City of South Milwaukee
Urban Forestry Plan & Tree Inventory
Summary

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EXECUTIVE SUMMARY

The City of South Milwaukee recognizes that trees provide important economic, social and environmental benefits that significantly improve the quality of urban life. Bluestem Forestry Consulting Inc. completed a public street and park/municipal tree inventory and prepared this management plan in the summer/fall of 2013. This management plan and tree inventory marks a sincere commitment to South Milwaukee’s urban forestry program. This document reports the findings of the inventory and makes specific, prioritized recommendations for managing the urban forest resource for 2014-2018 based on inventory findings, current staffing, budgets and tree circumstances. A companion document, the ‘City of South Milwaukee Emerald Ash Borer Readiness Plan’ was also prepared for the purpose of ash and emerald ash borer (EAB) management. EAB considerations and expenses are included in this management plan, however a more thorough discussion of those circumstances can be found in the companion plan.

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

- A total of 4,491 trees, 97 stumps and 1,473 planting sites were inventoried.
- 745 trees (16.61%) are green, black or white ash and are susceptible to Emerald Ash Borer.
- 24.3% of all sites suitable for a tree are vacant. If no ash are chemically treated for preservation, another 16.6% of sites will be vacant. This would result in an extremely high tree vacancy rate.
- Presently, the City does not provide any tree maintenance for street trees and homeowners are expected to provide all care. The City does care for park trees. The City should implement an urban forestry program for risk management purposes.
- There are 336 recommended for removal for safety reasons. This is 5.5% of total inventoried population. A typical first-time inventory averages removals between 3-10%.
- 235 trees should be pruned for safety reasons (3.9% of total inventoried population). A typical inventory averages 3-7% safety prune. This is a modest removal and safety prune rate for a first time inventory and indicates maintenance has been fair to good.
- The ‘City of South Milwaukee Emerald Ash Borer Readiness Plan’ is a companion guide discussing issues and management costs relating to the emerald ash borer.
- 48.3% of the forest is represented by maple and an additional 16.6% by ash. Ideally, the forest should be comprised of not more than 5% of any one species and 10% of any one genus. No species over the recommended limits, including maple, should be planted until this goal has been met. No ash of any kind should be planted.
- Several options exist for funding the cost of street tree right-of-way related activities. These options include:
  - Continue existing policy requiring homeowners to complete street tree maintenance
  - Fully fund a municipal forestry program
  - Partially fund street tree activities via a flat ‘subsidy’ per tree-related activity (fixed fee to abutting property owner)
  - Cost share with homeowners (percentage fee to abutting property owner)
  - Forestry fee (annual forestry fee per property)
  Each of these options are discussed in depth with estimated prices for each option.
STATEMENT OF PURPOSE AND SCOPE

The purpose of South Milwaukee’s urban forest management plan is to recommend specific activities and designate responsibilities to properly manage the street & park/municipal tree urban forest. This plan includes specific, prioritized, inventory-based recommendations for managing the urban forest. It includes a multi-year budget outline and a directive for responsibilities and support needs. The City Engineer, the Public Works Department and City administration will be responsible for implementation of this plan. The benefits of a healthy, properly maintained urban forest are many including reduced energy costs, reduced stormwater runoff, increased property values and decreased carbon dioxide. Simply stated, proper forest management is cost effective and wise use of funds and time.

TREE INVENTORY

In the summer and fall of 2013, Bluestem Forestry Consulting Inc. conducted a street & park/municipal tree inventory throughout the City of South Milwaukee. Public areas inventoried included City Hall, the Arboretum, Little League Fields and the City Library. Wooded and county-owned areas were not inventoried.

The following data was collected: address, street, side street, species, condition, diameter, prioritized maintenance needs, overhead utility, grow space, defects, condition percentage, date and miscellaneous comments. An ID # was assigned and replacement value were calculated using inventory data. To further aid in understanding the terminology associated with the inventory findings, a Glossary of Inventory Terminology can be found as attachment 2. The data can be accessed via a web-based internet database maintained by MSA Professional Services, Inc. of Baraboo, WI. Their website containing the data is: http://gis2.msa-ps.com. A discussion of some of the overall inventory findings is below.

Diversity. Eighty-five different species were identified within South Milwaukee’s urban forest. This is a very diverse number of species; however, only two genera represent 64.9% of the total population. These two tree genera are maple (48.3%) and ash (16.6%). Ideally, the forest should be comprised of not more than 5% of any one species and 10% of any one genus. For illustration, maple is considered a genus and includes each different type of maple. Each type of maple such as sugar maple is considered a species. In South Milwaukee, silver maple is the most heavily represented of the maples with 706 trees or 15.7% of the total population. Limited species distribution could result in a population crash if an insect or disease were to attack any one particular species.

Similar to Dutch elm disease which destroyed American elms in the 1970-1980’s, the emerald ash borer (EAB) is fatal to ash trees. The State of Wisconsin has confirmed EAB in South Milwaukee. The City has 745 ash trees (16.6% of its public tree population), all of which are threatened by EAB. Green ash is the most common ash tree within South Milwaukee’s urban forest and it represents 14.2% of the overall population. Black ash and white ash make up the remaining 2.4%.

