EMERALD ASH BORER MANAGEMENT PLAN
CITY OF WAUPACA, WISCONSIN
April, 2015

Introduction

The **emerald ash borer (EAB)** is an invasive insect native to Asia that was introduced into the United States via wooden packing material. It was discovered in Detroit, MI in 2002. The insect has spread throughout the Midwest since its arrival and was first discovered in Wisconsin in 2008. As of 2014 EAB has now been found in 27 Wisconsin Counties. It has not yet been found in Waupaca County. In Asia, the insect has little impact due to the existence of natural insect predators, however; in the United States there are no natural predators to keep the insect in check and as a result has killed tens of millions of ash trees in the US and Canada.

The city of Waupaca's response to Emerald Ash Borer unofficially started when it was first identified in Michigan. Since EAB was discovered in Wisconsin, staff began making firm decisions towards the response to EAB. Staff has reviewed our street tree inventory, conducted an ash inventory on all publicly owned properties, reviewed staffing levels and equipment requirements, reviewed chemical treatment of trees, examined in-house treatments vs. contractual, compared removals in-house to contractual, reviewed tree establishment programs and woody waste management. Staff will try to keep the Common Council and the public up to date regarding EAB.

Funding will be the determining factor when formulating a responsible action plan. Currently, the focus is on funding for planting and preparing. We will not be able to save many, if any, ash trees without pesticide applications. We are continually examining annual in-house forestry operations so we can efficiently respond to this insect and absorb as much as we can in-house. The City of Waupaca has the potential to lose 8-14% of our street & managed park trees due to this insect and funding will be the determining factor for the future of our urban forest. Ultimately effective management of this pest must be a dynamic process of continual analysis, assessment and adjustment of techniques and policy as needed.

Purpose

By implementing the provisions in this management plan, the City of Waupaca is attempting to mitigate the disruption to its urban forest caused by the pending infestation of EAB. Taking a proactive approach will enable the City to address public and private needs in an efficient and effective manner. How City Officials deal with this upcoming situation now, will have a major impact as to what Waupaca will look like for our future generations.

A proactive Emerald Ash Borer Management Plan will enable the City to:

- Update and revise appropriate public ordinances.
- Update public tree inventory, and estimate ash tree population on private property
- Locate possible holding yard(s) for large quantities of wood and develop procedures for dealing with infested material
- Determine the City's comprehensive ash tree policy
- Develop an ash tree reduction program
- Establish ash tree treatment policy
- Establish re-planting recommendations
- Review City personnel and equipment needs and/or availability regarding EAB
- Develop and strengthen community education and outreach
- Keep local officials updated

City of Waupaca Ash Tree Population (8% of all street trees and 14% of all managed park land trees)

61 Street Ash Trees
54 Managed Park Ash Trees

Waupaca's approximate street tree population is 740 trees. Of these 740 trees, 61 are some species of ash. Currently ash makes up about 8% of Waupaca's street tree population. All street tree ash diameters were measured in 2014. There are another 387 trees in managed areas of parks of which 54 are ash. This is about 14 % of the managed park tree population. Ash tree diameters were measured to produce accurate cost projections when budgeting for any potential future ash tree insecticide treatment, removal and replanting.

Currently there is discussion of a possible future Main Street Reconstruction Project. There are currently 16 of the total 61 street ash trees located on these four blocks of Main Street, all of which are rated either in fair or poor condition. Staff recommends removal of the Main Street ash trees at the time of construction and replacement with a suitable species.

An estimate of the number of ash trees on private land should be figured. This number is important because it would assist in estimating the amount of wood waste that could be generated. In addition the surrounding township areas would be generating ash tree woody waste as well. This could affect operations and budgets at the Waupaca Regional Recycling and Composting Center (WRRCC).

The City may want to consider applying for an Urban Forestry Grant through WDNR in order to generate a more accurate number of ash trees on private lands if staff is unable to do this in house. Ash trees also comprise a large component of unmanaged park woods and woodlots in Waupaca, such as the woods in Swan Park, Riverside Park, the River Ridge Natural Area, Lakeside Cemetery and other undeveloped city properties. The number of ash trees is not known in these areas.

Public Ash Trees Condition Inventory

The updated ash tree condition inventory will be used to manage all species of ash. Removal of ash trees will be part of, or the entire component of EAB management. A tree risk assessment should be done on all ash trees located in the boulevards and managed park areas.

Prioritization of removals should be based upon risk abatement, nuisance and budget. High risk ash trees will take priority and will be removed first. Poorly sited ash trees (trees planted under utility lines) will be removed next. The City would prioritize the replacement of the removed trees with site appropriate trees pending funds and personnel. The current ash tree inventory shows only 2 street trees and 1 park tree planted under utility lines. Before a street tree is removed, the adjacent property owner will be notified. This has been the policy in the past and we will continue to do so in regards to EAB. Staff will work on reducing the number of undesirable ash trees prior to EAB arrival. This part of the plan will be the most dynamic. Ash trees at this time should only be receiving clearance and deadwood pruning. Time should not be spent structurally pruning the majority of ash trees. This pruning practice would change if it is decided to indefinitely treat ash trees. Ash trees in construction sites should not be worked around. They should be removed and replaced.

