhorned beetle, or ALB, is an invasive wood-boring insect that feeds on a variety of hardwoods including maple, birch, elm, ash, poplar, horse chestnut and willow, among others. Native to China and Korea, the beetles are approximately 1.5 inches long and shiny black, with white spots on their wing cases. They have black and white antennae that can be up to twice as long as their body.

### What are the signs of an infestation?

Trees being attacked by ALB often have wilted foliage and canopy dieback, but the main signs to look for include:

1. Round, ½ inch exit holes from adults emerging from trees beginning in late July.
2. Round, ½ inch depressions (egg-laying sites) in the outer bark.
3. Sap oozing from egg-laying sites and exit holes.
4. Deep exit holes, insert a pencil to determine if the hole is at least an inch deep.
5. Sawdust, or frass, collecting at the base of the tree or on branches.



An adult ALB  
Joe Boggs, Ohio State, Bugwood.org



1  
Dennis Haugen, USDA Forest Service, Bugwood.org



3  
Dennis Haugen, USDA Forest Service, Bugwood.org



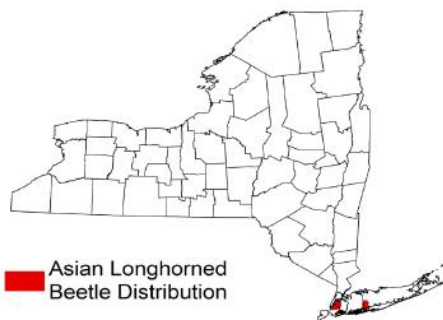
4  
Joe Boggs, Ohio State, Bugwood.org



5  
Robert A. Haack, USDA Forest Service, Bugwood.org

### Where are ALB located?

In 1996, ALB were found infesting Norway maple trees in Brooklyn. Larvae and pupae likely hitchhiked from China in wooden packing material, and the adult beetles emerged after the materials reached the New York Harbor. Additional infestations were later discovered in Manhattan, Queens, Staten Island, Islip and central Long Island. To date, the Manhattan, eastern Queens, Staten Island and Islip infestation sites have been eradicated.

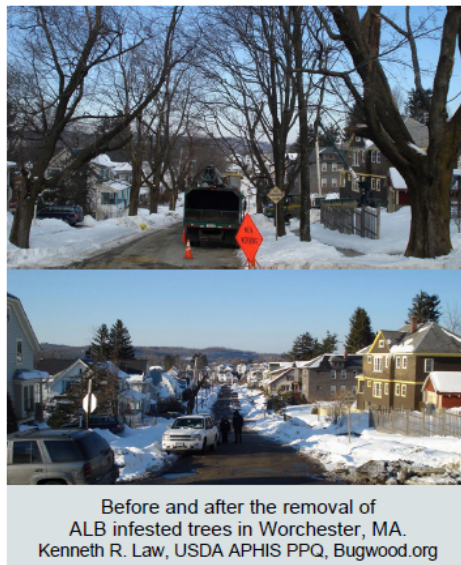


## What do they do to trees?

Females often chew depressions in the bark where they deposit one to two eggs at a time, laying up to sixty eggs on average. After they hatch, the larvae bore into the tree and begin feeding on the living tissue just underneath the bark which disrupts the nutrient and water flow within the tree. The larvae then continue deep into the heartwood where they continue to feed until they are ready to pupate. Repeated attacks from scores of larvae, generation after generation, eventually girdles the tree and kills it. Tree death usually occurs 7-9 years after the initial infestation, depending on site conditions and the tree's overall health.

## What is the risk to NYS?

Since maples are a preferred host for ALB, the spread of the beetle into the rest of the state would mean devastating impacts to the maple syrup industry through the loss of healthy sugar bush. Maples are also a valuable hardwood for furniture, flooring, and other uses. Larval galleries through the heartwood may degrade the wood enough to make it useless for milling, costing the forest products industry billions of dollars. The larval galleries also compromise the structural integrity of the tree, resulting in falling limbs and trunks under heavy rain, snow or wind pressure. Removing these hazard trees in parks and towns would be expensive and have serious impacts on property values and tourism.



Before and after the removal of  
ALB infested trees in Worcester, MA.  
Kenneth R. Law, USDA APHIS PPQ, Bugwood.org

## What is being done?

- International standards require wooden packing materials to be chemically treated or kiln dried to help stop new introductions from occurring.
- Quarantines have been established around infested areas to prevent the movement of infested materials.
- The NYS Department of Agriculture and Markets has taken the lead on surveying for infested trees, tree removal and tree treatment to eradicate the ALB populations in New York City and on Long Island.

## What can I do?

- Adhere to the NYS firewood regulation which limits untreated firewood movement to no more than 50 miles and obey the rules of the ALB quarantines (<https://www.agriculture.ny.gov/PI/alb.html>), which prevent regulated materials from leaving those areas.
- If you have a pool, you can participate in the ALB Swimming Pool Survey. Whenever you clean your pool, check your filter and skimmers for anything that resembles an ALB. Send a photo of what you find to [foresthealth@dec.ny.gov](mailto:foresthealth@dec.ny.gov).

If you believe you have found an ALB...

- Take pictures of the infestation signs as described above (include something for scale such as a coin or ruler).
- Note the location (intersecting roads, landmarks or GPS coordinates).
- Contact DEC (see below) or your local Partnership for Regional Invasive Species Management (PRISM) by visiting [www.dec.ny.gov/animals/47433.html](http://www.dec.ny.gov/animals/47433.html).
- Call the ALB tip line at 1-866-702-9938.
- Report the infestation to iMapInvasives at [www.NYiMapInvasives.org](http://www.NYiMapInvasives.org).

## CONTACT INFORMATION

### Bureau of Invasive Species and Ecosystem Health Division of Lands and Forests

New York State Department of Environmental Conservation  
625 Broadway 5<sup>th</sup> Floor, Albany, NY 12233-4253  
P: (518) 402-9425 | [foresthealth@dec.ny.gov](mailto:foresthealth@dec.ny.gov)  
[www.dec.ny.gov](http://www.dec.ny.gov)

Updated November 15, 2018



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## Appendix E: Spotted Lanternfly Fact Sheet



New York State

**Integrated Pest Management**  
Program



**Cornell Cooperative Extension**

# INVASIVE SPECIES & EXOTIC PESTS

## Spotted Lanternfly *Lycorma delicatula*

Juliet Carroll and Nicole Mattoon, New York State Integrated Pest Management Program, Cornell University

The spotted lanternfly, also known as Chinese blistering cicada, is a planthopper native to China and Southeastern Asia. Discovered in Pennsylvania in 2014, the spotted lanternfly presents a threat to both woody and non-woody hosts that are present throughout the United States. While their list of hosts is large, the greatest agricultural concern falls on grapes, hops, apples, blueberries, and stone fruits. Effort is underway to try to eradicate this insect in Pennsylvania. However, in 2018, it was found in Connecticut, Delaware, Maryland, New Jersey, New York, and Virginia.

### Concern

Due to the fact that this insect has already been found in the United States, there is great concern about its effect on vineyard, orchard, and forest industries. Its presence could lead to crop loss and increased management costs. Spotted lanternfly eggs are laid on any hard, smooth surface, including plants, trunks, stones, and bricks. Because of this, egg masses may be spread unknowingly. Spotted lanternfly nymphs are able to feed on many hosts, while adults prefer Tree of Heaven (*Ailanthus altissima*) and grapevine (*Vitis vinifera*). Furthermore, abundant excretion of sticky honeydew by swarms feeding on shade trees and the associated growth of sooty mold can severely restrict people's enjoyment of parks and their own backyards.

### Description

Spotted lanternfly adults are very colorful when their wings are displayed during hopping. They have red hind wings with black spots, have a black head, and a yellow abdomen with black bands. Their grayish forewings have black spots with a distinctive black brick-like pattern on the tips. There is one generation per year, with adults developing in July, laying eggs in September, and overwintering as eggs. Each egg mass contains 30-50 eggs that are covered in a waxy brown substance. The first nymphs to develop are wingless, black, and have white spots, while the final nymph stage turns red before becoming adults. Adult males are slightly smaller than the inch-long



Spotted lanternfly egg mass. Photo: Holly Raguza, Bugwood.org.



The final nymph stage of the spotted lanternfly, shown on a branch, is distinctively colored. Photo: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org.

females, but are almost identical in appearance. Adults and nymphs commonly gather in large numbers on host plants to feed, and are easiest to see at dusk or at night.

### Damage

This plant hopper is able to feed using specialized mouth parts that can pierce the plant and suck up sap. Both nymphs and adults feed this way, on leaves, stems, and trunks. Piercing the plant's tissues and feeding on the sap weakens the plant, causing it to ooze and weep, which may result in a fermenting odor and a gray/black trail on the bark. Spotted lanternflies also excrete honeydew while feeding, which overtime may encourage the growth of sooty mold if infestation levels are high. The presence of the fermenting odor and honeydew may also attract other insects.

### Found a Spotted Lanternfly in New York?

1. Take pictures of the insect, egg masses, or infestation you see and, if possible, include something for size, such as a coin or ruler.
2. If possible, collect the insect. Place in a bag and freeze, or in a jar with rubbing alcohol or hand sanitizer.
3. Note the location (street address and zip code, intersecting roads, landmarks, or GPS coordinates).
4. Email pictures and location [spottedlanternfly@dec.ny.gov](mailto:spottedlanternfly@dec.ny.gov)

### For More Information

New York State Integrated Pest Management Program: Spotted Lanternfly [nysipm.cornell.edu/environment/invasive-species-exotic-pests/spotted-lanternfly](http://nysipm.cornell.edu/environment/invasive-species-exotic-pests/spotted-lanternfly)

New York State Department of Environmental Conservation: Spotted Lanternfly [dec.ny.gov/animals/113303.html](http://dec.ny.gov/animals/113303.html)

United State Department of Agriculture, Animal and Plant Health Inspection Service Pest Alert: Spotted Lanternfly [aphis.usda.gov/publications/plant\\_health/2014/alert\\_spotted\\_lanternfly.pdf](http://aphis.usda.gov/publications/plant_health/2014/alert_spotted_lanternfly.pdf)

PennState Extension: Spotted Lanternfly [extension.psu.edu/spotted-lanternfly](http://extension.psu.edu/spotted-lanternfly)



Spotted lanternfly adult at rest on a branch. Photo: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org.



Collected spotted lanternfly adult with wings spread. The yellow sides of the abdomen are visible because this is a mated female, full of eggs. Photo: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org.