Once infested with EAB, ash trees die within a few years. Several ash treatment options exist to prevent EAB infestation in trees. Treatment will need to continue annually or biannually, depending upon the treatment
selected, for the life of the tree. If treatment is not applied the tree will die. It is not safe for communities to leave dead or dying ash on public property. In all likelihood, South Milwaukee will see the loss of many ash trees within the next several years. The “City of South Milwaukee Emerald Ash Borer Readiness Plan” has been developed that specifically discusses issues relating to EAB including budget projections, chemical treatments, tree removals and replanting strategies.

The ten most common species and over-represented species are shown in the following tables:

### TOP TEN SPECIES SUMMARY TABLE

<table>
<thead>
<tr>
<th>Species and/or Cultivar</th>
<th>Count</th>
<th>Percentage of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver Maple</td>
<td>706</td>
<td>15.7%</td>
</tr>
<tr>
<td>Green Ash</td>
<td>639</td>
<td>14.2%</td>
</tr>
<tr>
<td>Norway Maple</td>
<td>579</td>
<td>12.9%</td>
</tr>
<tr>
<td>Crimson King/Schwedler Maple</td>
<td>393</td>
<td>8.8%</td>
</tr>
<tr>
<td>Honeylocust</td>
<td>238</td>
<td>5.3%</td>
</tr>
<tr>
<td>Sugar Maple</td>
<td>183</td>
<td>4.1%</td>
</tr>
<tr>
<td>Crabapple</td>
<td>167</td>
<td>3.7%</td>
</tr>
<tr>
<td>Red Maple</td>
<td>147</td>
<td>3.3%</td>
</tr>
<tr>
<td>Autumn Blaze Maple</td>
<td>136</td>
<td>3.0%</td>
</tr>
<tr>
<td>White Ash</td>
<td>102</td>
<td>2.3%</td>
</tr>
<tr>
<td>Other</td>
<td>1201</td>
<td>26.7%</td>
</tr>
</tbody>
</table>

### SPECIES/GENUS OVER RECOMMENDED LIMITS

5% of any one species, 10% of any one family

<table>
<thead>
<tr>
<th>Species/Family</th>
<th>Count</th>
<th>Percentage of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maple Family</td>
<td>2171</td>
<td>48.3%</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>706</td>
<td>15.7%</td>
</tr>
<tr>
<td>Norway Maple</td>
<td>579</td>
<td>12.9%</td>
</tr>
<tr>
<td>Crimson King/Schwedler Maple</td>
<td>393</td>
<td>8.8%</td>
</tr>
<tr>
<td>Ash Family</td>
<td>745</td>
<td>16.6%</td>
</tr>
<tr>
<td>Green Ash</td>
<td>639</td>
<td>14.2%</td>
</tr>
<tr>
<td>Honeylocust</td>
<td>238</td>
<td>5.3%</td>
</tr>
</tbody>
</table>
Street & Sidewalk Construction and Impact on Trees.

The inventory noted that many sidewalks have been replaced over the last few years, causing damage to tree roots where root cutting has been performed. This photo illustrates the root pruning that has occurred. Most of the root cutting has occurred on streets with boulevards (terraces) less than 5 feet in width, whose trees do not have adequate space for growth or are an inappropriate species.

Root cutting can adversely affect the health, stability and longevity of the trees. These trees may begin to decline rapidly in the next several years and can be expected to fail. Of most significance is the decline of structural integrity in the tree. Roots essentially serve two purposes. They act as a conduit for water and nutrition uptake for the tree and they serve to anchor the tree in the ground. The tree health will likely decline because of the limited water and nutrient uptake, but most importantly, rooting structure has been compromised. Even a minor windstorm event may cause these trees to uproot. South Milwaukee should evaluate which trees received the most extensive root pruning on recent construction projects and make removal recommendations from this information. Affected trees need to be monitored. On future projects, it is recommended that a forester be involved at the beginning planning stages and throughout street/sidewalk construction to assist with removal decisions and tree monitoring. Construction specifications that are clear and enforceable should be provided so that trees can be preserved.

Tree Planting. There were 1,473 planting sites identified during the inventory. Roughly, only 75% of all suitable sites have trees growing in them and 25% are vacant. This is the single most publicly supported forestry activity. Even if the City continues to leave the responsibility of other maintenance activities (removal, pruning, stump grinding, etc.) to the homeowner, the City is strongly encouraged to initiate a municipal tree planting program. There are many reasons to grow an urban forest: public health benefits, reduced stormwater runoff, decreased cooling costs, etc. More people prefer to live on a street with a healthy tree canopy. Streets with a healthy tree canopy are simply more livable. The two pictures below illustrate the difference between healthy street tree canopy and no street tree canopy.
City Forester Needed. The City does not have a City Forester or Forestry Department. The Municipal Code delegates some forestry duties (such as inspection and vision clearance) to the City Engineer. The City Engineer also fields most forestry related questions, enforces ordinances and obtained grant funding for this inventory project. The Public Works/Street Department issues order for trimming where tree limbs interfere with equipment operation.

The City Engineer has been able to manage forestry duties on a very limited basis, with help from Public Works, because the volume and need has been fairly low. The City can expect a huge increase in forestry related issues and duties such as tree inspections, tree maintenance enforcement, training prunes and as a result of EAB and other problems identified through the inventory. It is completely unreasonable and unfeasible to expect the City Engineer to complete increased forestry management and still complete his primary duty as Engineer. The City will need an individual to fill this role. The Engineer & Public Works will certainly remain engaged, but the addition of a forester will allow existing staff to continue successfully completing their current job duties.