The current street tree inventory list: (61 ash trees)

17 ash trees good condition	***(28%)***
33 trees fair condition	***(54%)***
11 trees poor condition	***(18%)***

The managed park tree inventory lists: (54 ash trees)

10 ash trees good condition	***(19%)***
31 trees fair condition	***(57%)***
13 trees poor condition	***(24%)***

Determine Ash Tree Policy

A comprehensive policy should be adopted that describes how the City intends to manage ash trees in a variety of scenarios and directs the decision-making process. To be cost effective, this policy will need to be established and reviewed periodically.

Proactive Removal: Removing ash trees that are not infested with EAB.

Pros:

o Opportunity to spread removal costs over a longer time frame
o Reduces problem of dealing with many dead and/or hazardous trees at one time
o Opportunity to start replanting process immediately
o Greater flexibility in organizing work schedules
o Ability to utilize ash wood for products or use it as a local source of firewood

Cons:

o Immediate impacts to tree canopy and aesthetics
o Removing healthy ash may create negative feelings within the community
o Does not factor in research that may find an effective control for EAB

Reactive Removal: Removing ash trees which are either infested with EAB or dead.

Pros:

o Delayed impacts to tree canopy and aesthetics
o No negative public perceptions
o Delayed budgetary impacts until EAB arrives
o Further EAB research may offer effective control, minimizing needs for removal

Cons:

o Budget impacts can be severe once EAB arrives
o Replanting funds may not be available due to extreme removal costs

Treatment Options

There are two reasons to treat ash trees.

1. Treating will prolong the ash tree removal process and spread out the cost in removal, replanting and reduce the immediate impact to the landscape.

2. Treating will preserve the ash trees for an indefinite amount of time. As time passes new chemicals may be found to protect trees longer and for less money, and new predators may limit or eliminate EAB. As the first initial large wave of EAB passes through, we may not have to treat trees as often.

The Waupaca Common Council will need to make a decision if, in the long term, it is worth treating trees for survival. Trees should be **considered** for treatment when EAB arrives or when it is found closer than 15 miles from Waupaca.

Annual Treatment of Ash Trees

If the City of Waupaca staff were to treat every existing ash street tree every other year, it would cost over $3,000 annually. (Approximately $10.00/ diameter inch or for a 10" diameter tree = $100 per tree every other year). This contract rate is estimated. It would then be recommended to treat only managed park ash trees that are in good condition. This annual cost would be about $500 annually. This work could be performed by a city staff person if they obtained a certified pesticide applicator license, otherwise the work could be contracted out.

Re-Planting Efforts

Areas of Waupaca hard hit by the windstorm of 2001, such as Swan Park and Granite & East Fulton Street areas, show the impact trees have upon our landscape when many large trees are lost at one time. This is the impact EAB could have upon our community. Pre-emptive tree planting and the re-planting of removed trees should be a major component of the overall EAB plan. Once EAB arrives and gets established, time and money to dedicate to tree planting and care may be difficult to allocate based upon other municipalities experiences, especially those communities which did not, or were not able to prepare.

Re-planting efforts should concentrate on species diversity along streets, parks, and throughout the community as a whole. Along streets the ultimate goal should be set not to plant more than 5% of any one species, 10% of any one genus and 20% of any one family. In the parks, trees not commonly used for street plantings will be the focus. On private property the city will try to inform residents of the many different trees which do well in our climate. Information will be disseminated via the City website and with the help of potential partnerships in the surrounding community. Working with local retailers which sell trees will be important. Retailers will only sell what people buy and an effort must be made to influence people to purchase something other than maples. If a disease or insect wipes out **maple** in Waupaca the way Dutch Elm disease wiped out elm, or EAB is wiping out ash, Waupaca stands to lose nearly **37%** of its street trees and even a greater percentage of trees on private property. At this level we should cease planting maples and focus on other tree species adapted to urban growth.

If all 61 ash street trees were replaced with 1.75 inch bare root trees @ an estimated purchase price of $75.00 each, it would cost approximately $**4,575.00,** not including installation. Replacement of the 54 ash trees in the City managed parks would cost an estimated additional **$4,050.00** in purchase price only. At the current budget level it would take over 5 years to replace all city ash trees with no other tree replacement work taking place.

Possible Budget Impacts

As shown below, existing ash street trees today provide about $4,234.00 in annual benefits (stormwater reduction, energy savings, property value increases, CO2 uptake and improve air quality) as calculated by using the National Tree Benefit Calculator. Managed park trees provide about $5,462 annually.