[nysipm.cornell.edu](http://nysipm.cornell.edu)

Produced by the New York State Integrated Pest Management Program, which is funded through Cornell University, Cornell Cooperative Extension, the NYS Department of Agriculture and Markets, the NYS Department of Environmental Conservation, and USDA-NIFA. Special funding for this project was provided by USDA Farm Bill 10201. Funding administered by the NYS Department of Agriculture & Markets and USDA-APHIS. Design by Karen English, New York State IPM Program. Cornell Cooperative Extension provides equal program and employment opportunities. © 2018 Cornell University and the New York State IPM Program. Updated December 2018; search for this title at the NYSIPM Publications collection: [hdl.handle.net/1813/43943](http://hdl.handle.net/1813/43943)



**Agriculture  
and Markets**

**Department of  
Environmental  
Conservation**



## Appendix F: DEC Recommended Trees and Shrubs

### NATIVE TREES

#### For Gardening and Landscaping



Department of  
Environmental  
Conservation

#### White Spruce (*Picea glauca*)

Classic conical Christmas tree shape. Short stiff needles are bluish green. Most adaptable native spruce for landscape planting. Many cultivars.

Light	Soil	Height/Spread (ft)	Zone
Full sun - partial shade	Moist, well drained	50'/20'	2-6



#### Alternate-leaved Dogwood (*Cornus alternifolia*)

Also known as "Pagoda Dogwood" because of unusual horizontal branch structure. Excellent small tree for partial shade. Clusters of small white flowers, good fall color. Shade tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - full shade	Moist, well drained	20'/10'	3-7



#### Bur Oak (*Quercus macrocarpa*)

Rangy oak with shaggy-capped acorns and big dark glossy leaves, often with distinctive deep lobe in middle. Very adaptable and tough, will grow on both acidic and alkaline soils. Flood tolerant and somewhat drought tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - partial shade	Dry - wet	80'/60'	3-8



#### Red Maple (*Acer rubrum*)

Red flowers followed by red seeds in spring. Red-stemmed leaves with whitish undersides in summer. Red and yellow leaves in fall. Well-known as a swamp tree, but also grows well on upland sites. Most versatile native maple for landscapes. Many cultivars. Flood tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - light shade	Dry - wet	50'/30'	3-9



#### Eastern Red Cedar (*Juniperus virginiana*)

Young trees narrow, columnar. Older trees more conical form. Small, blue, berry-like cones on female trees are eaten by many birds. Tough tree which thrives on dry, harsh, rocky sites. Grows well on limestone, and also on more acidic sites. Very drought tolerant. Must have full sun.

Light	Soil	Height/Spread (ft)	Zone
Full sun	Dry - moist, well drained	40'/15'	3-9





### Serviceberry, Shadbush (*Amelanchier arborea*)

Graceful small tree. Has delicate white flowers in early spring. Flowers followed by oval leaves and edible berries in summer. Vivid fall colors.

Light	Soil	Height/Spread (ft)	Zone
Full sun - partial shade	Moist, well drained	20'/15'	4-9



### Black Gum (*Nyssa sylvatica*)

Great fall color. Fruit attracts many birds and mammals, good nectar source for honey bees. Salt and shade tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - full shade	Dry - wet	50'/30'	4-9



### Swamp White Oak (*Quercus bicolor*)

Dark green leaves with white undersides. Tolerates compacted soils and drought. Also good for wet areas, flood tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - full shade	Dry - wet	80'/50'	4-8



### Tamarack (*Larix laricina*)

Deciduous conifer with soft bluish-green needles, small round cones. A northern species which does well on cool, wet sites. Bright yellow fall color.

Light	Soil	Height/Spread (ft)	Zone
Full sun	Moist - wet	50'/15'	2-4



### River Birch (*Betula nigra*)

Young trees have spectacular, multi-colored, peeling bark in warm shades of tan, brown, pink and cream. Popular birch for landscape use because of heat tolerance and disease resistance. Flood tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - partial shade	Moist - wet	60'/30'	3-9



## CONTACT INFORMATION

### Division of Lands and Forests

New York State Department of Environmental Conservation  
625 Broadway, Albany, NY 12233  
P: 1-866-640-0652 | F: 518-402-9028 | [landsforests@dec.ny.gov](mailto:landsforests@dec.ny.gov)  
[www.dec.ny.gov](http://www.dec.ny.gov)

Updated January 29, 2018

#### PHOTO CREDITS

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# NATIVE SHRUBS

## For Gardening and Landscaping



**Department of  
Environmental  
Conservation**

### Highbush Blueberry (*Vaccinium corymbosum*)

Bell-like white flowers. Clusters of delicious blue berries. Fall color is a range of reds. Striking in winter with colorful young branches and peeling multicolored bark on older stems. Tolerates flooding, needs acidic soil.

Light	Soil	Height/Spread (ft)	Zone
Full sun - light shade	Dry - wet	10'/8'	3-7



### American Elderberry (*Sambucus nigra* ssp. *canadensis*)

Large compound leaves and plate-sized clusters of small white flowers. Small purple berries used in making preserves, pies, and elderberry wine.

Light	Soil	Height/Spread (ft)	Zone
Full sun - light shade	Moist, well drained	8'/8'	4-9



### Virginia Rose (*Rosa virginiana*)

Versatile with glossy leaves and large, pink flowers. Spectacular fall colors. Salt tolerant, somewhat drought tolerant. Does well in sandy soil.

Light	Soil	Height/Spread (ft)	Zone
Full sun	Dry - moist	5'/10'	4-8



### Buttonbush (*Cephalanthus occidentalis*)

Fragrant spheres of white flowers attract butterflies, hummingbirds and native bees. Top wildlife species. Good for rain gardens.

Light	Soil	Height/Spread (ft)	Zone
Full sun	Moist - wet	8'/8'	5-11



### Maple-leaved Viburnum (*Viburnum acerifolium*)

Understory shrub with soft maple-shaped leaves. Clusters of small white flowers. Dark-blue berries. Unusual pale, bluish-pink fall colors.

Light	Soil	Height/Spread (ft)	Zone
Partial - full shade	Dry-moist, well drained	5'/5'	4-8



### American Hazelnut (*Corylus americana*)

Dense, vase-shaped clumps of supple stems with large rough leaves and edible nuts. Important grouse food. Shades of orange, gold and red in fall.

Light	Soil	Height/Spread (ft)	Zone
Full sun - full shade	Dry - wet	10'/10'	4-9





### Nannyberry (*Viburnum lentago*)

Large multi-stemmed shrub. Can be trained into small single-stemmed tree. Glossy foliage, clusters of small white flowers. Resistant to viburnum leaf beetle. Dark-blue berries persist into winter. Good fall color.

Light	Soil	Height/Spread (ft)	Zone
Full sun - light shade	Moist - wet	25'/15'	3-7



### Northern Bush-honeysuckle (*Diervilla lonicera*)

Not a true honeysuckle. Slender stems with large finely toothed, glossy leaves, yellow flowers. New leaves typically reddish bronze. Orange, gold and red fall colors. Spreads easily, good ground cover. Drought-resistant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - partial shade	Dry - moist	3'/3'	3-7



### Bayberry (*Morella caroliniensis* (formerly *Myrica pensylvanica*))

Coastal species well adapted to sandy soil and occasional flooding. Fine urban shrub because of high salt tolerance and resistance to insects and diseases. Glossy, aromatic foliage, semi-evergreen. Tolerates pruning.

Light	Soil	Height/Spread (ft)	Zone
Full sun - partial shade	Dry - wet	10'/10'	3-6



### Flowering Raspberry (*Rubus odoratus*)

Large fuzzy leaves with pointed lobes on thorn-less, arching canes. Single pink flowers are an inch across and resemble wild rose flowers. Small raspberry fruits. Wonderful shrub for edge areas. Shade tolerant.

Light	Soil	Height/Spread (ft)	Zone
Full sun - full shade	Moist	5'/3'	4-6



## CONTACT INFORMATION

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Updated January 29, 2018

#### PHOTO CREDITS

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## Appendix G: B& B Tree Planting Methods

### New Tree Planting

Information on proper practices for planting a tree with a nine-step approach to successful planting and establishment.



Purchasing a tree is an investment, and how well that investment grows depends on the type of tree selected, the location, and the care provided.

#### When to Plant

- Ideally during the dormant season—in the fall after leaf drop or in early spring before bud break.
- Weather conditions are cool and allow plants to establish roots in the new location before spring rains and summer heat stimulate new top growth.
- Healthy balled and burlapped or container trees can be planted throughout the growing season.
- In tropical and subtropical climates where trees grow year round, any time is a good time to plant a tree, provided that sufficient water is available.

#### Planting Stress

Balled-and-burlapped trees lose a significant portion of their root system when dug at the nursery. As a result, trees commonly exhibit what is known as "transplant shock." Transplant shock is a state of slowed growth and reduced vitality following transplanting.

Container trees may also experience transplant shock, particularly if they have circling (girdling) or kinked roots that must be cut. Proper site preparation, careful handling to prevent further root damage, and good follow-up care reduces transplant shock and promotes faster recovery.



#### Steps to Plant a Tree

**Note:** Before you begin planting your tree, be sure you have located all underground utilities prior to digging. **811 is the national call-before-you-dig phone number.** Anyone who plans to dig should call 811 or go to their state 811 center's website.

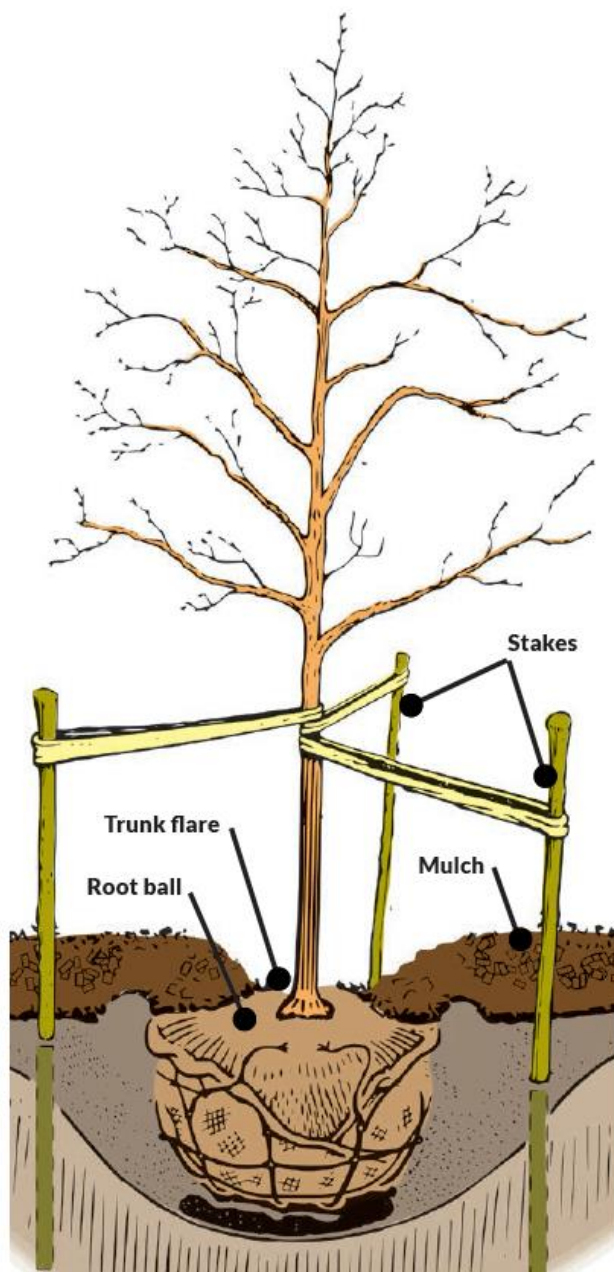
Carefully follow these nine steps to help your tree establish quickly in its new location:

1. The trunk flare is where the trunk expands at the base of the tree. **Ensure trunk flare is partially visible after the tree is planted.** Remove excess soil prior to planting if flare is not visible.
2. Dig a shallow, broad planting hole. **Holes should be 2–3 times wider than the root ball**, but only as deep as the root ball.
3. If wrapped, remove any cover from around the root ball and trunk to facilitate root growth. Remove wire basket or cut one or two rings off so it is low-profile and will not interfere with future root growth. Inspect tree root ball for circling roots and straighten, cut, or remove them. Expose the trunk flare if necessary.
4. Place the tree at the proper height. When placing the tree in the hole, lift by the root ball, not the trunk. The majority of tree's roots develop in the top 12 inches (30 cm) of soil. Planting too deep can be harmful to the tree.
5. Straighten the tree in the hole. Before filling the hole, have someone examine the tree from several angles to confirm it is straight.
6. Fill the hole gently but firmly. Pack soil around the base of the root ball to stabilize it. Fill the hole firmly to eliminate air pockets. Further reduce air pockets by watering periodically while backfilling. Avoid fertilizing at the time of planting.
7. If staking is necessary, three stakes or underground systems provide optimum support. **Studies have shown that trees develop stronger trunks and roots if they are not staked;** however, it may be required when planting bare root stock or on windy sites. Remove stakes after first year of growth.

8. Mulch the base of the tree. Place a 2–3 inch (5–7.5 cm) layer of mulch, but be sure not to pile much right against the trunk. **A mulch-free area of 1–2 inches (2.5–5 cm) wide at the base of the tree will reduce moist bark and prevent decay.**
9. Provide follow-up care. Keep the soil moist by watering at least once a week, barring rain, and more frequently during hot, windy weather. Continue until mid-fall, tapering off as lower temperatures require less-frequent watering.

#### Other follow-up care to consider:

- Minor pruning of branches damaged during the planting process may be required.
- Prune sparingly after planting. Delay corrective pruning until a full season of growth.
- If trunk wrapping is necessary, use biodegradable materials and wrap from the bottom.



### What Is a Certified Arborist?

ISA Certified Arborists® are individuals who have proven a level of knowledge in the art and science of tree care through experience and by passing a comprehensive examination developed by some of the nation's leading experts on tree care. ISA Certified Arborists must also continue their education to maintain their certification. Therefore, they are more likely to be up to date on the latest techniques in arboriculture.

### Finding an Arborist

Visit [TreesAreGood.org](http://TreesAreGood.org) for free tools:

- The "Find an Arborist" tool can help you locate an arborist in your area.
- The "Verify a Credential" tool enables you to confirm whether an arborist has an ISA credential.

### Be an Informed Consumer

One of the best methods to use in choosing an arborist is to educate yourself about some of the basic principles of tree care. Visit [TreesAreGood.org](http://TreesAreGood.org) to read and download all brochures in this series.



[www.isa-arbor.com](http://www.isa-arbor.com) • [www.treesaregood.org](http://www.treesaregood.org)

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Through research, technology, and education, the International Society of Arboriculture promotes the professional practice of arboriculture and fosters a greater worldwide awareness of the benefits of trees.

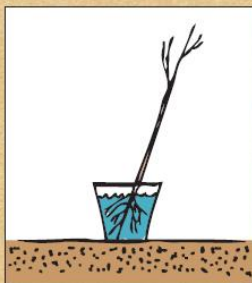


## Appendix H: Bare Root Tree Planting Methods

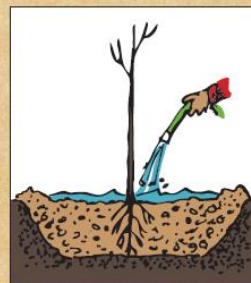
# How to Plant Bare-root Trees

*Members: Please also see "Important Notes for Planting Your 10 Free Trees" on the reverse side.*

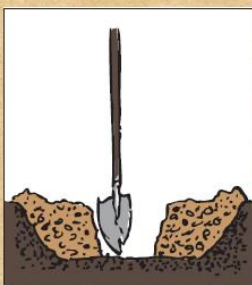
- 1 Unpack your trees, remove all packing materials, carefully untangle the roots and soak the roots in water 3 to 6 hours. Do not allow the roots to dry out.



- 4 Shovel in the remaining soil. It should be firmly but not tightly packed. Construct a water-holding basin around the tree. Give the tree plenty of water.



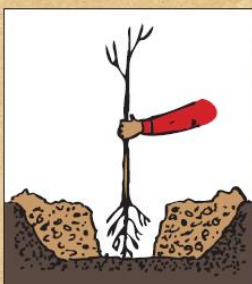
- 2 Dig a hole, wider than seems necessary, so the roots can grow outward without crowding. Remove any grass within a 3-foot circular area. To aid root growth, turn soil in an area up to 3 feet in diameter.



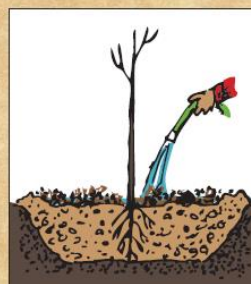
- 5 After the water has soaked in, spread protective mulch two inches deep in a 3-foot diameter area around the base of the tree, but not touching the trunk.



- 3 Plant the tree at the same depth it stood in the nursery, with plenty of room for the roots. Partially fill the hole, firming the soil around the lower roots. Do not add soil amendments such as peat or bark. Do not use fertilizer, potting soil, or chemicals on your new trees.



- 6 The soil and mulch around your trees should be kept moist but not soggy. During dry weather, generously water the tree every 7 to 10 days during the first year. Water slowly at the dripline.



## Appendix I: Year 1 Recommendations

Tag	Common Name	Latin Name	DBH	Cond.	Observations	ISA Risk Rating	Tree Maintenance Detail	Maintenance Priority	Management Group	Residual Risk	Location	Additional Notes
1001	Black oak	Quercus velutina	15	Fair	Large deadwood over picnic table. Dieback	Moderate	Prune deadwood	High	High Priority Pruning	Low	Uniontown	None
1015	Red oak	Quercus rubra	9	Dead	Standing dead tree. Leans toward playground. Codominant at base with tree 1016	Moderate	Remove	High	High Priority Removal	NA	Uniontown	None
1017	White oak	Quercus alba	7	Poor	Top half dead. Large deadwood	Moderate	Remove	High	High Priority Removal	NA	Uniontown	None
1032	Norway maple	Acer platanoides	9	Dead	Standing dead tree at border	Moderate	Remove	High	High Priority Removal	NA	Uniontown	None
1034	Serviceberry	Amelanchier	4	Good	Support rope tied tight around trunk will girdle tree.	Low	Remove rope	High	High Priority Pruning	Low	Uniontown	None
1049	Norway maple	Acer platanoides	15	Poor	Basal decay. Column of significant decay from 3 to 12 feet. Grows over fence. Unlikely to reach house	Moderate	Remove	High	High Priority Removal	NA	Uniontown	None
1055	Norway maple	Acer platanoides	17	Fair	Slight lean over fence toward house. Basal wound with decay	Moderate	Remove	High	High Priority Removal	NA	Uniontown	None
1068	Norway maple	Acer platanoides	8	Dead	30 foot tall dead tree with broken top	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1070	White oak	Quercus alba	38	Dead	Standing dead tree at top of hill in wood lot. May reach fence or improved lawn or restrooms	Moderate	Remove. Can leave 10-15 foot stalk for wildlife	High	High Priority Removal	NA	Uniontown	None
1109	Red oak	Quercus rubra	38	Poor	Codominant at base. One lead is dead and leans over fence. Other lead has large deadwood and dieback	Moderate	Remove tree	High	High Priority Removal	NA	Uniontown	Border tree. Grows against fence
1123	Norway maple	Acer platanoides	12	Fair	Calloused wound with column of decay from 5 to 15 feet. Could reach backstop	Moderate	Remove	High	High Priority Removal	NA	Uniontown	None
1164	Black oak	Quercus velutina	13	Dead	Standing dead 30 foot stalk. Slight lean toward lawn. Cannot reach fence	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1193	Red oak	Quercus rubra	8	Dead	Standing dead tree	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1198	Bitternut hickory	Carya cordiformis	9	Dead	Trunk broken at 5 feet and hanging across trail	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1228	Bitternut hickory	Carya cordiformis	21	Dead	Standing dead tree with broken top at 35 feet. May reach backyard	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1241	Red maple	Acer rubrum	16	Poor	Dead broken top leaning against tree 1240. Prior failure of codominant lead from base with decay at wound	Low	Remove at minimum the dead section of tree. Entire tree removal is best option	High	High Priority Pruning	NA	Uniontown	None

1245	Green ash	Fraxinus pennsylvanica	48	Poor	Emerald ash borer. Codominant at 6 feet	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1247	Red maple	Acer rubrum	12	Fair	Deadwood. Dead tree rests against trunk over trail	Low	Remove dead tree over trail	High	High Priority Pruning	Low	Uniontown	None
1302	Black oak	Quercus velutina	15	Dead	Standing dead tree with another dead tree resting on trunk	Low	Remove tree	High	High Priority Removal	NA	Uniontown	None
1320	Red oak	Quercus rubra	17	Poor	Very little foliage remains. Very large deadwood	Low	Remove tree	High	High Priority Removal	NA	Uniontown	Within proposed dog park
1353	American elm	Ulmus americana	18	Dead	Standing dead tree near private lawn	Low	Remove	High	High Priority Removal	NA	Uniontown	None
1355	Red oak	Quercus rubra	18	Dead	Standing dead tree at trail edge	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1356	Red oak	Quercus rubra	12	Dead	Standing dead tree at trail edge	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1363	Black cherry	Prunus serotina	14	Dead	Standing dead tree with decay fungi. Leans over trail	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1375	Norway maple	Acer platanooides	13	Dead	Standing dead tree	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	NA
1401	Green ash	Fraxinus pennsylvanica	15	Poor	Multiple basal wounds with decay. Leans over private yard. Emerald ash borer	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	Near end of trail and private property
1410	Norway maple	Acer platanooides	12	Fair	Dead broken tree rests near trunk	Low	Remove dead leaning tree	High	High Priority Removal	Low	Pulvers Woods	Removal due to invasive quality an option
1430	Black locust	Robinia pseudoacacia	20	Fair	Leans into tree 1431. May be partially uprooted	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1439	Black birch	Betula lenta	16	Dead	Standing dead tree with sap rot fungi along trunk	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1443	Black cherry	Prunus serotina	20	Dead	Standing dead tree. Codominant at 2 feet	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1478	Black cherry	Prunus serotina	20	Dead	Standing dead tree. Codominant at base	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1480	Black locust	Robinia pseudoacacia	13	Dead	Dead tree that leans on trunk of tree 1479	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1490	Red oak	Quercus rubra	8	Dead	Standing dead tree that bends over trail	Low	Remove	High	High Priority Removal	NA	Pulvers Woods	None
1524	Red maple	Acer rubrum	5	Good	Old support wraps tight around trunk and no longer needed. Large diameter branches	Low	Remove supports. Training prune (low priority)	High	High Priority Pruning	Low	Zinsser	None
1525	Tulip poplar	Liriodendron tulipifera	5	Good	Old support wraps tight around trunk and no longer needed. Slight lean due to shading	Low	Remove supports	High	High Priority Pruning	Low	Zinsser	None