Two options exist for filling the forestry staff void. The first is for City to add a forester to City staff. The second is to contract with a professional forester.

Adding City staff will means that the City will have access to an expert at all times. But based on tree population, it may not be necessary to staff a forester once the EAB crisis has been managed.
Contracting with a professional forester means that the City will have access to an expert, but will need to be more flexible with timing of activities and expectations. When EAB activities have decreased it will be easy to decrease contract forestry services.

It is estimated that beginning in 2014 South Milwaukee will need an individual between 20-30 hours weekly to implement this plan and the recommendations in the 'City of South Milwaukee Urban Forestry Plan and Inventory Summary.' This level of service is expected to continue for 3-4 years and will then begin to taper off. Taking into consideration costs, duties and time commitments this plan recommends contracting with a professional forester. This scenario should be re-evaluated annually during budget time to determine if it is more reasonable to hire an in-house forester. The City can expect the cost of a contract forester to range from $50,000-$70,000 annually.

**Addtional Tree Inventory Findings**

The following graphs provide a visual representation of additional overall inventory findings:

![Condition Distribution of all trees](image)
SIZE DISTRIBUTION

<table>
<thead>
<tr>
<th>Existing</th>
<th>dbh*</th>
<th>Ideal**</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.0%</td>
<td>0-8&quot;</td>
<td>40.0%</td>
</tr>
<tr>
<td>30.4%</td>
<td>9-16&quot;</td>
<td>30.0%</td>
</tr>
<tr>
<td>26.7%</td>
<td>17-24&quot;</td>
<td>20.0%</td>
</tr>
<tr>
<td>16.9%</td>
<td>25+&quot;</td>
<td>10.0%</td>
</tr>
</tbody>
</table>

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

The City currently cares for trees in park/municipal properties only. The care of street right-of-way trees has been the responsibility of individual homeowners. Most municipalities within Wisconsin assume the responsibility of tree care and management within both public properties and street rights-of-way. The South Milwaukee City Attorney has reviewed the current policy and provided an opinion that City ordinances requiring property owners’ obligation to maintain street trees will not relieve the City of liability, and the ordinance cannot shift the liability to the abutting property owner, although it may shift the cost of maintenance.

This plan recommends that the City cause tree maintenance to occur. The City should institute a minimum program of tree inspections and risk/hazard reduction (see more detailed risk reduction recommendations later in this plan). Ideally, a complete urban forestry program maintenance program including scheduled pruning, pest management, planting and other forms of tree care is also instituted.

Causing tree maintenance in rights-of-way will require a source of funding. This plan presents several funding scenarios for future forestry management of street right-of-way trees. These are:

A. Continue existing policy requiring homeowners to complete street tree maintenance
B. Fully fund a municipal forestry program
C. Partially fund street tree activities via a flat ‘subsidy’ per tree-related activity (fixed fee to abutting property owner)
D. Cost share with homeowners (percentage fee to abutting property owner)
E. Forestry Fee (annual forestry fee per property)

Option A is to continue the existing policy of requiring homeowners to fund all street tree maintenance. This is the least expensive option for the City. However, even this option will incur costs due to EAB and other issues identified during the inventory. As discussed earlier, a forester needs to be retained to coordinate activities with homeowners and assure that actions are being completed.

Option B is the most common municipal forestry program scenario. Most municipalities fund management of public/park trees as well as street right-of-way trees.

Option C is presented to span the gap between Options A & B. Both plans that have been created as a result of the inventory recommend a large amount of forestry work. Whether the recommendation is to treat an ash tree for preservation or remove a high risk tree, there are homeowners who will find it difficult to fully pay for the cost of tree maintenance of their street right-of-way trees. This option would establish a flat fee per activity to lower the cost to homeowners with the City funding the balance.

Option D is similar to Option C, but results in less finite costs to the City. Instead of a flat-free, the City would simply cost share all street tree maintenance costs with homeowners. For instance, if an EAB treatment costs $100, the City could pay a straight percentage, for example, 50%. This will result in greater cost fluctuations because the cost of removal of a 20” tree can vary greatly depending upon where the tree is located and what is nearby.
Option E would establish a fee for urban forestry similar to storm water and utility fees are collected. For example, a property owner may pay $0.30/ft/year or a flat annual fee into an urban forestry fund. Then those fees are used to fund an urban forestry program.

At a minimum, the City should be prepared to fund two activities immediately.

Forester. Again, a forester needs to be retained to coordinate activities with homeowners and assure that actions are being completed regardless of the funding option chosen.