The method for computing appraised value is the formula method used for large individual trees which exceed the size that is usually transplanted. It is a hybrid of the replacement cost method and a process of extending that cost to larger plants. These guidelines are distributed by the Council of Tree & Landscape Appraisers and are accepted by professionals in the landscape industry and the real estate and legal disciplines.

The formula is as follows:
Tree Value = Base Value x Cross Section Area x Species Class x Condition Class x Location Class

List of projected street tree value (61 ash trees)
Appraised Value - $91,850
Annual Benefits - $4,232

List of projected managed park tree value (54 ash trees)
Appraised Value - $132,562
Annual Benefits - $5,462

Possible Total Expenses - STREET TREES - (61)

Remove all Street Ash Trees ($15.00 per DBH -contracted) -	**$ 7,485.00**
Stump Removal ($30 per stump contracted with city cleanup) -	**$ 1,830.00**
Replant purchased street trees (doesn't include staff time) -	**$ 4,575.00**
TOTAL	**$13,890.00**

Possible Total Expenses - MANAGED PARK TREES - (54)

Remove all Managed Park Ash Trees ($15.00 per DBH -contracted) -	**$10,860.00**
Stump Removal - ($30 per stump contracted with city cleanup)	**$ 1,620.00**
Replant purchased managed park trees (doesn't include staff time) -	**$ 4,050.00**
TOTAL	**$16,530.00**

Ash Trees on Private Lands

City staff will disseminate information regarding EAB to property owners via the City of Waupaca website and other media. The City Forester (Director of Public Works or designee) has the authority to condemn dead, diseased and/or hazardous trees on private property. It is then up to the property owner to remove and dispose of the tree at their cost. Wood may be stored on the landowners property but they should be made aware that it is not recommended to move offsite in attempt to continue to slow the spread of EAB should the wood be infested. Wood may be moved to a local disposal site.

Wood Debris

Once EAB gets established in Waupaca, the vast majority of the ash trees will be killed. This could generate a large volume of wood debris. The City will need to evaluate if the area at the WRRCC can accommodate the large amount of wood waste. Getting a better idea of how many ash are on private property in the entire Waupaca urbanized area may aid in making the decision on the size of the drop off site the WRRCC needs. Ways to dispose of private infested ash wood should be further explored. Note that the WRRCC would take woody debris from the entire Waupaca area including the adjacent townships.

Update City Ordinances

The City of Waupaca forestry related ordinances as a whole should be reviewed. Language regarding EAB should be created and incorporated. Currently EAB is covered in broad terms in section 10.10.

City Resources

Relying on past history, it is estimated that the Street & Parks Department staff have the ability and time to remove some trees while other trees may need to be removed by a contractor. Hazardous and large tree removals are what private contractors primarily assist with. The city may need to consider an increase in the contracted work annually for added tree removals and stump grinding.

Other Issues

1.) There is a need for updated chainsaw safety training for employees. Many employees have taken the beginner safety course, but there is a need for more advanced training. Training from our insurance carrier and through the DNR Urban Forestry should be considered. They would need to provide beginner and advanced chainsaw training. An increase in the annual budget funding for these classes would be required. Grants may be available for this training as well.

2.) If city employees are assigned to aid in ash tree removal, additional training may be needed.

3.) Clear communication and coordination would be important for effective EAB management.

4.) The WRRCC currently accepts and manages wood waste. EAB wood waste management may impact future WRRCC budgets.

5.) Lakeside Cemetery is severely underfunded for tree removals. There have been large numbers of red oak that have died from oak wilt in the past decade. Budget limitations have only allowed for the removal of 3-5 trees per year. There are currently a number of dead oak that need removal. These are currently a number of high risk trees that may cause human injury or damage to monuments when they fall. Although the number of ash trees is not as large, budget limitations will also delay their removal.

Serious consideration should be given for budget increases for tree removal in the cemetery. The majority of tree removals at the cemetery are done with local contractors because of the risk for damage to nearby monuments.

All of the above listed recommendations would also prove very beneficial in regards to the City's storm preparedness and overall day to day operations.

Community Outreach and Education

Proper communication and education will enable the City the ability to make proper decisions and mitigate potential negative reactions. Once EAB is thought to be found, a sample will be sent to: Emerald Ash Borer Program, WI DATCP, P.O. Box 8911, Madison, WI 53708-8911, or photos can be emailed to DATCPEmeraldAshBorer@wisconsin.gov, attention Melody Walker for confirmation. DATCP can be reached by phone at 1-800-462-2803. Upon confirmation by DATCP, local officials will be notified, and then the media. After confirmation of EAB in Waupaca County or the City of Waupaca, the County will have quarantines placed on it in accordance to the State of Wisconsin response guidelines. USDA and DATCP will work with State officials, and affected communities and industries to minimize the impact of quarantines. State regulations would need to be followed on movement of wood products and all options for mitigating EAB impact would need to be reexamined.

