CITY OF WEST DES MOINES
CITY COUNCIL MEETING COMMUNICATION

DATE: February 9, 2015

ITEM: Motion – Approval of Amendment to Emerald Ash Borer Management Plan

FINANCIAL IMPACT: Costs related to Emerald Ash Borer (EAB) management will be determined yearly and will be included in the Parks and Recreation Department's annual budget request. They will not be any higher than those included in the original 2014 plan. In fact, staff anticipates that costs will be significantly lower than the 2014 projection due to treating trees rather than removing them. All treatment and a large percentage of pre-emptive removals will be done in-house by existing staff to further lower costs.

BACKGROUND: The plan prepared in 2014 is being amended to reflect current direction from Council which is supported by feedback received from the public during a public meeting held in November. The plan will be used to manage the 1,079 ash trees on public property as of February of 2015. Major changes to the plan are summarized below:

1. The plan has been updated with the most current locations of EAB infestations in Iowa. There are now 18 counties with confirmed infestations.
2. A change was made to reflect current Department responsibilities with the transfer of street tree management from Public Works to the Parks and Recreation Department.
3. The Public Tree Assessment section has been updated with the most recent inventory information.
4. The Private Trees section was revised to further emphasize that property owners are responsible for removal of dead, diseased, or insect-ridden trees on private property. It also references the role of Code Enforcement in dealing with private property trees.
5. A revised Management Plan section reflects the direction from Council which aligns with feedback received from the public. Management methods include the following:
    - Pre-emptive Removal: Trees that do not meet treatment criteria (approximately 511 trees as of 2/1/15).
    - Chemical Treatment by City: Trees that do meet treatment criteria of being greater than or equal to 10" diameter, good/fair condition, and low/medium hazard (approximately 568 trees as of 2/1/15).
    - Chemical Treatment by Property Owner: Trees identified for pre-emptive removal only due to the tree being less than 10" diameter (approximately 51 of 511 trees identified for removal as of 2/1/15). Treatment of these trees will be voluntary, and will require a permit from the City.
6. As mentioned above, detailed costs were taken out of the plan as these will be updated as part of the annual budget request. This Resolution is for repair and replacement of portions of existing concrete trail located in several areas of the city. The locations are shown on the attached map. The areas being addressed were identified as a high priority following the inspection of the entire trail system in the fall of 2013 by City staff.

OUTSTANDING ISSUES: None.

RECOMMENDATION: That the Council approve the Motion.

Lead Staff Member: Sally Ortgies

STAFF REVIEWS

Department Director	
Appropriations/Finance	
Legal	
Agenda Acceptance	RTJ

PUBLICATION(S) (if applicable)

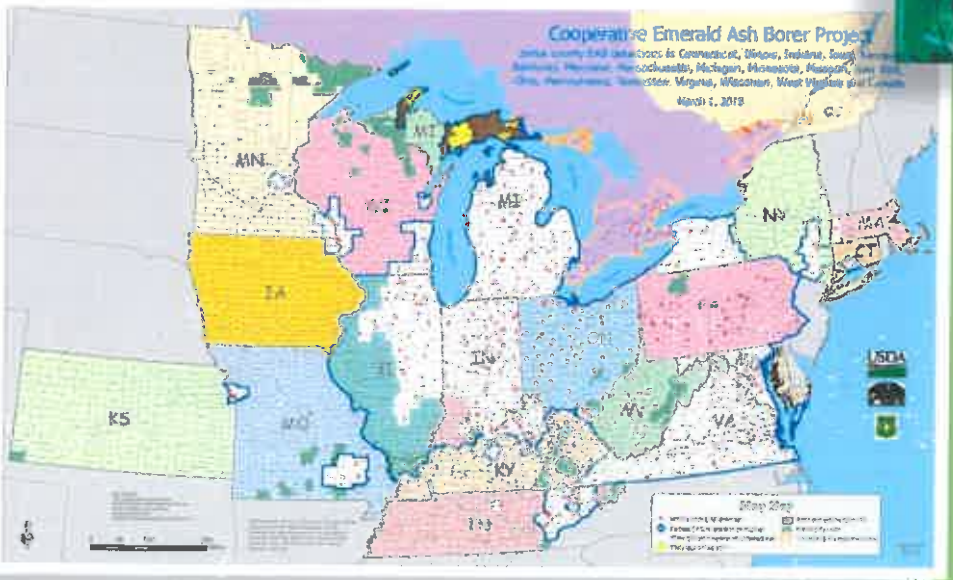
Published In	N/A
Dates(s) Published	

SUBCOMMITTEE REVIEW (if applicable)