Replanting. The City should strongly consider funding all planting efforts. To assure a healthy tree canopy cover, South Milwaukee must plant trees. Replanting is critical to a healthy, livable community. The photos below clearly illustrate the result of planting and not planting.
**TREE MAINTENANCE TIMELINE**

This inventory provides a first-ever overall look at South Milwaukee’s urban forestry maintenance needs. EAB significantly increases the amount of necessary tree work and deciding what to do first can be difficult. To simplify the pecking order of activities, the following summary has been provided by year. A further description of activities and their associated costs can be located in Attachment 1: Schedule of Activities and in the accompanying ‘City of South Milwaukee Emerald Ash Borer Readiness Plan.’ Administration is strongly encouraged to support the following activities:

### Activities to be Completed in 2014.
- Complete removals 0-20% (208 trees)
- Complete priority prune 1 (100 trees)
- Remove/replant ash with significant defects (143 trees)
- Chemically treat ash to prevent EAB (369 trees)*
- Monitor/tree inspections/training prunes/hire forester

### Activities to be Completed in 2015.
- Complete removals ≥25% condition (63 trees)
- Complete priority prune 2 (113 trees)
- Remove/replant ash small diameter ash (205 trees)
- Grind existing stumps (97 stumps)
- Monitor/tree inspections/training prunes/hire forester
- Plant trees (125)
- Chemically treat ash to prevent EAB (369 trees)*

### Activities to be Completed in 2016 & annually thereafter.
- Chemically treat ash to prevent EAB (369 trees)*
- Complete routine removals (apprx 40/year)
- Plant trees (125 plantings)
- Monitor/tree inspections/training prunes/hire forester

*This activity may occur annually or every other year depending upon chemical used.
URBAN FORESTRY GOALS

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

GOAL 1: ELIMINATE HIGH RISK SITUATIONS.

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

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

Objective A: Perform yearly tree inspections/Evaluate risk management program.
Objective B: Perform training prunes.
Objective C: Perform routine pruning and removals.
Objective D: Plant high quality trees with low maintenance requirements.
Objective E: Inventory updating.
GOAL 1: Eliminate high-risk situations.

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

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

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

Objective A: Remove High Risk Trees.

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

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

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

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

Based on the inventory data, Bluestem estimates that 336 trees should be immediately removed from the existing tree population. Some additional removals are recommended due to EAB, causing the total number of
removals recommended over the course of 2014-2015 to be 619 trees. Once this initial group of trees is removed, the City’s removal program should stabilize at approximately 40 removals per year (1.0% of the total population) assuming the remaining ash are being preserved thru chemical treatment.

Each tree was given a condition rating when it was inventoried. This number is used to calculate the appraised replacement dollar value of each tree, but is also used to prioritize removals. Ratings range from a low of 0% to a high of 100%. For example, a specimen tree in perfect condition received a 100%. A dead standing tree received a 0%. Most removals fall between 0-30%. The schedule of activities (Attachment 1) has broken the removals into two categories. Category one includes trees with a rating of 0-20%. These are the highest priority trees and need to be removed in 2014. These are large trees with very significant targets and serious defects such as cavities and decay. Category two are removals greater than or equal to 25% and these need to be removed no later than 2015.

Several factors can assist with prioritizing tree removals and management:

1. Utilize the Risk Management Guide (attachment 3). This guide is a step-by-step system for evaluating risk within the population. This guide was utilized during the inventory fieldwork and is a good guide for the City to use for day-to-day duties. For example, several steps are listed for tree evaluation. One step is to ‘Identify Problematic Conditions’. The inventory identified a condition rating for each tree inventoried. A tree was assigned one of six ratings: excellent, good, fair, poor, very poor or dead. Very poor and dead trees need to be prioritized for removal. Other steps include identifying problematic species, diameters and defects. Some problematic species include willow and boxelder. These trees are typically weak wooded and tend to fail more often than other species such as oak. Problematic diameters include larger diameter trees. A 2” dbh dead tree poses minimal risk, while a 30” dead or very poor condition tree poses a very high risk. Additionally, certain defects should be red-flagged for action. Cavities, decay and excessive dieback are some of the more severe defects noted during the inventory. All of this data can be found within the inventory database. Target and location are also important factors to consider when prioritizing removals. Playgrounds and busy streets where pedestrians and vehicles frequent should receive higher priority than streets with wooded/naturalized rights-of-way. The combination of these factors should be used to determine the order in which trees need to be removed.

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

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

A “high risk” is any tree or tree part that demonstrates a high risk of failure or fractures which would result in damage or injury to people or property. Usually, high-risk trees demonstrate visible defects.
There are two distinct aspects to the definition of a high risk tree: 1) a physical defect within a tree that increases its potential for failure, and 2) the proximity of the tree to people or property that increases the likelihood of personal injury or property damage. A decaying tree in the middle of the Chequamegon National Forest may have a potential for failure, but the chance that tree will cause personal injury is remote. However, that same tree located at the Little League Fields or anywhere in South Milwaukee, should be considered a high risk because of its urban location.

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

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

The risk assessment that South Milwaukee should use to evaluate trees was created by the International Society of Arboriculture. It is titled A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas, 2nd Edition by Nelda Matheny and James R. Clark. This can be purchased for $45.00 at 1-888-472-8733. Additional resources include the US Forest Service’s “Urban Tree Risk Management” guide. This is available at no charge from the WI DNR regional urban forester.

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

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

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


A notification procedure should be enacted to alert nearby residents of the impending removal. Not only does this alert them to the high risk situation, it helps residents feel involved in the decision and gives them time to adjust to the loss of the adjacent tree. The tree can be “marked” and give the nearby homeowner written
notification explaining why the tree is being removed, how the removal will be performed, when the removal will begin and if replanting will occur. Include a phone number to be contacted for any additional questions or concerns. Ordinances are currently undergoing revisions and will likely include a notification procedure.

Objective B: Prune High-risk Branches.

A total of 213 trees are in need of priority pruning after removals have been completed. Trees in need of priority pruning were broken into two categories, Prune Priority 1 and Prune Priority 2.