1530	American linden	Tilia americana	37	Fair	Trunk canker with minor decay at 10 feet facing entrance. Codominant at 9 feet. Cavity with significant decay at 12 feet facing parking lot. Large deadwood. Minor dieback.	Moderate	Install supplemental support cable. Reduce canopy. Prune deadwood	High	High Priority Pruning	Low	Zinsser	None
1535	American sycamore	Platanus occidentalis	49	Fair	Potential internal decay via sounding. Self correcting lean over road. Susceptible to anthracnose. Sidewalk lifting. Cavity with decay at 30 feet on road side	Moderate	Level 3 testing for internal decay. Results may impact risk rating and management	High	High Priority Testing	Moderate	Zinsser	None
1544	Boxelder maple	Acer negundo	19	Poor	Wound with decay from base up to 9 feet. Large deadwood. Dieback.	Low	Remove	High	High Priority Removal	NA	Zinsser	None
1586	Black locust	Robinia pseudoacacia	26	Poor	Column of significant decay along trunk. Leans toward road	Moderate	Remove	High	High Priority Removal	NA	Zinsser	None
1593	Black cherry	Prunus serotina	12	Dead	Standing dead tree with sap rot	Low	Remove	High	High Priority Removal	NA	Zinsser	None
1619	Norway maple	Acer platanoides	13	Dead	Standing dead tree near bleachers. Codominant near base	Low	Remove	High	High Priority Removal	NA	Zinsser	None
1663	Red oak	Quercus rubra	31	Good	Codominant at 10 feet with included bark. Grows on top of rock wall with some root exposure	Moderate	Install support cable. Reduce canopy	High	High Priority Pruning	Low	Zinsser	None
1664	Red oak	Quercus rubra	26	Fair	Codominant at 7 feet with included bark. Deadwood	Moderate	Install support cable. Reduce canopy. Prune deadwood	High	High Priority Pruning	Low	Zinsser	None
1668	Red oak	Quercus rubra	39	Fair	Large wound with decay from near base up to 6 feet. Internal decay throughout lower trunk via sounding. Deadwood. Slight lean over gardens	Moderate	Remove	High	High Priority Removal	NA	Zinsser	None
1694	Norway maple	Acer platanoides	20	Fair	Broken and hanging branch over maintained area	Low	Remove hanging branch	High	High Priority Pruning	Low	Zinsser	Removal due to invasive quality an option
1718	Norway maple	Acer platanoides	18	Dead	Standing dead 20 foot stalk. Can reach improved lawn but no structure	Low	Remove	High	High Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property
1719	Norway maple	Acer platanoides	10	Dead	Standing dead tree with slight lean toward patio	Moderate	Remove	High	High Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property
1721	Norway maple	Acer platanoides	18	Dead	Standing dead tree. Slight lean toward house	High	Remove	High	High Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property



1722	Norway maple	Acer platanoides	16	Dead	Standing dead tree. Slight lean parallel to house	Moderate	Remove	High	High Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property
1725	Norway maple	Acer platanoides	18	Poor	Thin canopy. Dieback. Large deadwood. Leans and unbalanced toward house	Moderate	Remove	High	High Priority Removal	NA	Zinsser	Border tree. Home owners believe trees in this area are all on park/Town property
1748	Boxelder maple	Acer negundo	24	Poor	Prior failure of codominant lead from base with significant decay at wound. Base almost completely hollow. Multiple prior limb failures. Leans parallel to trail and toward fence	Low	Remove	High	High Priority Removal	NA	Zinsser	None
1763	Green ash	Fraxinus pennsylvanica	10	Dead	Standing dead tree at wooded edge	Low	Remove	High	High Priority Removal	NA	Zinsser	None
1766	Sugar maple	Acer saccharum	12	Poor	Leans over road. Decay fungi along lower trunk.	Moderate	Remove	High	High Priority Removal	NA	Zinsser	Grows between rock wall and Route 9 near bus stop
1772	Scarlet oak	Quercus coccinea	27	Dead	Standing dead tree.	Moderate	Remove	High	High Priority Removal	NA	Bridge Trail	None
1792	Red oak	Quercus rubra	19	Dead	Standing dead tree with broken top	Low	Remove	High	High Priority Removal	NA	Bridge Trail	Adjacent to trail
1955	Red oak	Quercus rubra	18	Fair	At edge of trail. Slight lean away from trail. Large deadwood over wooded area. Small dead tree rests against trunk over trail	Low	Remove broken tree from over trail	High	High Priority Pruning	Low	Bridge Trail	None
1985	Red maple	Acer rubrum	8	Dead	Trunk broken at 6 feet with top across trail.	Low	Remove top from trail. Stalk can remain	High	High Priority Removal	NA	Bridge Trail	None

## Appendix J: Year 2 Recommendations

Tag	Common Name	Latin Name	DBH	Cond.	Observations	ISA Risk Rating	Tree Maintenance Detail	Maintenance Priority	Management Group	Residual Risk	Location	Additional Notes
1003	Black oak	Quercus velutina	13	Poor	Large deadwood over wooded area. Significant dieback. Slight lean away from playground	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1004	Ailanthus	Ailanthus altissima	18	Fair	Codominant at 2 feet. Smaller lead dead and broken at 9 feet. Dieback in remaining lead. Slight lean and unbalanced toward fence	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1075	American elm	Ulmus americana	14	Fair	Basal cavity with significant decay.	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1098	Red oak	Quercus rubra	42	Fair	Wound with decay from base up to 15 feet. Large deadwood	Moderate	Remove	Medium	Medium Priority Removal	NA	Uniontown	Border tree
1103	Unknown	Unknown	17	Dead	Standing dead stalk leaning against tree 1102	Low	Remove dead stalk	Medium	Medium Priority Removal	NA	Uniontown	None
1127	Norway maple	Acer platanoides	17	Poor	Central lead failed at 20 feet. Remaining canopy unbalanced away from field	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1136	American elm	Ulmus americana	15	Poor	Significant dieback. Deadwood. Possible Dutch elm disease.	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1146	Black locust	Robinia pseudoacacia	23	Fair	Leans away from batting cages toward house. Recently failed limbs. Minor decay at base	Low	Remove tree	Low	Medium Priority Removal	NA	Uniontown	None
1154	Ailanthus	Ailanthus altissima	15	Fair	Minor dieback. Deadwood. Vines along trunk	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1188	Red oak	Quercus rubra	17	Poor	Slight lean away from trail. Large deadwood. Dieback	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1201	Red oak	Quercus rubra	25	Poor	Thin canopy. Dieback. Deadwood. Can impact private property	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1250	Green ash	Fraxinus pennsylvanica	22	Fair	Emerald ash borer in area	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1265	American beech	Fagus grandifolia	17	Fair	Beech leaf disease	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1266	Unknown	Unknown	21	Dead	Standing dead tree without bark near trail	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1301	Black oak	Quercus velutina	15	Poor	Wound with decay at base from prior failure of codominant lead. Very large deadwood	Low	Remove tree	Medium	Medium Priority Removal	NA	Uniontown	None

1306	Black oak	Quercus velutina	18	Poor	Cavity with significant decay at 3 feet. Internal decay via sounding. Large deadwood. Within area considered for dog park	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1333	Red oak	Quercus rubra	23	Fair	Minor basal decay. Self correcting lean toward trail. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1336	Red oak	Quercus rubra	16	Poor	Codominant at base. 16 and 14 inches. Dieback. Large deadwood.	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1366	Norway maple	Acer platanoides	14	Fair	Codominant at 3 feet. One lead is previously broken at 25 feet with minor decay	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	NA
1369	Black locust	Robinia pseudoacacia	18	Poor	Decay fungi on lower trunk. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1395	Norway maple	Acer platanoides	13	Fair	Deadwood. Basal cavity with significant decay	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1400	Black cherry	Prunus serotina	14	Poor	Basal cavity with significant decay from prior removal of codominant lead. Leans over trail toward backyard	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	Near end of trail and private property
1413	Norway maple	Acer platanoides	33	Fair	Cavity near base. Slight lean. Codominant at 12 feet with included bark	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1416	Black oak	Quercus velutina	29	Poor	Basal cavity with significant decay. Large deadwood	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1431	Norway maple	Acer platanoides	18	Fair	Codominant at 2 feet. Slight lean. Wounds with minor decay along trunks	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1446	Black cherry	Prunus serotina	14	Poor	Large deadwood. Dieback. Leans	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1447	Black cherry	Prunus serotina	14	Poor	Large deadwood. Dieback. Leans	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1453	Black locust	Robinia pseudoacacia	15	Poor	Slight leans over trail. Wounds with minor decay in lower trunk.	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1483	Norway maple	Acer platanoides	14	Fair	Leans away from trail. Prior root plate lifting.	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1495	Norway maple	Acer platanoides	13	Fair	Wound with minor decay at 2 feet from prior failure of codominant lead. Small deadwood	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1521	Norway maple	Acer platanoides	14	Fair	Calloused wound with minor decay along trunk	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None