Committee	Public Works		
Date Reviewed	2/2/15		
Recommendation	**Yes**	No	Split

2015

EMERALD ASH BORER MANAGEMENT PLAN



Department of Public Works & Department of Parks and Recreation
City of West Des Moines

January 2014

Revised February 2015

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1. Introduction

1.1 Purpose

The intent of this management program is to mitigate the damage and cost associated with infestation of the Emerald Ash Borer (EAB). This cooperative effort by the Department of Public Works and Department of Parks and Recreation is a proactive approach and enables the City to address public and private needs in an efficient and effective manner. The City will attempt to distribute the costs of this plan over a manageable time period, and lessen the social and economic impact on the community. It is anticipated that no State or Federal assistance will be made available to local governments to deal with the impacts of the EAB.

1.2 Applicability

This program is applicable to ash trees located on any public property, right-of-way, or other areas as defined in Title 7, Chapter 10 of the West Des Moines City Code. This program does not apply to private properties unless such trees are deemed a nuisance and may negatively impact public right-of-ways, other properties, or pose a threat to public safety.

1.3 Administration

The City Forester shall be responsible for implementation and execution of this program. As per the aforementioned Code section the City Forester is defined as the City Manager or his/her designee which is the Urban Forestry Supervisor in the Parks and Recreation Department.

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2. Background

2.1 Emerald Ash Borer (EAB)

The emerald ash borer (EAB), Agrilus planipennis (Coleoptera: Buprestidae), is an invasive species of beetle indigenous to Asia as shown in Figure 1. In North America, EAB is capable of infesting all ash trees in the genus Fraxinus, including green ash (F. pennsylvanica), white ash (F. americana), black ash (F. nigra), pumpkin ash, (F. profunda), blue ash (F. quadrangulata), and other native species in this same genus (USDA-APHIS, 2011). The beetle larvae feed on the phloem tissue and cambial layer of the tree, destroying the ability to transport water and nutrients eventually killing the tree (MDA, 2007). Unlike many other wood boring beetles, EAB aggressively kills healthy and stressed trees; some dying as soon as two to three years after becoming infested (NYSDEC, 2011). Currently, EAB has no known natural enemies in North America. If it is not contained or its effects mitigated, this pest will continue to infest and kill all species of trees in the genus Fraxinus. The impact on ash in North America has been compared to the effects of chestnut blight and Dutch elm disease, which devastated rural and urban forests in the 20th century.