Prune Priority 1 are trees with obvious risks such as branch cavities, hangers or significantly sized deadwood. These trees should be pruned immediately as they present the greatest danger. One hundred trees were identified as Prune Priority 1. These should be pruned in conjunction with the initial high-risk removals in 2014.

Prune Priority 2 are trees with structural deficiencies or with a potentially dangerous situation developing. For example, a tree with crossed or congested limbs or a tree in the initial stages of dieback would be classified as a Prune Priority 2. After removals, 113 trees will need a Prune Priority 2. These prunings should be performed with the second batch of removals in 2015 or sooner if possible.

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

Objective C: Remove and Manage Ash Trees for EAB

Seven hundred forty-five trees in South Milwaukee are ash. Without chemical treatment, these trees will eventually die from EAB since EAB has been confirmed within the City. The ‘City of South Milwaukee Emerald Ash Borer Readiness Plan’ prioritizes ash removals in advance of EAB and identifies 369 trees that are significant enough to receive chemical treatment for preservation. EAB costs are included in Attachment 1: Schedule of Activities. Further detailed recommendations are found in the companion EAB Readiness Plan.
GOAL 2: Establish a routine, comprehensive urban forestry program for a healthy forest.

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

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

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

It is important that a qualified forester complete all tree inspections (greater than 6” in diameter). This is one of the many duties that a City Forester can complete.

Seven factors should be considered when evaluating trees:

1. Crown development
   ~ characteristic of species and well balanced
   ~ branching throughout entire upper 2/3 of trunk area
   ~ lacking full crown
2. Trunk
   ~ one central leader is desired
   ~ no defects
   ~ missing sections of bark
   ~ extensive decay or hollow
3. Major branch structure
   ~ evenly distributed branches
   ~ structurally important branches not dead or broken
4. Twig growth rate
   ~ typical for species and age
   ~ growth rate reduced
5. Foliage
   ~ normal size and color
   ~ small leaves with deficiencies
6. Insects and disease  
   ~ no apparent problems  
   ~ severe infestation

7. Roots  
   ~ extensive root loss  
   ~ stem girdling roots present  
   ~ trunk flare present indicating proper planting depth

An excellent resource guide is “How to Recognize Hazardous Defects in Trees” published by the USDA Forest Service (Guide # NA-FR-01-96). This can be found at:  

To reduce high-risk situations within South Milwaukee, the City Forester and Engineer should evaluate the risk management program annually, see discussion on page 14. The evaluation can be accomplished by following the Risk Management Guide (Attachment 3). This inventory and management plan represents the first comprehensive inventory but is not a substitute for a hazard tree evaluation. This management plan is the first phase of the risk management program.

**Objective B: Perform Training Prunes.**

Training pruning is the structural pruning of all trees 10 years of age or younger (see Attachment 2: Glossary of Terms for additional information). Some benefits of training pruning include:

- *Pruning 2-3 times in the first ten years of a tree’s life will reduce 90% of the structural problems the tree will ever have.*

- *This is the easiest pruning to perform due to the small size of the trees.*

- *Training pruning is the most cost effective pruning because it reduces long-term routine pruning costs.*

- *It is the most economical pruning because an in-house crew can complete it quickly and efficiently.*

Trees that are structurally pruned at this stage require much less care as they mature. It is not necessary that they be pruned every year but an every-other year pruning is a good objective. This results in cost savings and still adequately prunes the tree. This equates to approximately 194 training prunes per year. The City Forester can complete this task. All of the training prunes can be completed in-house until they are unable to be reached from the ground or are older than 10 years planted, and then they will be scheduled for routine pruning.

**Objective C: Perform Routine Pruning & Removals.**

One of the most beneficial and noticeable activities performed in the urban forest is routine pruning. Routine pruning is the cycle of pruning all trees on a rotating basis (see Attachment 2: Glossary of Terms for additional
information). Once all of the safety issues have been addressed, all trees 10 years of age or over (approximately 6” or over) need to be placed on a routine pruning cycle. Some benefits of routine pruning include:

- Increased health and viability of trees.
- Fewer tree mortalities and fewer structural deficiencies.
- Reduced liability from potential tree-related injuries or damages to property.
- Increased property values.
- Enhanced aesthetic value.
- Fewer complaints/requests.
- Increased longevity of tree.
- Reduced future costs associated with hazardous limbs and decay.
- Improved cost effectiveness of tree maintenance reducing the need for on-demand pruning and associated staff overtime.

Once risk issues have been resolved and ash management is under way, a feasible routine pruning cycle needs to be established. It is likely that routine pruning will not begin for several years. Industry guidelines are to prune each tree over 6” dbh once every 5-8 years. To save cost and time, an eight year cycle is recommended. Essentially, the City can be broken into eight zones and a different zone has work completed in a particular year. For example, routine pruning in 2016 will occur in zone 1, zone 2 in 2017, etc. Taking into consideration South Milwaukee’s current level of stocking, the above mentioned routine pruning cycle of eight years will result in approximately 520 trees pruned annually.