1522	Red oak	Quercus rubra	43	Poor	Wound from base up to 7 feet with decay. Large deadwood in lead; 20 18 and 17 inches.	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1541	Boxelder maple	Acer negundo	20	Fair	Large deadwood. Dieback. Basal wound from prior failure of fourth lead.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1569	Green ash	Fraxinus pennsylvanica	17	Poor	In unmaintained area. Emerald ash borer. Dieback. Could reach aqueduct path	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1570	Black cherry	Prunus serotina	21	Poor	Self correcting lean. Column of decay along top of trunk. Large deadwood. Unlikely to reach trail	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1573	Norway maple	Acer platanoides	36	Dead	Standing dead tree. Codominant at 12 feet. Slight lean away from road	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1576	Black locust	Robinia pseudoacacia	19	Dead	Standing dead 20 foot stalk	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1577	Norway maple	Acer platanoides	20	Fair	Secondary limb toward road has failed with decay. Two trunk cankers with decay. Carpenter ants.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1589	Black cherry	Prunus serotina	13	Fair	Significant lean over trail. Thin canopy. Small deadwood	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1592	Norway maple	Acer platanoides	19	Fair	Leans over trail. Codominant at 12 feet. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1602	Black locust	Robinia pseudoacacia	28	Poor	Leans parallel to trail. Prior failure of codominant lead at 10 feet with decay. Deadwood over unmaintained area	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1637	Boxelder maple	Acer negundo	16	Fair	Park Open Dawn to Dusk sign on trunk. Significant lean. Large deadwood. Dieback	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1639	Boxelder maple	Acer negundo	14	Fair	Leans over maintained area. Small deadwood. Canker with decay at 5 feet.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1657	Ailanthus	Ailanthus altissima	20	Poor	Codominant at 5 feet. Unbalanced canopy toward gardens. Large deadwood. Dieback	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	NA
1661	Norway maple	Acer platanoides	17	Fair	Wound with significant decay at 12 feet. Small deadwood	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	NA

1666	Ailanthus	Ailanthus altissima	24	Fair	Codominant at 5 feet. Third lead previously removed. Cavity with significant decay in one lead at 9 feet. Unbalanced canopy toward gardens	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	NA
1683	Crabapple	Malus	13	Dead	Standing dead tree with vines along trunk. Slight lean away from fence	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1695	Maple	Acer	30	Dead	25 foot tall dead stalk that is covered in vines. Just behind fence	Moderate	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1699	Norway maple	Acer platanoides	20	Fair	Tri lead at base; 7 7 and 6 inches. Suppressed. Slight lean and unbalanced over fence	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1706	Eastern red cedar	Juniperus virginiana	15	Dead	Standing dead tree. Could reach trail	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1708	Norway maple	Acer platanoides	15	Fair	Codominant at 3 feet with included bark.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1709	Sycamore maple	Acer pseudoplatanus	22	Poor	Codominant at base; 13 and 9 inches. Smaller lead has significant dieback and large deadwood. Large wound with decay from prior failure in larger lead	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1716	Ailanthus	Ailanthus altissima	27	Fair	Self correcting lean away for home and toward field. Basal wounds with minor decay. Small deadwood	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1717	Silver maple	Acer saccharinum	34	Fair	Large wound with decay at 20 feet from prior failure of codominant lead. Small deadwood. Canopy has been pruned/reduced	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	May be on private property
1727	Norway maple	Acer platanoides	19	Fair	Large wound with minor decay at 15 feet from codominant lead failure. Unbalanced remaining canopy toward private property	Moderate	Remove tree	Low	Medium Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property
1730	Black locust	Robinia pseudoacacia	25	Poor	Significant decay in lower trunk. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1735	Norway maple	Acer platanoides	33	Fair	Codominant at 4 feet. Significant lean and unbalanced toward field. Significant decay in smaller lead above union. Cavity below union. Internal decay via sounding in larger lead	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None



1740	Red maple	Acer rubrum	25	Poor	Basal cavity with significant decay. Deadwood. Dieback	Low	Remove tree	Low	Medium Priority Removal	NA	Zinsser	None
1741	Red maple	Acer rubrum	27	Poor	Root decay. Sap rot decay. Multiple large limb failures. Remaining canopy unbalanced away from trail	Low	Remove tree	Medium	Medium Priority Removal	NA	Zinsser	None
1773	Mulberry	Morus	13	Fair	Vines along trunk. Column of decay from prior failure/removal of codominant lead. Slight lean and unbalanced toward road	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1788	Red oak	Quercus rubra	14	Fair	Exposed roots from significant erosion.	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1834	Cottonwood	Populus deltoides	17	Poor	Leans over trail. Large secondary limb is dead.	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1835	Mulberry	Morus	13	Poor	Suppressed. Leans. Deadwood. Dieback. Unlikely to reach trail	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1847	Mulberry	Morus	18	Poor	Codominant at 4 feet with decay at union and lower trunk. May reach trail	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1859	Paulownia	Paulownia tomentosa	14	Poor	MTA Tag 2860. Leans over trail. Large deadwood	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1884	Mulberry	Morus	14	Poor	Leans toward trail. Little canopy remains. Poison ivy vines along trunk. Large deadwood over trail	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1908	Black locust	Robinia pseudoacacia	22	Poor	MTA Tag 2871. Significant dieback/browning foliage. Leans over trail. Small deadwood.	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1911	Mulberry	Morus	22	Fair	Calloused wound with minor decay in trunk. Basal wound with decay	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1941	Cottonwood	Populus deltoides	13	Dead	25 foot tall dead stalk	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1954	Norway maple	Acer platanoides	38	Fair	Codominant at 5 feet. Lead closest to trail has large wound with dead and missing bark. Large deadwood over wooded area	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1969	Red oak	Quercus rubra	25	Fair	Small cavity with moderate decay base at 3 feet on trail side. Leans toward tracks from slope	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	Target is train tracks. Make MTA aware of tree

1971	Red oak	Quercus rubra	24	Fair	At edge of trail. Column of decay from base to at least 6 feet. Leans toward tracks from edge of trail.	Moderate	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	Target is train tracks. Make MTA aware of tree
1973	Red oak	Quercus rubra	25	Fair	Slight lean and unbalanced canopy away from trail. Could impact train tracks. Column of internal decay from base up to 12 feet.	Moderate	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	Target is train tracks. Make MTA aware of tree
1975	Black oak	Quercus velutina	20	Fair	Wound with sap rot at 8 feet on trail side. At west side edge of trail.	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1986	Red oak	Quercus rubra	17	Dead	Standing dead tree. Slight lean away from trail.	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None

## Appendix K: Year 3 Recommendations

Tag	Common Name	Latin Name	DBH	Cond.	Observations	ISA Risk Rating	Tree Maintenance Detail	Maintenance Priority	Management Group	Residual Risk	Location	Additional Notes
1005	Allanthurus	Allanthurus altissima	5	Dead	Standing dead tree. Too small to damage fence	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1016	White oak	Quercus alba	8	Fair	Codominant at base with tree 1015. Dieback. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1018	White oak	Quercus alba	11	Poor	Dieback. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1020	Norway maple	Acer platanoides	4	Poor	Sap rot along lower trunk	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1026	Red oak	Quercus rubra	6	Poor	Large calloused wound with sap rot and minor external decay. Self correcting lean parallel to parking.	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1028	Black cherry	Prunus serotina	10	Poor	Top 10 feet is dead	Moderate	Remove	Medium	Medium Priority Removal	NA	Uniontown	At property line
1029	Pignut hickory	Carya glabra	5	Poor	Trunk broken at 15 feet. Broken section leans/hangs in tree 1028	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1030	Norway maple	Acer platanoides	7	Fair	Calloused wound with sap rot on lower trunk. Vines along trunk.	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1037	Swamp white oak	Quercus bicolor	3	Fair	Minor dieback	Low	Apply biostimulant	Medium	Medium Priority Pruning	Low	Uniontown	None
1056	Sassafras	Sassafras albidum	17	Good	Small deadwood. Sounding indicates potential internal basal decay	Low	Level 3 testing for internal decay. Removal may be warranted	Medium	Medium Priority Pruning	Low	Uniontown	None
1079	Norway maple	Acer platanoides	9	Poor	Dieback. Deadwood	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1094	Norway maple	Acer platanoides	8	Fair	Suppressed. Basal wound with decay. Column of decay in lower trunk	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1100	Sassafras	Sassafras albidum	10	Fair	Suppressed. Self correcting lean. Calloused wound along trunk	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1102	Black oak	Quercus velutina	23	Fair	Slight lean toward back yard. Thin canopy. Deadwood over wooded area	Low	Monitor tree health	Medium	Medium Priority Pruning	Low	Uniontown	None
1125	Norway maple	Acer platanoides	12	Fair	Central lead previously failed/pruned at 25 feet. Remaining canopy unbalanced toward field	Moderate	Remove tree	Medium	Medium Priority Removal	NA	Uniontown	None

1140	Norway maple	Acer platanoides	6	Fair	Slight lean and unbalanced toward basketball court. Two stem cankers in lower trunk	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1149	Norway maple	Acer platanoides	9	Fair	Trunk doglegs at 8 feet with decay at wound. Small deadwood	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1150	Ailanthus	Ailanthus altissima	8	Fair	Trunk bends and unbalanced canopy toward batting cages	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1153	Silver maple	Acer saccharinum	36	Fair	Prior codominant lead removed at 5 feet. Small deadwood.	Low	Monitor	Medium	Medium Priority Pruning	Low	Uniontown	None
1172	Black cherry	Prunus serotina	8	Fair	Leans over fence. Canopy is in the field of play. Fall webworm	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1206	American beech	Fagus grandifolia	11	Fair	Beech leaf disease	Low	Remove tree	Low	Medium Priority Removal	NA	Uniontown	None
1246	Green ash	Fraxinus pennsylvanica	12	Fair	Emerald ash borer. Leans away from trail	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1277	Green ash	Fraxinus pennsylvanica	7	Fair	Emerald ash borer in area	Low	Remove	Low	Medium Priority Removal	NA	Uniontown	None
1337	Red oak	Quercus rubra	16	Fair	9 inch lead from base is dead and near trail. Small deadwood	Low	Remove dead lead	Medium	Medium Priority Pruning	Low	Uniontown	None
1347	Sassafras	Sassafras albidum	11	Dead	Standing dead tree	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1348	Sassafras	Sassafras albidum	11	Poor	Little foliage remains.	Low	Remove	Medium	Medium Priority Removal	NA	Uniontown	None
1352	Black cherry	Prunus serotina	10	Poor	One dead lead near trail	Low	Remove dead lead	Medium	Medium Priority Pruning	Low	Uniontown	None
1360	Black locust	Robinia pseudoacacia	10	Fair	Leans over trail. Calloused wound from base up to 20 feet with minor decay	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1371	Norway maple	Acer platanoides	16	Fair	Deadwood over trail. Dead tree leans and rests on trunk	Low	Remove dead tree from trunk. Prune deadwood (low priority)	Medium	Medium Priority Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1376	Norway maple	Acer platanoides	6	Poor	Significant bend over trail. Dieback	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	NA
1383	Red oak	Quercus rubra	16	Fair	Unbalanced canopy. Tree leans into and rests on trunk	Low	Remove leaning tree	Medium	Medium Priority Pruning	Low	Pulvers Woods	At private property border
1396	Black cherry	Prunus serotina	9	Poor	Significant lean over trail toward backyards. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None