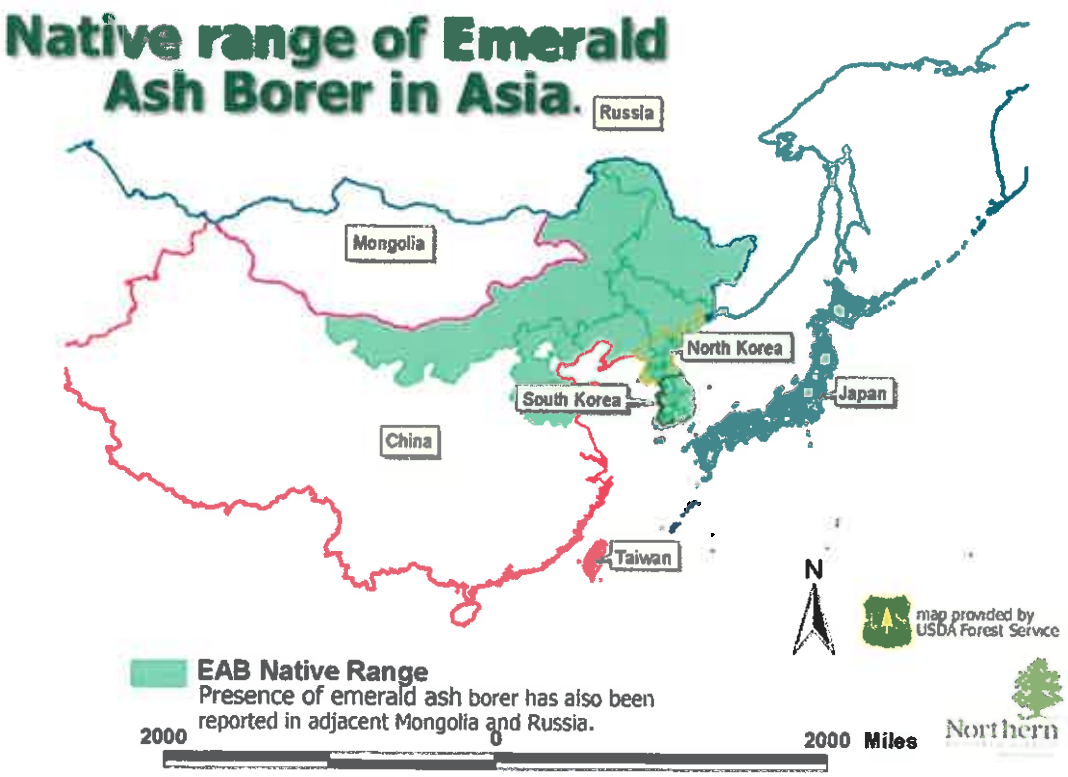


Figure 1 - EAB Native Range (USDA Forest Service)

2.2 Location

EAB was first detected in southeastern Michigan in 2002 and is believed to have arrived in North America on solid wood packing material from China (USDA-APHIS, 2011). Since then, EAB has spread to 18 states and Canada as shown in Figure 2. This spread has been attributed to both natural movement and human transport of infested ash firewood, logs, lumber, and nursery stock. To limit the human induced spread of the beetle, state and federal agencies have imposed quarantines and regulations on the transport of ash trees and ash wood products.

The first confirmed occurrence of EAB in Iowa was in May 2010 in Allamakee County on an island in the Mississippi River. Despite extensive trapping and the examination of hundreds of declining ash trees the pest was not seen again until July 2013 in Burlington, Iowa. Since then, EAB has been confirmed in an additional 17 Iowa counties. The entire state of Iowa was placed under quarantine in February 2014. Three of the most recently confirmed counties, Jasper, Boone, and Story Counties, have placed the threat on the metro area's doorstep.