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

Oak wilt is problem throughout the state. Oaks occur frequently both in the street tree population and in private yards. Do not cut, prune or otherwise wound oaks in the spring and early summer, generally from April 1-August 30. To be very cautious, avoid wounding oaks from March 1st - October 1st. For more information on oak wilt see: [http://dnr.wi.gov/forestry/fh/oakwilt/](http://dnr.wi.gov/forestry/fh/oakwilt/) or [http://na.fs.fed.us/pubs/detail.cfm?id=921](http://na.fs.fed.us/pubs/detail.cfm?id=921)

Another facet of routine maintenance includes ‘routine’ tree removals. Any given City can expect approximately 1-2% of trees will need to be removed per year due to high-risk situations that develop naturally as the tree population matures. This is in addition to the initial safety removals. In South Milwaukee this calculates into a total of 40 removals per year. This has also been figured into the schedule of activities that can be found as attachment 1.
Objective D: Plant high quality trees with low maintenance needs.

There were 1,473 planting sites identified on street rights-of-way during the inventory. Trees provide huge benefits and planting needs to occur on an annual basis to assure that trees are growing for future generations.

To continue enjoying and increase the varied benefits of trees, trees must be planted. In South Milwaukee, 1,379 planting sites are suitable for larger growing trees (boulevard greater than 5 feet in width and without nearby competition from other trees or structures), 31 are suitable for medium sized trees (boulevard greater than 5 feet, but with nearby competition that precludes a larger tree from successful growth) and 63 are suitable for small trees under power lines (see the 'City of South Milwaukee Emerald Ash Borer Readiness Plan' for a full list of recommended species). Certain planting policies can be applied to any community. As always, no planting should take place until all of the high risk safety situations identified have been alleviated. Then, the order of priority for tree planting should be:

1. Trees lost within the past year.
2. Trees lost within the past three years.
3. Appropriate sites within the current work zone.
4. Homeowner requests.

Beginning in Year 2015, 125 plantings have been included in the budget (see Attachment 1: Schedule of Activities). They should be 1.5-2.0" dbh and planted properly. Be sure to mulch all new trees to help keep lawn maintenance equipment from damaging trunks.

GENERAL DESIGN GUIDELINES FOR SPECIES SELECTION:

1. Plant trees to define spaces and select species appropriate for the purposes served by each space. For example, trees might function as a wind break near a park ball field or the function of a boulevard tree near a home is for shade.

2. Select trees for the community with desirable forms, colors and textures.

3. Increase tree canopy. Plant the largest-growing tree appropriate for each planting site to encourage high canopy coverage.

4. Evaluate soil conditions to determine the best species choice.

5. Match tree size to street width and the available space in the terrace.

6. Space trees an appropriate distance apart:
Small trees (up to 30’ tall) planted at 25’ offcenters planting width min. 5’
Medium trees (30 - 45’ tall) planted at 35 - 40’ offcenters planting width min. 5-8’
Large trees (>45’ tall) planted at 45’ - 50’ offcenters planting width min. >8’

7. Complement existing vegetation.

8. Match planting concept, tree size and spacing with the adjacent land use.

9. Do not plant coniferous (spruce, cedar, pine, etc.) trees within terrace areas, regardless if there are sidewalks and curbs or not.


South Milwaukee is a Zone 4 climate and types allow for some good street and park tree planting selections. A comprehensive list of tree plantings including varieties can be found as an Attachment in the companion EAB Readiness Plan. The list below is a quick general list for review.

Good large selections include:
swamp white oak (Quercus bicolor)
hackberry (Celtis occidentalis)
bur oak (Quercus macrocarpa)
American linden (Tilia americana)
elm (Ulmus spp.)
American Liberty elm (Ulmus americana ‘Liberty’)
Kentucky coffeetree (Gymnocladus dioica)
ginkgo (Ginkgo biloba)
honeylocust (Gleditsia triacanthos)
Turkish filbert (Corylus column)

Good medium selections include:
Amur cork tree (Phellodendron amurense)
river birch (Betula nigra)
amur chokecherry (Prunus maackii)
horsechestnuts (Aesculus spp.)
amur maackia (Maacia amurensis)

Small sites can be filled with:
Japanese tree lilac (Syringa reticulata)
serviceberry (Amelanchier x grandiflora)
hophornbeam (Ostrya virginiana)
American hornbeam (Carpinus caroliniana)
crabapple (Malus spp.)
Hawthorn (Crataegus spp.)
It is important to diversify the urban forest as much as possible. Every effort should be made to continue diversification. Planting many different species and varieties keeps the urban forest healthy and attractive.

Ideally, no more than 5% of any one species and 10% of any one family should comprise the City’s trees. Again, maples are over represented. These should be planted only in extremely special circumstances. No ash should be planted due to the emerald ash borer.

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

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

**Objective E: Inventory Maintenance and Updating.**

The inventory database is a software program designed and maintained by MSA Professional Associates (http://gis2.msa-ps.com). Whoever completes tree work should complete work orders (see database). One specifically designated person should input the completed work on a continuing basis. Without continual updating in this way, the inventory quickly becomes obsolete. Annually, the City Forester and Engineer should evaluate this management plan and inventory based work/goals as they are implemented to assure the goals are being met and new goals are being developed.

This management plan contains provisions for five years, beginning in 2014. Typically, a complete re-inventory should be completed every 5 years. When the inventory expires in 2019, a qualified, experienced forester should thoroughly evaluate all of the trees on an individual basis again. It is beneficial for an experienced eye outside the City perform an inventory due to changing tree conditions and factors.
ATTACHMENT 1:
2014-2018 Schedule of Activities
### 2014: Hire Forester (Yearly)

| TOTAL Cost | $50,000-$70,000 |

All cost estimates are derived with the assumption that a contractor will complete activities.