1399	Black cherry	Prunus serotina	11	Poor	Significant lean parallel to trail. Thin canopy. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1409	Red maple	Acer rubrum	38	Fair	Codominant at 3 feet with included bark and vertical seam.	Low	Install supplemental support cable. Reduce canopy	Medium	Medium Priority Pruning	Low	Pulvers Woods	Low priority removal an option
1423	Red oak	Quercus rubra	29	Fair	Deadwood over fence. Grows on rocky slope.	Low	Prune deadwood	Medium	Medium Priority Pruning	Low	Pulvers Woods	None
1432	Norway maple	Acer platanoides	7	Fair	Half of root plate is exposed due to soil erosion	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	NA
1457	Black locust	Robinia pseudoacacia	11	Fair	Leans over trail. Deadwood. Calloused wound on trunk	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1473	Norway maple	Acer platanoides	9	Dead	15 foot tall dead stalk and edge of trail	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1479	Norway maple	Acer platanoides	10	Fair	Significant lean over trail. Tree 1480 rests on trunk	Low	Remove	Low	Medium Priority Removal	NA	Pulvers Woods	None
1484	Norway maple	Acer platanoides	12	Poor	Cavity with significant decay from 3 to 7 feet	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1487	Norway maple	Acer platanoides	9	Dead	Standing dead tree. Cavity with significant decay from 2 to 7 feet	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1494	Black locust	Robinia pseudoacacia	26	Fair	Codominant at 5 feet with included bark. One lead broken and hanging in nearby tree.	Low	Remove broken lead	Medium	Medium Priority Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1504	Black locust	Robinia pseudoacacia	11	Fair	Leans over trail. Multiple cavities with decay in trunk	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1507	Black locust	Robinia pseudoacacia	10	Poor	Leans over trail. Deadwood. Wound with decay along trunk	Low	Remove	Medium	Medium Priority Removal	NA	Pulvers Woods	None
1543	Boxelder maple	Acer negundo	5	Fair	Under wires. Leans away from road. Suppressed	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1545	Norway maple	Acer platanoides	5	Fair	Suppressed. Tar spot disease. Grows between sidewalk and rock wall	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1546	Black walnut	Juglans nigra	17	Fair	Suppressed. Dead branch over sidewalk	Low	Prune deadwood	Medium	Medium Priority Pruning	Low	Zinsser	None
1547	Norway maple	Acer platanoides	6	Fair	Suppressed. Tar spot disease. Grows on rock wall	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1548	Sweetgum	Liquidambar styraciflua	36	Fair	Large deadwood near sidewalk. Recent branch failure	Low	Prune deadwood. Reduce canopy	Medium	Medium Priority Pruning	Low	Zinsser	None

1549	Silver maple	Acer saccharinum	7	Fair	Suppressed. Prior broken top.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1551	Norway maple	Acer platanoides	7	Fair	Suppressed. Grows between sidewalk and rock wall	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1552	Boxelder maple	Acer negundo	9	Fair	Suppressed. Deadwood. Grows through wires	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1553	Norway maple	Acer platanoides	6	Fair	Group of four suppressed Norway maples. Grow between sidewalk and rock wall	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1554	Mulberry	Morus	24	Fair	Grows between sidewalk and rock wall. Leans and unbalanced over sidewalk and road. Large dead lead from base has been pruned before sidewalk. Deadwood over sidewalk	Low	Prune deadwood. Reduce canopy	Medium	Medium Priority Pruning	Low	Zinsser	Removal an option
1556	Boxelder maple	Acer negundo	12	Fair	Suppressed. Grows between sidewalk and rock wall. Leans over sidewalk. Deadwood. Thin canopy	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1557	Norway maple	Acer platanoides	9	Fair	Grow between sidewalk and rock wall at base of 1556. Suppressed and leans away from road. Tar spot disease	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1558	Norway maple	Acer platanoides	7	Fair	Grow at base of rock wall at edge of unmaintained area. Suppressed and leans away from road. Tar spot disease	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1559	Boxelder maple	Acer negundo	9	Fair	Suppressed. Grows between sidewalk and rock wall. Vines along trunk. Canopy in sidewalk	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1560	Boxelder maple	Acer negundo	7	Fair	Suppressed. Grows between sidewalk and rock wall. Vines along trunk. Canopy in sidewalk	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1561	Boxelder maple	Acer negundo	8	Fair	Suppressed. Grows between sidewalk and rock wall. Vines along trunk. Canopy in sidewalk. Leans over sidewalk	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1580	Norway maple	Acer platanoides	11	Fair	At wooded edge along sidewalk. Leans over sidewalk. Prior broken branch. Wound with decay in trunk	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	Removal due to invasive quality an option
1581	Norway maple	Acer platanoides	12	Poor	At wooded edge along sidewalk. Codominant near base. One lead is dead	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	Removal due to invasive quality an option

1583	Norway maple	Acer platanoides	5	Dead	At wooded edge along sidewalk. Standing dead tree with yellow ribbon	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1606	Norway maple	Acer platanoides	6	Fair	Two small trees. Suppressed. On slope	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1608	Norway maple	Acer platanoides	7	Fair	Suppressed. On slope. Slight lean toward field	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1610	Norway maple	Acer platanoides	6	Fair	Suppressed. At top of slope	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1611	Mulberry	Morus	10	Fair	Grows on slope. Leans over trail. Small deadwood	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1612	Sweet cherry	Prunus avium	11	Fair	Grows on slope. Vines along trunk.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1614	Norway maple	Acer platanoides	8	Fair	Slight lean away from field. Grows on slope	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1615	Norway maple	Acer platanoides	8	Fair	Slight lean away from field. Grows on slope	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1620	Norway maple	Acer platanoides	5	Fair	Suppressed. Leans toward field. Grows on slope.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1622	Norway maple	Acer platanoides	7	Fair	Suppressed. Leans toward field. Grows on slope. Vertical seam along trunk	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1625	Norway maple	Acer platanoides	4	Fair	Suppressed. On slope	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1626	Norway maple	Acer platanoides	5	Fair	Suppressed. At base of slope	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1633	Boxelder maple	Acer negundo	10	Fair	Suppressed. Unbalanced toward field. Deadwood	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1635	Mulberry	Morus	10	Poor	Significant lean over trail. Codominant at 5 feet. Crack along one lead. Deadwood. Has been pruned	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1646	Mulberry	Morus	12	Fair	Significant lean toward dugout. Poison ivy along trunk.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	Removal due to invasive quality an option
1662	Red oak	Quercus rubra	30	Fair	Large deadwood. Poison ivy on trunk.	Low	Prune deadwood. Remove poison ivy	Medium	Medium Priority Pruning	Low	Zinsser	None
1667	Norway maple	Acer platanoides	9	Poor	Central lead failed.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	NA

1671	White oak	Quercus alba	6	Fair	Anthraxnose infection causing browning leaves and premature drop. Low canopy could be issue for kids in playground	Low	Fertilize. Elevate canopy (low priority)	Medium	Medium Priority Pruning	Low	Zinsser	None
1678	Boxelder maple	Acer negundo	5	Fair	Naturalized tree along stream edge. Suppressed. Leans. Roots exposed due to erosion	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1679	Boxelder maple	Acer negundo	5	Fair	Naturalized tree along stream edge. Suppressed. Leans. Roots exposed due to erosion	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1686	Norway maple	Acer platanoides	12	Fair	Vertical calloused wounds along trunk. Cavity at 7 feet. Deadwood. Suppressed. Unbalanced toward batting cage	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	Removal due to invasive quality an option
1702	Norway maple	Acer platanoides	12	Fair	Codominant at base: 7 and 5 inches. Suppressed. Slight lean and unbalanced over fence	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1703	Norway maple	Acer platanoides	10	Fair	Suppressed. Broken branch hanging in canopy of nearby tree near trail.	Low	Remove hanging branch	Medium	Medium Priority Pruning	Low	Zinsser	Removal due to invasive quality an option
1707	Norway maple	Acer platanoides	7	Fair	Codominant at base with tree 1706. Suppressed. Tar spot disease. Leans over fence	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1710	Sycamore maple	Acer pseudoplatanus	5	Fair	Grows in middle of maintained lawn strip. Leans and unbalanced over fence.	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	None
1720	Norway maple	Acer platanoides	10	Dead	Standing dead tree with broken top. Codominant at 2 feet. Will not reach structure	Low	Remove	Low	Medium Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property
1723	Norway maple	Acer platanoides	11	Poor	Few alive sprouts on lower trunk. Large deadwood. May reach improved lawn but not house	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	Home owners believe trees in this area are all on park/Town property
1746	Black locust	Robinia pseudoacacia	8	Dead	Dead tree that leans over trail	Low	Remove	Medium	Medium Priority Removal	NA	Zinsser	None
1764	Red oak	Quercus rubra	40	Fair	Codominant at 5 feet with included bark. Small deadwood. Could reach road	Moderate	Install supplemental support system. Reduce canopy	Medium	Medium Priority Pruning	Low	Zinsser	None
1769	Scarlet oak	Quercus coccinea	31	Fair	Large deadwood. Poison ivy vines along trunk. Codominant at 18 feet	Low	Prune deadwood	Medium	Medium Priority Pruning	Low	Bridge Trail	None
1776	Black oak	Quercus velutina	21	Fair	Base may be girdling by chain holding garbage can. Unbalanced toward trail. Large deadwood	Low	Prune deadwood	Medium	Medium Priority Pruning	Low	Bridge Trail	None
1777	Mulberry	Morus	11	Poor	Significant lean over trail entrance. Deadwood. Multiple wounds along trunk.	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None