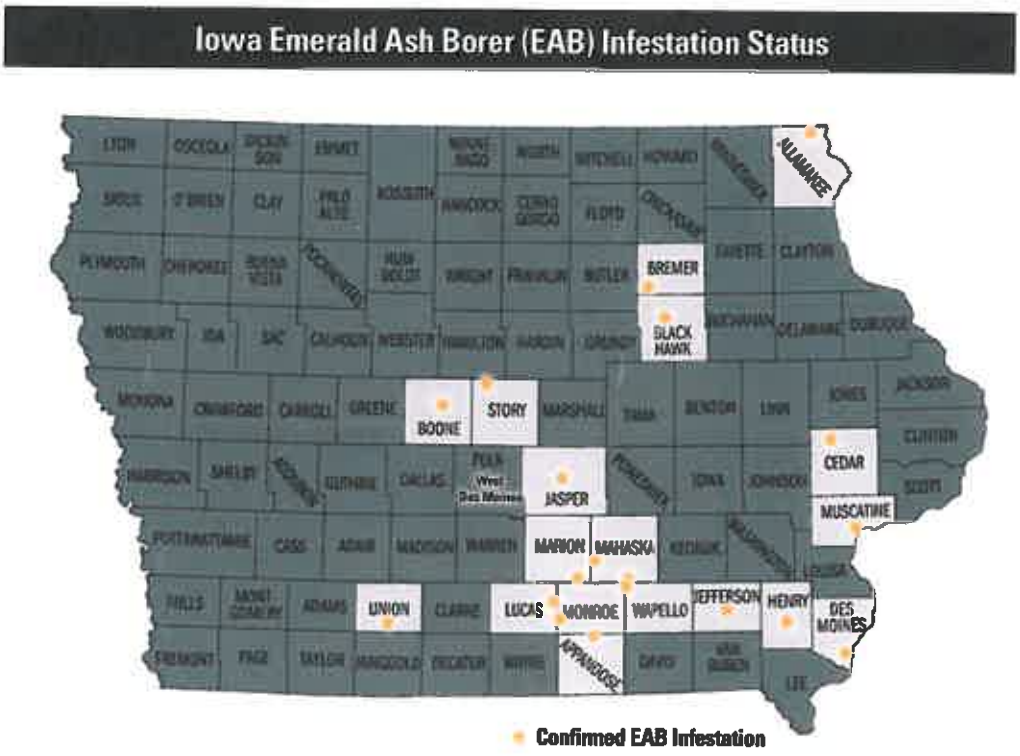


Figure 2 – Iowa EAB Infestation Status (January 2015)

2.3 Impacts

To date, it is estimated the EAB has killed 50-100 million ash trees in North America and it is expected to continue to progress across the continent. Based on the experiences of previously affected areas, decline of ash trees infested with EAB has followed a relatively consistent progression. As shown in Figure 3, during the first 4-5 years of infestation few trees exhibit significant loss of canopy or death making initial detection difficult. In general, by the time EAB infestation is identified, the beetle is well established and has inflicted irreversible damage to the tree. Worse, because the decline function of ash is exponential, the most rapid mortality rate often occurs within 2-3 years of initial detection. Within 10 years of detection mortality rates approach 100 percent.

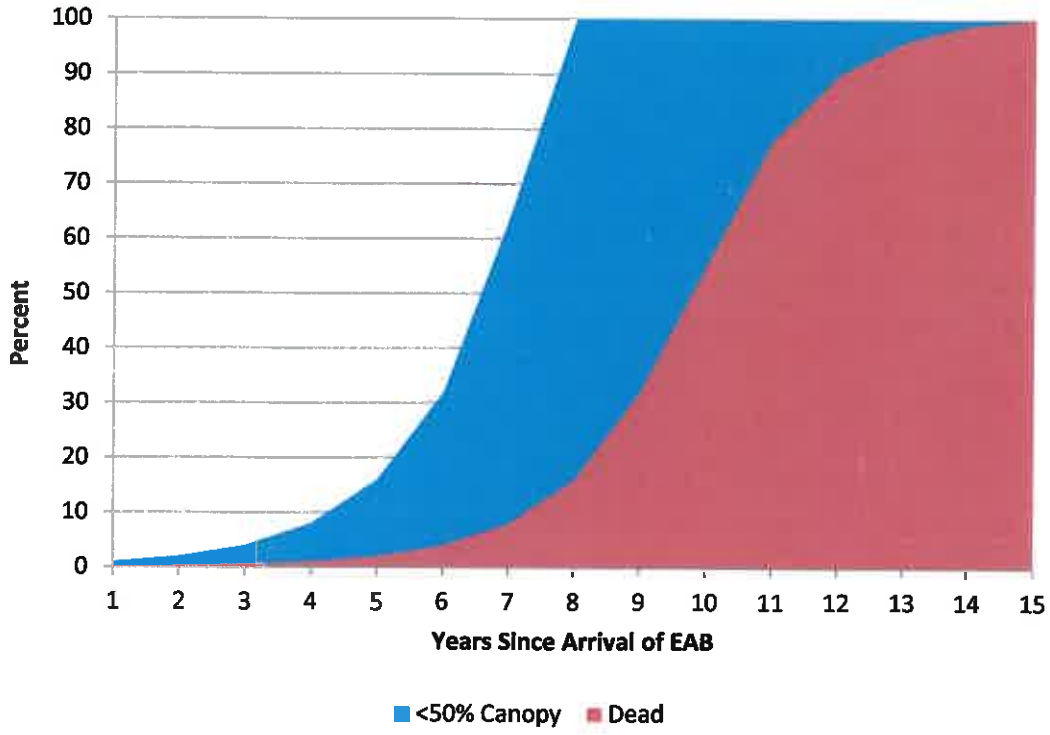


Figure 3 - Ash Tree Decline Due to EAB

As the health of an infested tree declines additional health and safety issues arise. As they die ash branches become brittle making them more susceptible to random breakage or windstorms increasing the potential for damage claims. Standing dead or dying trees still harbor EAB larvae, extending the duration of infestation, as well as other pests potentially creating a nuisance. Widespread dead or dying trees creates a visual nuisance likely resulting in citizen complaints.