### 2014: Remove & Replant 143 Ash with Significant Defects

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<th>DBH</th>
<th>Estimated Cost of Removal per Tree</th>
<th>Estimated Cost of Replanting per Tree</th>
<th># of Street Trees</th>
<th># of Municipal Trees</th>
<th>Estimated Street Tree Cost</th>
<th>Estimated Municipal Tree Cost</th>
<th>Estimated Replanting Cost</th>
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### 2014: Remove & Replant Removals 0-20%

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### 2014: Chemical Treatment of Remaining 369 Ash*

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* based on using TREE-äge on an everyother year cycle
### 2015: Hire Forester (Yearly)

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<td>TOTAL Cost (Annual Expense)</td>
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### 2015: Remove & Replant 205 Small Diameter (1-11”) Ash

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<th>Estimated Cost of Replanting per Tree</th>
<th># of Street Trees</th>
<th># of Municipal Trees</th>
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<th>Estimated Municipal Tree Cost</th>
<th>Estimated Replanting Cost</th>
<th>TOTAL Cost</th>
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### 2014: Remove & Replant Removals ≥25%

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<tbody>
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<td>1-12”</td>
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| TOTAL Cost |            |            | $19,255 | $0 | $25,600 |

### 2014: Prune Priority 1

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</tbody>
</table>

| TOTAL Cost |            |            | $40,035 | $0 | n/a |

### 2014: Remove Existing Stumps

<table>
<thead>
<tr>
<th>DBH</th>
<th>Estimated Cost of Removal per Tree</th>
<th>Estimated Cost of Replanting per Tree</th>
<th># of Street Trees</th>
<th># of Municipal Trees</th>
<th>Estimated Street Tree Cost</th>
<th>Estimated Municipal Tree Cost</th>
<th>Estimated Replanting Cost</th>
<th>TOTAL Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-12”</td>
<td>$40</td>
<td>n/a</td>
<td>17</td>
<td>0</td>
<td>$680</td>
<td>$0</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>13-18”</td>
<td>$60</td>
<td>n/a</td>
<td>29</td>
<td>0</td>
<td>$1,740</td>
<td>$0</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>19-24”</td>
<td>$75</td>
<td>n/a</td>
<td>18</td>
<td>0</td>
<td>$1,350</td>
<td>$0</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>25-31”</td>
<td>$100</td>
<td>n/a</td>
<td>18</td>
<td>0</td>
<td>$1,800</td>
<td>$0</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>≥32”</td>
<td>$125</td>
<td>n/a</td>
<td>15</td>
<td>0</td>
<td>$1,875</td>
<td>$0</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

| TOTAL Cost |            |            | $7,445 | $0 | n/a |

### 2015: Plant Trees (Yearly)

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 trees @ $400/each</td>
<td>$50,000</td>
</tr>
</tbody>
</table>

City of South Milwaukee
Urban Forestry Management Plan & Tree Inventory Analysis
Prepared by: Bluestem Forestry Consulting, Inc.
December 11, 2013
### THE FOLLOWING ACTIVITIES SHOULD OCCUR ANNUALLY UNLESS NOTED

**Hire Forester (Yearly)**

| TOTAL Cost (Annual Expense) | $50,000-$70,000 |

**2016: Chemical Treatment of Remaining 369 Ash* (even years)**

<table>
<thead>
<tr>
<th># of Street Trees</th>
<th># of Municipal Trees</th>
<th>Estimated Street Tree Cost</th>
<th>Estimated Municipal Tree Cost</th>
<th>TOTAL Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>369</td>
<td>26</td>
<td>$81,620</td>
<td>$6,006</td>
<td>$87,626</td>
</tr>
</tbody>
</table>

*based on using TREE-äge on an everyother year cycle

**Est. Cost of Routine Prune**

| 520 trees        | $195,000 |

**Est. Cost of Routine Removal**

| 40 trees        | $26,000 |

**Plant Trees (Yearly)**

| 125 trees @$400/each | $50,000 |
**TREE CONDITION**

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

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

**Excellent** - A tree in excellent condition has no visible defects and appears to be in perfect health. The tree will exhibit all of the characteristics typical of its species. An excellent tree can be expected to live well into the future.

**Good** - A tree in good condition has a sound trunk and a full canopy and has only minor mechanical injuries such as minor trunk scarring that will eventually heal. The tree will exhibit most of the characteristics associated with its species and can be expected to live for many years.

**Fair** - A tree in fair condition will be exhibiting minor to moderate defects. Some situations that would warrant a fair rating include: a thinning canopy, twig growth may only be 1/2 the expected rate, significant mechanical injury such as scarring on the trunk, insects or disease may be present but are controllable and the crown may be lacking the natural or desired symmetry characteristic to the species. If given routine maintenance such as pruning and mulching a tree that is graded fair will contribute to the forest for many years.

**Poor** - A poor tree will be expressing low vigor and significant decline as evidenced by branch dieback, abnormal leaf size, early fall coloration, trunk decay due to injury or canker or the production of new branches on the main stem. A tree in poor condition will most likely require removal, but may be improved with priority pruning.

**Very Poor** - A tree in very poor condition is on the verge of dying. Dieback will be severe or it may be lacking a full crown. Trunk/crown cavities or decay, severe cracks and seams or severe root problems may also be present. Removal for safety will be required.