1779	Red oak	Quercus rubra	9	Dead	Standing dead tree covered in vines	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	May not reach trail when it fails
1781	Red oak	Quercus rubra	11	Dead	Standing dead tree.	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	May not reach trail when it fails
1785	Red oak	Quercus rubra	9	Dead	Standing dead tree. Vines along trunk. Can reach trail	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1797	Red oak	Quercus rubra	18	Fair	Canopy bends over trail. Large dead secondary limb from near base.	Low	Prune deadwood	Medium	Medium Priority Pruning	Low	Bridge Trail	None
1806	Norway maple	Acer platanoides	10	Poor	Sap rot. Areas of dead and missing bark. Leans parallel to trail	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1820	Cottonwood	Populus deltoides	12	Poor	Significant lean over trail. Dieback. Deadwood. Poison ivy along trunk	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1822	Cottonwood	Populus deltoides	9	Dead	Dead stalk covered in vines. Slight lean toward trail	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1832	Mulberry	Morus	12	Poor	Suppressed. Deadwood. Codominant at 5 feet. Leans away from trail	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1839	Black locust	Robinia pseudoacacia	22	Fair	Leans over stream. Deadwood near bench	Low	Prune deadwood	Medium	Medium Priority Pruning	Low	Bridge Trail	Next to bench
1850	Paulownia	Paulownia tomentosa	10	Poor	Leans over trail. Large deadwood over trail. Wound with decay at rear base.	Low	Remove	Medium	Medium Priority Removal	NA	Bridge Trail	None
1855	Swamp white oak	Quercus bicolor	6	Fair	Vines in canopy. Unmaintained area encroaches on canopy	Low	Cut/remove vines. Clear volunteer plants near base	Medium	Medium Priority Pruning	Low	Bridge Trail	None
1890	Mulberry	Morus	10	Poor	Leans parallel to trail. Poison ivy vines along trunk. Suppressed. Basal wound with decay	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1891	Mulberry	Morus	12	Poor	Codominant at 2 feet. Self correcting lean toward trail. Suppressed. One lead dead	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1934	Black locust	Robinia pseudoacacia	15	Fair	Significant lean over trail. Large dead branch over trail.	Low	Prune dead branch over trail	Medium	Medium Priority Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1953	Norway maple	Acer platanoides	10	Poor	Large wound with dead and missing bark from base up 9 feet. Slight lean. May not impact trail	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None
1990	Red oak	Quercus rubra	7	Fair	Codominant at 6 feet. Vines in canopy. Grows in trail	Low	Remove	Low	Medium Priority Removal	NA	Bridge Trail	None



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9009	Black locust	Robinia pseudoacacia	27	Fair	Codominant at 3 feet. Large dead branch over trail.	Low	Prune dead branch over trail	Medium	Medium Priority Pruning	Low	Bridge Trail	Removal due to invasive quality an option
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## Appendix L: Year 4 Recommendations

Tag	Common Name	Latin Name	DBH	Cond.	Observations	ISA Risk Rating	Tree Maintenance Detail	Maintenance Priority	Management Group	Residual Risk	Location	Additional Notes
1048	Sugar maple	Acer saccharum	21	Fair	Deadwood over wooded area	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Path from red house to park goes under tree
1057	Sassafras	Sassafras albidum	22	Fair	Deadwood. Path from red house goes under tree	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1067	American elm	Ulmus americana	32	Fair	Codominat at base. Tree 1176 grows at base too.	Low	Reduce canopy	Low	Routine Pruning	Low	Uniontown	None
1097	Pignut hickory	Carya glabra	37	Good	Slight lean and unbalanced canopy away from field due to shading from large tree that recently failed. Deadwood over wooded area. Sounding with a mallet did not indicate internal decay. Tallest tree in wooded area	Low	Reduce canopy	Low	Routine Pruning	Low	Uniontown	None
1112	Red oak	Quercus rubra	31	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Border tree at top of slope near fence corner
1161	Red oak	Quercus rubra	25	Fair	Large deadwood near maintained lawn edge. Vines along trunk.	Low	Prune deadwood. Cut/remove vines	Low	Routine Pruning	Low	Uniontown	None
1171	Black oak	Quercus velutina	20	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1182	Black locust	Robinia pseudoacacia	22	Fair	Codominant at 15 feet. Cut vines. Deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option
1187	Red oak	Quercus rubra	23	Fair	Slight lean over trail. Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1208	Red oak	Quercus rubra	27	Fair	Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1214	Tulip poplar	Liriodendron tulipifera	39	Fair	Codominant at 3 feet. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1229	Black oak	Quercus velutina	22	Fair	Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1230	Tulip poplar	Liriodendron tulipifera	34	Fair	Codominant at 5 feet with included bark. Deadwood over trail.	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Uniontown	None
1236	Tulip poplar	Liriodendron tulipifera	43	Fair	Codominant at 3 feet with included bark. Deadwood over trail.	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Uniontown	None
1255	Black cherry	Prunus serotina	20	Fair	Poison ivy vines along trunk. Deadwood near trail	Low	Prune deadwood. Cut vines	Low	Routine Pruning	Low	Uniontown	None
1259	Bitternut hickory	Carya cordiformis	44	Fair	Codominant at 6 feet with included bark. Deadwood	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Uniontown	None
1289	Red oak	Quercus rubra	26	Fair	Tree house base and ladder installed on tree. Deadwood	Low	Prune deadwood. Remove tree house base before it is embedded in bark/trunk	Low	Routine Pruning	Low	Uniontown	None



1291	Red oak	Quercus rubra	21	Fair	Large deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1300	Red oak	Quercus rubra	26	Fair	Unbalanced canopy away from trail. Deadwood over wooded area	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1305	Black oak	Quercus velutina	25	Fair	Codominant at 6 feet. Large deadwood. At edge of area considered for dog park	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1309	Red oak	Quercus rubra	46	Fair	Decay at prior limb failure wounds. Deadwood. At edge of area considered for dog park	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1310	Red oak	Quercus rubra	25	Fair	Deadwood. On slope near area considered for dog park	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1317	Black oak	Quercus velutina	28	Fair	Deadwood. Slight lean and unbalanced canopy	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Near edge of proposed dog park
1318	Black oak	Quercus velutina	24	Fair	Deadwood. Trunk doglegs	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Within proposed dog park
1326	Black oak	Quercus velutina	25	Fair	Large deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Near proposed dog park
1354	Red oak	Quercus rubra	28	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1357	Red oak	Quercus rubra	26	Fair	Codominant at 5 feet with included bark. Deadwood	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Pulvers Woods	None
1358	Red oak	Quercus rubra	19	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1392	Black locust	Robinia pseudoacacia	19	Fair	Deadwood.	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1415	Red oak	Quercus rubra	21	Fair	Deadwood. Codominant at 20 feet	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1418	Red oak	Quercus rubra	20	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1419	Red oak	Quercus rubra	28	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1425	Red oak	Quercus rubra	26	Fair	Deadwood. Grows on slope.	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1426	Red oak	Quercus rubra	23	Fair	Large deadwood near lower trail. Unbalanced away from upper trail. Grows on slope.	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1427	Red oak	Quercus rubra	29	Fair	Codominant at 7 feet. Deadwood. Grows on slope.	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1512	Red oak	Quercus rubra	25	Fair	Codominant at 15 feet with included bark. Deadwood	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Pulvers Woods	No
1527	Red oak	Quercus rubra	32	Good	Poison ivy along trunk. Unbalanced canopy over parking. Small deadwood	Low	Reduce canopy over parking. Prune deadwood. Cut/remove poison ivy	Low	Routine Pruning	Low	Zinsser	None

1532	Boxelder maple	Acer negundo	19	Fair	Leans over parking. Deadwood. Dieback. Canopy low over pavement. Fall webworm	Low	Prune deadwood. Elevate canopy	Low	Routine Pruning	Low	Zinsser	None
1542	Black walnut	Juglans nigra	28	Fair	Slight lean over road. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	None
1550	Norway maple	Acer platanoides	28	Fair	Codominant at base. Marginal leaf scorching. Deadwood.	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	Removal due to invasive quality is an option
1555	Norway maple	Acer platanoides	20	Fair	At base of rock wall. Slight lean and unbalanced away from road. Large deadwood.	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	Removal due to invasive quality is an option
1604	Horse chestnut	Aesculus hippocastanum	39	Fair	Grows between trail and fence. Leaf blotch disease. Tri lead at 6 feet. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	None
1607	Red oak	Quercus rubra	25	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	None
1624	American linden	Tilia americana	48	Good	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	None
1655	Ailanthus	Ailanthus altissima	28	Fair	Codominant at 3 feet. Vines along trunks. Deadwood	Low	Prune deadwood. Removal an option	Low	Routine Pruning	Low	Zinsser	NA
1682	Silver maple	Acer saccharinum	39	Good	Codominant at 3 feet. Inside garden fence.	Low	Reduce canopy	Low	Routine Pruning	Low	Zinsser	None
1750	Sycamore	Platanus occidentalis	49	Fair	Large deadwood over trail. Susceptible to anthracnose. Calloused wounds on trunk with minor decay.	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	None
1765	Norway maple	Acer platanoides	21	Fair	Self correcting lean toward road. Deadwood.	Low	Prune deadwood	Low	Routine Pruning	Low	Zinsser	Removal due to invasive quality is an option
1767	Red oak	Quercus rubra	27	Fair	Leans and unbalanced canopy over road. Small deadwood	Low	Reduce canopy. Prune deadwood	Low	Routine Pruning	Low	Zinsser	None
1768	Red oak	Quercus rubra	29	Fair	Slight lean and unbalanced canopy away from road. Large deadwood over border of maintained area	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1770	Scarlet oak	Quercus coccinea	22	Fair	Deadwood. Codominant at 20 feet	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1793	Red oak	Quercus rubra	32	Fair	Roots starting to be exposed by erosion. Codominant at 7 feet. Large deadwood	Low	Prune deadwood.	Low	Routine Pruning	Low	Bridge Trail	None
1794	Red oak	Quercus rubra	31	Fair	Codominant at 5 feet with included bark and vertical seam from union. Unbalanced canopy toward trail.	Low	Install supplemental support cable. Reduce canopy. Removal an option	Low	Routine Pruning	Low	Bridge Trail	None
1799	Red oak	Quercus rubra	30	Fair	Codominant at 15 feet. Unbalanced canopy toward trail. Deadwood over unmaintained area	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1842	Red oak	Quercus rubra	29	Fair	Deadwood. Codominant at 20 feet	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None

1857	Red oak	Quercus rubra	21	Fair	Leans toward trail. Large deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1865	Red oak	Quercus rubra	32	Fair	Deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1874	Paulownia	Paulownia tomentosa	22	Fair	Deadwood over trail. Codominant at 15 feet. Vines along trunk.	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1897	Mulberry	Morus	26	Fair	Unbalanced away from trail. Deadwood over trail.	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1901	Paulownia	Paulownia tomentosa	22	Fair	MTA Tag 2867. Slight lean and unbalanced canopy away from trail. Deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1909	Honeylocust	Gleditsia triacanthos	25	Fair	Vines in canopy. Deadwood. Thorns on tree	Low	Prune deadwood. Cut/remove vines	Low	Routine Pruning	Low	Bridge Trail	None
1914	Osage orange	Maclura pomifera	23	Fair	Basal cavity with significant decay. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal an option
1915	Osage orange	Maclura pomifera	40	Fair	Codominant near base; 20 and 20 inches. Wounds with minor decay in trunks. Deadwood	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Bridge Trail	None
1918	Sycamore	Platanus occidentalis	21	Fair	Vines in canopy. Edge of trail at bridge. Small deadwood.	Low	Cut/remove vines	Low	Routine Pruning	Low	Bridge Trail	None
1940	Black locust	Robinia pseudoacacia	21	Fair	Vines along trunk. Small deadwood	Low	Cut/remove vines	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1943	Ailanthus	Ailanthus altissima	19	Fair	Deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal an option
1949	Ailanthus	Ailanthus altissima	26	Fair	Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1968	Red oak	Quercus rubra	33	Fair	Deadwood over trail. Minor dieback. At edge of trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1987	Red oak	Quercus rubra	25	Fair	Codominant at 5 feet. Poison ivy and other vines along trunk and in canopy.	Low	Remove/cut vines	Low	Routine Pruning	Low	Bridge Trail	None
1988	Black locust	Robinia pseudoacacia	26	Fair	Vines in canopy. Slight lean away from trail. Deadwood near trail	Low	Prune deadwood. Cut vines	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option