2.4 State Readiness Plan

Due to the potentially catastrophic impact of EAB, the State of Iowa has developed the Iowa Emerald Ash Borer Readiness Plan included in Appendix B. This plan outlines the roles and responsibilities of State agencies in dealing with EAB as well as the procedures for ongoing monitoring and investigating suspected infestations. The plan does not outline the specifics of regulatory requirements following a confirmed infestation, nor does it identify any State assistance other than technical expertise.

3. Inventory and Assessment

3.1 Public Tree Inventory

In order to prepare for a possible EAB infestation and estimate the potential impact to the City, the Department of Public Works and Parks and Recreation Department completed an inventory of public trees from 2011 to 2012. The street tree inventory was updated by the Urban Forestry Supervisor in 2014. Generally, public trees fall into one of four categories: street trees, parks and open space, City facilities, and greenways/natural resource areas.

3.1.1 Street Trees

Street trees are located within street right-of-way and other undeveloped property owned by the City. These trees are maintained by the adjacent property owner in accordance with City Code. State Code requires the City to be responsible for removal of dead, diseased, or dying trees located within the public right-of-way. Prior to June 2014, the Department of Public Works was responsible for monitoring street trees for compliance with City Code and removal of street trees when necessary. With the hiring of the Urban Forestry Supervisor, the Parks and Recreation Department is now in charge of street trees along with all other public trees.

3.1.2 Parks and Open Space

Trees in public parks and open space are maintained by the Parks and Recreation Department. These areas include developed parks and open spaces designed for use by the public and not designated as greenway or natural resource area. Trees in landscaped medians are included in this category.

3.1.3 City Facilities

Trees in Jordan Cemetery and surrounding City Hall, West Des Moines Public Library, the Law Enforcement Center, Public Safety Stations, and other City facilities are maintained by the Parks and Recreation Department. This category also includes public parking lots and streetscaping in the Valley Junction Business District. These facilities require a certain number of trees in accordance with the landscaping requirements of the applicable zoning regulations.

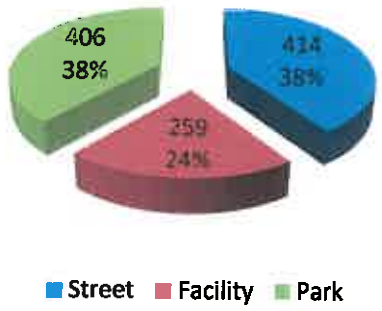
3.1.4 Greenways and Natural Resource Areas

Greenways and natural resource areas are intended to be limited maintenance areas. Generally, greenways are located near floodplains or wetlands and act as a buffer from development. Both greenways and natural resource areas tend to have dense tree growth. Due to their limited maintenance requirements these areas were excluded from any public tree inventories. The Department of Public Works

and Parks and Recreation Department share maintenance responsibilities in greenways and natural resource areas.

3.2 Public Tree Assessment

As of January 2015, there are a total of 1,079 ash trees on public property. As identified in the public tree inventory approximately 414 public street trees are varieties of ash. Another 406 ash are located in parks and open space and 259 are found around City Facilities.



3.2.1 Size

The diameter of each public tree was measured approximately 4.5 feet above ground. This measurement is referred to as diameter at breast height (DBH). The size distribution of public ash trees is shown in Figure 4. Nearly 43% of public ash trees are 10 inch diameter or less and another 45% are 20 inch diameter or less. These values are critical in determining the approximate removal costs of infested trees, as well as, identifying trees to be treated.

Figure 4 - Ash Size Distribution

3.2.2 Condition

Condition of each tree was assigned using the following criteria:

Table 1 - Condition Class for Shade Trees

Condition Score	Category	Description
4	Good	Healthy and vigorous. No apparent signs of insect, disease, or mechanical injury. Little or no corrective work required. Form representative of species. Minimum life expectancy 20 years.
3	Fair	Average condition and vigor for the area. May be in need of some corrective pruning or repair. May lack desirable form characteristics of species. May show minor insect, disease, or physiological problems. Minimum life expectancy 10 years.
2	Poor	General state of decline. May show severe mechanical, insect, or disease injury, but death not imminent. May require major repair or renovation. Minimum life expectancy 5 years
1	Dead or Dying	Dead, or death imminent within 5 years.