- The City of Waupaca's webpage www.cityofwaupaca.org will provide links and answer potential questions for residents.
- DNR EAB and firewood brochures will be made available to residents.
- Press releases will be made to the local media.
- Educate residents and staff on monitoring for EAB.
- Have all ash trees plotted on a GIS map.
- Make residents aware of importance of diversity of trees/shrubs, and find a way for residents to want these trees/shrubs. This will require partnerships with Friends of the Parks, use of the monthly city newsletter in water billings and retail outlets.

Conclusion

A well-planned response can minimize the impact, reduce liability, spread out costs and lessen the overall cost of EAB. Because the impacts of EAB can be acutely high, many communities have chosen to soften the blow through gradual, prioritized, preemptive removal of some of their public ash trees. Many communities also want to retain some of their ash tree canopy for the important environmental, social and economic benefits it provides. Ongoing advances in EAB insecticide research make selective application of insecticide an increasingly viable and cost-effective option. After communicating with other city departments, elected officials and the public, a final draft of this document will act as the City of Waupaca EAB Management Plan, BUT the plan will remain actively fluid and open to change as more is learned about EAB. The city forester will communicate updates regarding EAB.

GOALS & RECOMMENDATIONS
FROM
2015 CITY OF WAUPACA EMERALD ASH BORER MANAGEMENT PLAN

1. Establish easy access on the City website for the public concerning all aspects of city forestry including recommended trees for planting, pest and disease information, EAB program, City Forester contact information, WDNR contact information and updated ordinances.

2. Update tree inventory on city GIS mapping incorporating annual tree planting and tree removal.

3. Increase annual tree removal and replanting, especially ash trees.

4. Consider the pros and cons of treatment of all ash trees rated "good" to preserve them while not treating ash trees rated "fair" and "poor" according to the current street and managed park ash tree inventory

5. Review replacement or elimination of the Main Street 16 ash trees as planning for Main Street Reconstruction Project continues

6. Increase species diversity during annual planting especially by limiting the number of maples planted annually

7. Provide annual chainsaw safety and tree pruning training

8. Establish an estimate of ash trees on private property and unmanaged city park lands.

9. Update City tree related ordinances as well as the EAB Management Plan.

10. Evaluate wood disposal site options with the WRRCC to identify a preferred site for increases in woody debris management and storage as it relates to EAB

11. Update the risk tree condition assessment for all city trees

12. Increase the annual forestry budget to provide funding for the above activities

RESOLUTION IMPLEMENTING
CITY OF WAUPACA EMERALD ASH BORER (EAB) MANAGEMENT PLAN

WHEREAS, the City of Waupaca, Wisconsin is concerned by the threat caused by the insect commonly known as the Emerald Ash Borer (Agrilus planipennis) to the City of Waupaca's ash tree population; and

WHEREAS, an Emerald Ash Borer (EAB) infestation is both an environmental and economic threat to the City of Waupaca; and

WHEREAS, the City of Waupaca's trees, woodlots, trails, landscapes, natural areas and right-of- ways represent a valuable and precious asset, necessary to preserve: and

WHEREAS, taking a proactive approach to an EAB infestation will enable the City of Waupaca to address public and private needs in an efficient and effective manner; and

WHEREAS, the City of Waupaca will endeavor to distribute the costs associated with certain and massive tree death over a manageable time period, as well as lessen the economic impact that such an extensive loss will have on the quality of life in our community.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF WAUPACA, STATE OF WISCONSIN, THAT:

SECTION I: The City of Waupaca will implement its adopted **Emerald Ash Borer Management Plan (EAB Plan)** that outlines the ash tree assets of the City of Waupaca; defines the management options for ash trees; and details the budget for implementation of the management plan.

SECTION II: The **EAB Plan** will comply with all Wisconsin Department of Agriculture, Trade and Consumer Protection related regulations for handling regulated ash tree related materials upon EAB detection in Waupaca County.

SECTION III: As the annual budget permits, all removed public ash trees will be replaced with non-host species trees that will enhance the planting site, and add to the diversity and general health of the urban forest as outlined in the **EAB Plan**.

SECTION IV: The City of Waupaca will create and maintain an EAB Informational Page on the City of Waupaca's website. The City of Waupaca will provide information to assist residents with the pending infestation and also provide a list of non-host species replacement trees that may be purchased and planted on private property within the City of Waupaca.

SECTION V: When EAB is detected in City of Waupaca, ash trees will be managed in accordance with the guidelines outlined in the **EAB Plan**.

SECTION VI: This Resolution shall take effect immediately upon its adoption.

Passed and Approved: April 8 , 2015