**Dead** - A tree in dead condition is simply a dead standing tree. These will most likely occur in wooded or unmaintained areas, but may also occur with smaller new plantings that have failed. These trees will require removal.
TREE MAINTENANCE NEEDS

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

The following are the definitions of the maintenance categories:

**Removal** - Trees designated as a removal are either dead or have one or more defects that cannot be remedied. These trees will most likely have a severe trunk defect such as a cavity or extensive decay, have severe cracks associated with weak unions or have a large percentage of crown death and are potential safety hazards. Most of the trees in this category will rate a very poor or dead condition rating.

**Special Action** - Trees that should need a special inspection likely for EAB received this designation. It was suspected that they are infested with EAB and inspecting the tree will confirm or deny this suspicion.

**Prune Priority 1** - These trees have severe deadwood, hangers or broken branches that need to be remedied as soon as possible. Trees with unattached hanging branches or dead attached branches that are over 2 inches in diameter will be listed in this maintenance category. Overall re-evaluation of the tree while pruning may result in removal of the tree if more extensive problems are noted.

**Prune Priority 2** - These trees need pruning more quickly than a routine pruning cycle will allow and have dead, dying or weakened branches that are over less than 2 inches in diameter. The majority of these defects can be corrected with pruning and the tree can be expected to live for many years.

**Routine Prune** - All trees need to be placed on a cycle of trimming to correct small structural problems or growth patterns that will eventually affect the tree adversely. Routine pruning will result in a healthier, more vigorous tree and will extend the life of most trees. A routine pruning cycle of once every 5-8 years is ideal.

**Training Prune** - Training pruning is the structural pruning of all trees 10 years of age or younger. Removing poorly attached co-dominant, crossing and competing limbs while the tree is young, resulting in small cuts and wounds will produce a well-balanced mature crown. This is the most cost-effective form of all maintenance.

**Grind Stump** – Existing stumps were given this maintenance need.
GROWSPACE DESCRIPTIONS

The size and type of terrace is noted during the inventory. The following are the categories used to classify the terraces:

**Boulevard with walk >5'** - This is a terrace framed by a sidewalk and curb/street and is 5’ or greater in width. These sites are typically well suited for tree planting and growth.

**Boulevard with walk <5'** - This describes a terrace that is framed by a sidewalk and street or curb and is at less than 5’ in width. These terraces are not suited to tree planting due to the limited resources.

**Unrestricted** - These are terraces that do not have a sidewalk present. These terraces occur most frequently in "yard" type settings where there is a right-of-way, but there is no sidewalk. They can also occur in wooded or park settings.

**Attached sidewalk** – The sidewalk is attached to the curb with a tree on the right-of-way growing behind the sidewalk.

**Cutout** - A tree growing in a concrete cut-out has a terrace listed a 'well'. These growing situations usually occur in downtown areas.

**Median** - Medians occur when a growing strip occurs between opposite directions of traffic on a single street.

**Park** – Trees growing in or along parks will be given this designation

**Behind Walk** – This describes a formal terrace, but with the right-of-way extending beyond the sidewalk area.

**Island** – An island can often be found in cul de sacs and describes the circular area at the end of the street.
RISK MANAGEMENT

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

Types of Risk
- Financial
- Physical harm

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

EVALUATE THE NATURAL RESOURCES BEING MANAGED

Evaluate the Entire Population
An understanding of the entire population allows you to identify the key problem areas within the population.
- Species distribution
- Diameter distribution
- Condition distribution
- Defects
- Locations and targets

Identify Problematic Species
Identify the species that, based on your knowledge and experience, pose the greatest physical threat.
- High history of failure
- High storm damage potential
- Prone to high-risk structural defects

Identify Problematic Diameters
Identify the diameters that, based on your knowledge and experience, pose the greatest problem in your population.
- Large diameter trees
Identify Problematic Conditions
Identify the conditions that, based on your knowledge and experience, pose the greatest problem in your population.
- Very poor trees
- Poor trees

Identify Problematic Defects
Identify the defects that, based on your knowledge and experience, pose the greatest problem in your population.
- Basal decay and cavities
- Major dieback
- Poor branch attachments

Identify Locations and Targets
Identify the locations and targets that, based on your knowledge and experience, pose the greatest physical threat in your population.
- Busy streets
- Playground areas

EVALUATE THE RESOURCES AVAILABLE TO MANAGE

Staffing
- Number
- Training
- Work load

Equipment
- Diagnostic
- Capabilities/limitations
- Availability

Fiscal

CREATE A TREE RISK MANAGEMENT POLICY STATEMENT

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

The following is an example of a Hazard Tree Policy Statement:
The City of Metropolis has an active policy to maintain the safety of public lands from potentially hazardous trees. The City will strive to eliminate, in a timely fashion, any tree deemed hazardous. When available fiscal and human resources limit the ability of the City to remove high-risk trees, priority shall be placed on trees deemed to carry the highest risk. The standard for rating the potential risk of a tree will be the International Society of Arboriculture's twelve point hazard evaluation system. The Director of Parks, Recreation and Forestry will administer this program and have final judgment in all matters concerning the mitigation measures taken for any tree deemed hazardous.

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

DEVELOP AND IMPLEMENT AN ACTION PLAN

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

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

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

PERIODIC REVIEW OF ALL FOUR COMPONENTS

Review all four components of your risk management plan frequently.