As shown in Figure 5, nearly 43% of public ash trees are considered to be in good condition. Another 48% are considered to be in fair condition. The condition category will be used to identify trees to be treated and to prioritize pre-emptive removals.

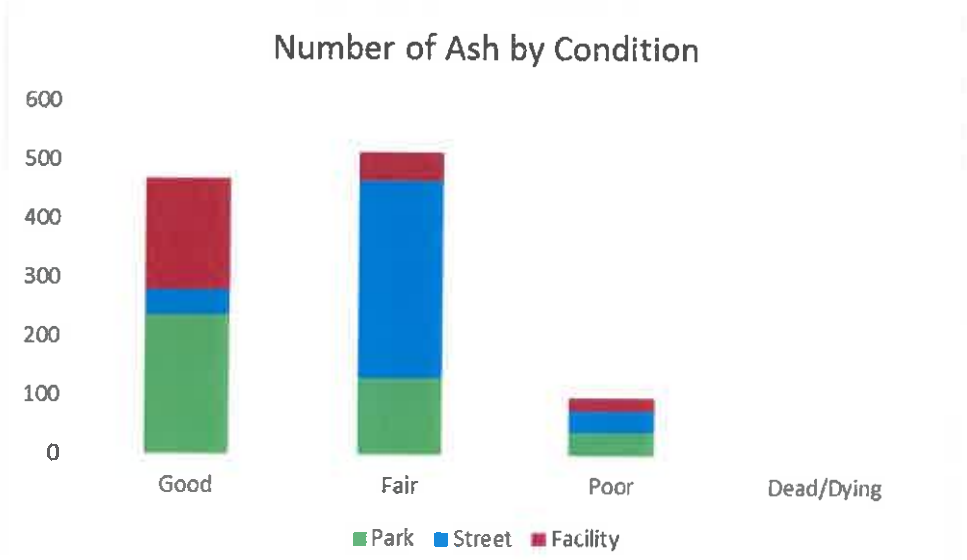


Figure 5 - Ash Condition Distribution

3.3 Private Trees

The City acknowledges that there are numerous ash trees on private property. Currently, the City has no reliable inventory for ash trees on private property. Without such an inventory, assessing the magnitude of the effort required to completely address the possible destruction caused by the Emerald Ash Borer is not possible. It is the intent of the City to enforce the tree ordinance concerning removal of trees and stumps. Enforcement of the tree ordinance as it relates to private property trees will be handled by Code Enforcement Officers in the Police Department. The Parks and Recreation Department will assist in the determination of a tree being a nuisance or hazard. Removal of dead, diseased, or insect-ridden trees on private property that are deemed a nuisance or a hazard is the responsibility of the property owner.

Property owners are urged to monitor the EAB movement. Unless deemed a nuisance or hazard, the decision to maintain, remove, or treat ash trees on private property rests with the property owner. The City does encourage property owners to replace trees lost as a result of EAB with an appropriate landscape tree on private property. The City will provide a list of appropriate trees available to property owners.

4. Management Plan

In the event of an infestation the City, and likely the entire Des Moines Metropolitan area, will be working under the direction of the United States Department of Agriculture (USDA), the Iowa Department of Natural Resources (IDNR), and the Iowa Department of Agriculture and Land Stewardship (IDALS). As EAB continues to spread throughout Iowa, State and Federal resources are expected to be spread thin trying to deal with cities and communities throughout the state. Therefore, it is necessary that the City has its own strategy to compliment State efforts in dealing with EAB. The proposed EAB management strategy includes: Monitoring, Pre-Emptive Removal, Chemical Treatment, Wood Utilization and Disposal, Infested Tree Removal, and Tree Planting.