## Appendix M: Year 5 Recommendations

Tag	Common Name	Latin Name	DBH	Cond.	Observations	ISA Risk Rating	Tree Maintenance Detail	Maintenance Priority	Management Group	Residual Risk	Location	Additional Notes
1010	Red oak	Quercus rubra	8	Good	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1021	Red oak	Quercus rubra	15	Fair	Deadwood over wooded area	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1035	Redbud	Cercis canadensis	5	Fair	Support rope tied tight around branches. Multi lead. Canopy near parking	Low	Clearance prune from parking. Remove rope	Low	Routine Pruning	Low	Uniontown	None
1036	Norway maple	Acer platanoides	7	Fair	Central lead has been removed at 4 feet. Now tri lead.	Low	Structural prune. Reduce non central leads to re-establish a central lead	Low	Training Pruning	Low	Uniontown	Removal due to invasive quality an option
1038	Black gum	Nyssa sylvatica	3	Good	Canopy near parking and entrance. Old support wraps loose and not needed	Low	Clearance prune from parking and entrance. Remove support wraps	Low	Training Pruning	Low	Uniontown	None
1039	Swamp white oak	Quercus bicolor	3	Good	Support wraps loose and no longer needed	Low	Training prune. Remove support wraps.	Low	Training Pruning	Low	Uniontown	None
1042	Black walnut	Juglans nigra	13	Good	Slight lean and unbalanced toward adjacent property. Canopy near house	Low	Reduce canopy to help restore balance	Low	Routine Pruning	Low	Uniontown	None
1052	Norway maple	Acer platanoides	14	Fair	Unbalanced canopy and slight lean over fence toward house	Low	Reduce canopy	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option
1059	Sassafras	Sassafras albidum	18	Fair	Deadwood. Path from red house goes near tree	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1063	Norway maple	Acer platanoides	7	Fair	Suppressed. Slight lean and unbalanced toward restroom	Low	Clear tree canopies from roof of restroom building	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option
1064	Norway maple	Acer platanoides	8	Fair	Suppressed. Slight lean and unbalanced toward restroom	Low	Clear tree canopies from roof of restroom building	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option
1065	Norway maple	Acer platanoides	5	Fair	Suppressed. Slight lean and unbalanced toward restroom	Low	Clear tree canopy from roof of restroom building	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option
1077	Black oak	Quercus velutina	17	Fair	Thin canopy. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1108	Mulberry	Morus	14	Fair	Suppressed. Unbalanced canopy over fence. Deadwood over fence	Low	Prune deadwood. Reduce canopy	Low	Routine Pruning	Low	Uniontown	Grows against fence
1116	Norway maple	Acer platanoides	14	Fair	Unbalanced canopy toward field	Low	Reduce canopy from field	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option
1138	Norway maple	Acer platanoides	6	Fair	Slight lean and unbalanced toward over green storage container. Canopy on container	Low	Elevate over container. Reduce canopy	Low	Routine Pruning	Low	Uniontown	Removal due to invasive quality an option

1145	Norway maple	Acer platanoides	15	Fair	Slight lean and unbalanced canopy over batting cages. Small deadwood	Low	Reduce canopy over batting cages	Low	Routine Pruning	Low	Uniontown	Removal an option due to invasive quality
1148	Norway maple	Acer platanoides	12	Fair	Unbalanced canopy over batting cages. Small deadwood	Low	Reduce canopy over batting cages	Low	Routine Pruning	Low	Uniontown	Removal an option due to invasive quality
1155	Mockernut hickory	Carya tomentosa	12	Good	Vines along trunk	Low	Cut/remove vines	Low	Routine Pruning	Low	Uniontown	None
1180	Black cherry	Prunus serotina	15	Fair	Leans toward lawn. Large deadwood over wooded border.	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Border tree
1280	Red oak	Quercus rubra	15	Fair	Deadwood. Vines in canopy	Low	Prune deadwood. Cut vines	Low	Routine Pruning	Low	Uniontown	None
1316	Black oak	Quercus velutina	17	Fair	Unbalanced toward private back yard. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	At edge of proposed dog park
1323	Red oak	Quercus rubra	16	Fair	Leans uphill away from trail. Large deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Uphill edge of proposed dog park
1327	Black oak	Quercus velutina	14	Fair	Leans over lower trail. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	Near proposed dog Park entrance
1328	Red oak	Quercus rubra	16	Fair	Leans away from trail. Small deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1338	Red oak	Quercus rubra	9	Fair	Twin lead at base; 9 and 9 inches. Deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1339	Red oak	Quercus rubra	11	Fair	Self correcting lean. Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1340	Red oak	Quercus rubra	10	Fair	Twin lead; 10 and 10 inches. Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Uniontown	None
1393	Norway maple	Acer platanoides	14	Fair	Slight lean over trail. Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1474	American elm	Ulmus americana	16	Fair	Deadwood. Hangers	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	None
1498	Black locust	Robinia pseudoacacia	16	Fair	Large deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1500	Black locust	Robinia pseudoacacia	13	Fair	Large deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1501	Black locust	Robinia pseudoacacia	11	Fair	Large deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1506	Norway maple	Acer platanoides	17	Fair	Deadwood	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	Removal due to invasive quality an option
1509	Red oak	Quercus rubra	13	Fair	Deadwood near trail	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	No
1511	Red oak	Quercus rubra	10	Fair	Slight lean over trail. Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Pulvers Woods	No
1523	Kentucky coffeetree	Gymnocladus dioica	5	Excellent	Old support wraps loose around trunk are no longer needed. Codominant at 8 feet	Low	Training prune. Remove supports	Low	Training Pruning	Low	Zinsser	None

1526	Honeylocust	Gleditsia triacanthos	3	Good	Old support wraps loose around trunk are no longer needed. Minor plant bug damage. Shaded by wooded area	Low	Remove supports	Low	Routine Pruning	Low	Zinsser	None
1528	Littleleaf linden	Tilia cordata	4	Good	Old support wraps loose around trunk are no longer needed. Large diameter branches	Low	Remove supports. Training prune	Low	Training Pruning	Low	Zinsser	None
1529	Red maple	Acer rubrum	4	Good	Old support wraps loose around trunk and no longer needed. Large diameter Ed by wooded area	Low	Remove supports. Training prune	Low	Training Pruning	Low	Zinsser	None
1531	Red oak	Quercus rubra	14	Fair	Leans and unbalanced over parking. Codominant at 8 feet. Small deadwood	Low	Reduce canopy over parking	Low	Routine Pruning	Low	Zinsser	None
1595	Bitternut hickory	Carya cordiformis	6	Good	Vines along trunk. Codominant at 10 feet	Low	Training prune. Cut vines	Low	Training Pruning	Low	Zinsser	None
1596	Bitternut hickory	Carya cordiformis	5	Fair	Vines along trunk. Large diameter branch	Low	Training prune. Cut vines	Low	Training Pruning	Low	Zinsser	None
1623	Crabapple	Malus	8	Fair	Suppressed. Susceptible to foliar disease. Interior sprouting	Low	Thin sprouts	Low	Routine Pruning	Low	Zinsser	No
1669	White oak	Quercus alba	6	Good	Minor anthracnose infection. Codominant at 9 feet. Low canopy could be issue for kids in playground	Low	Training prune. Elevate canopy	Low	Training Pruning	Low	Zinsser	None
1670	Scarlet oak	Quercus coccinea	5	Good	Large diameter branches	Low	Training prune	Low	Training Pruning	Low	Zinsser	None
1672	Red oak	Quercus rubra	4	Good	Large diameter branches. Stem cankers	Low	Training prune	Low	Training Pruning	Low	Zinsser	None
1673	Red maple	Acer rubrum	7	Good	Codominant at 7 and 9 feet. Low canopy could be issue for kids in playground	Low	Training prune. Elevate canopy	Low	Training Pruning	Low	Zinsser	None
1674	Red maple	Acer rubrum	6	Good	Codominant at 8 feet. Low canopy could be issue for kids in playground	Low	Training prune. Elevate canopy	Low	Training Pruning	Low	Zinsser	None
1675	Red maple	Acer rubrum	6	Good	Codominant at 10 feet. Low canopy could be issue for kids in playground	Low	Training prune. Elevate canopy	Low	Training Pruning	Low	Zinsser	None
1676	Red maple	Acer rubrum	6	Good	Codominant at 9 feet. Low canopy could be issue for kids in playground	Low	Training prune. Elevate canopy	Low	Training Pruning	Low	Zinsser	None
1711	Norway maple	Acer platanoides	11	Fair	Leans over trail and parallel to field. Branch low over trail	Low	Remove low branch to elevate over trail	Low	Routine Pruning	Low	Zinsser	Removal due to invasive quality an option
1752	Boxelder maple	Acer negundo	15	Fair	Significant lean toward and over fence. Small deadwood	Low	Reduce canopy from fence	Low	Routine Pruning	Low	Zinsser	None
1821	Cottonwood	Populus deltoides	18	Fair	Vines along trunk. Small deadwood. Nearby dead tree leans away from trail	Low	Cut/remove vines	Low	Routine Pruning	Low	Bridge Trail	None

1829	Cottonwood	Populus deltoides	15	Fair	Deadwood. Thin canopy.	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1833	Cottonwood	Populus deltoides	12	Fair	Leans parallel to trail. Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1837	Black locust	Robinia pseudoacacia	17	Fair	Deadwood over trail.	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1854	Red oak	Quercus rubra	4	Fair	Broken central lead	Low	Training prune	Low	Training Pruning	Low	Bridge Trail	None
1885	Mulberry	Morus	14	Fair	Leans toward trail. Deadwood over trail.	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	Removal an option
1899	Paulownia	Paulownia tomentosa	17	Fair	Slight lean and unbalanced canopy away from trail. Deadwood over trail	Low	Prune deadwood	Low	Routine Pruning	Low	Bridge Trail	None
1917	Black locust	Robinia pseudoacacia	15	Fair	Vines along trunk into canopy.	Low	Remove/cut vines from all trees in unmaintained area	Low	Routine Pruning	Low	Bridge Trail	Removal due to invasive quality an option
1946	Boxelder maple	Acer negundo	17	Fair	Codominant at base with 1947. Small deadwood over trail	Low	Prune deadwood. Reduce canopy over trail	Low	Routine Pruning	Low	Bridge Trail	None





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