4.1 Monitoring

Monitoring is the first step towards managing EAB. As outlined in the Iowa Emerald Ash Borer Readiness Plan, IDNR and IDALS are the lead agencies in statewide monitoring, identification, and notification for EAB. These agencies have utilized visual surveys, sentinel trees, and traps to monitor movement of the pest. In the event these agencies identify a confirmed EAB infestation they will work with local governmental officials to prepare and distribute a media release to inform the public of the EAB find.

4.2 Pre-Emptive Removal

Pre-emptive removal refers to taking trees down prior to being infested with EAB. If these removals are completed prior to the arrival of EAB it may lessen future budget impacts and help slow the spread to other properties. The advantage to this approach is that removals can be completed in a systematic and potentially lower cost manner as removal costs are expected to increase dramatically following infestation. Removal is prioritized based on several criteria including location, condition, size, and hazard level. A total of 94 ash trees were pre-emptively removed in 2014.

4.3 Chemical Treatment

There are effective chemical treatments available that are proven to control EAB. Chemical injection treatments will be used by the City in cases where public ash trees meet certain criteria. Trees identified for treatment will not be located on arterial streets. Treated trees will be in good or fair condition and have a low or medium hazard level. Generally, treated trees will be greater than 10" in diameter. In addition to protecting trees that meet these criteria, treatment can also be used to delay removals and maintain trees long enough to safely remove them as part of a structured removal program.

Public street trees that do not meet the size criteria of 10" or greater diameter, but do meet all other treatment criteria, may be treated by the abutting property owner at the property owner's expense.

4.4 Infested Tree Removal

In the event EAB is confirmed in the Des Moines Metropolitan area infested trees may require removal in a timely manner in order to limit potential liability depending on the location. The City will strive to remove infested trees within one year of death. In the event the City contains the initial infestation for the county, IDNR and IDALS procedures must be followed.

Infested ash tree removal would be prioritized by:

- High: trees located on arterial and collector streets, or in parks and facilities near structures, playgrounds, and other heavily used facilities.
- Moderate: trees located on local streets and alleys, or in parks and facilities near parking lots, access roads, trails and utilities.
- Low: trees located in parks and facilities that are not considered high or moderate priority locations.
- No Removal: trees located within greenways or natural resource areas.

4.5 Wood Disposal and Utilization

Since the entire state of Iowa was quarantined in February of 2014, there are no restrictions on the transport of ash wood debris within state borders. Standard methods of disposal will be utilized for ash trees that are removed with much of the wood being chipped for use as mulch throughout the park system. Firewood will also be made available to residents.

4.6 Planting and Reforestation

Replanting of removed trees will be required in certain areas. Replanting of street trees by the City is not being recommended. However replanting is suggested in the following areas:

4.6.1 City Facilities

Since many of the ash trees surrounding City facilities were planted as a landscaping requirement of the zoning regulations, removed trees will be required to be replaced. The location of the replacement may be adjusted from the original location of the ash tree. A variety of species will be used to increase the diversity of trees on City property. The goal is to replace City facility trees within one year of removal.

4.6.2 City Parks

In most cases, ash trees in parks were not planted as part of a landscaping requirement. However, trees provide important benefits in parks and open spaces including shade, beauty, soil and water conservation, wildlife habitat, screening and reduction of air pollution. Ash trees removed from parks and open spaces will be replaced. Similar to City facility tree replacements, the location may be adjusted and a variety of species will be used. The goal is to replace park and open space trees within two years of removal.

4.6.3 Medians

Trees in landscaped medians within right-of-way owned by the City have been planted to visually enhance major street corridors as part of an overall streetscape plan. Ash trees removed from landscaped medians will be replaced with a variety of other tree species that fit with the streetscape plan. The goal is to replace median trees within one year of removal.

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5. Communication and Outreach

Resident extension and outreach will play an important role in educating the public and raising awareness of EAB. Residents will be encouraged to have their trees inspected if they suspect EAB. Emerald Ash Borer information has been made available on the City's webpage and this information will be updated as more information becomes available. Articles have been included in the WDM Magazine and information has been distributed on social media.

Informational meetings have been scheduled on a neighborhood level. A public meeting was held in November of 2014 with invitations being sent to every property owner with an ash tree in the street right-of-way abutting their property. Door hangers may be developed to advise residents of treatment and removal activities in their neighborhood.

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6. References

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