



CITY OF
Ames[™]



**EMERALD ASH BORER
RESPONSE PLAN**

**URBAN FOREST DIVERSIFICATION
& REFORESTATION PROGRAM**

The Emerald Ash Borer (EAB) infestation that is moving across the country is now imminent in our community. These destructive insects were recently confirmed in Boone and Story City. Lessons learned in other parts of the country demonstrate that, without costly ongoing treatment, EAB will wipe out our population of ash trees within a decade.

This impending infestation is the second blight to befall Ames' urban forest in many of our citizens' memories. During the 1970's, the City's many American Elm trees were virtually wiped out by Dutch Elm disease. When that occurred, areas of the community that had previously been lined by stately elm trees were severely impacted. That was followed by an extended period of replanting which continues to this day.

The challenge currently facing Ames is not only to respond to the impending loss of our 2,355 public ash trees (not to mention the thousands of privately owned ash trees). Given the likelihood of other blights and insect infestations in future decades, it would vastly improve the long-term health of our urban forest if the City turns the EAB challenge into an opportunity to proactively diversify and reforest the City's inventory of publicly owned trees.

City staff has completed an inventory of all trees in City rights-of-way, in maintained areas of the City's parks (including along paved trails), and at most City-owned facilities. That inventory is currently being used to develop an overall tree management plan for the City. With assistance from an IDNR grant, that overall tree management plan is nearing completion. That document will include goals and recommendations for the estimated 15,000 City-owned trees.

GOAL

To extend the environmental, social, and economic benefits of our ash trees, and to increase the diversity of the urban forest, while being fiscally responsible to our citizens.

EAB RESPONSE PLAN

The most urgent short-term priority is to deal with the impending EAB infestation. With the above goal in mind staff identified three areas where an overall EAB plan is needed to deal with the impending infestation.

1. City trees on public property
2. Private trees in utility easements
3. Private trees on private property

1. Response Plan for City Trees on Public Property

To best manage the impending infestation based on the above goal, a phased treatment and removal process will be implemented for public trees. This strategy would involve removing certain ash trees within the first five years based on public safety, tree defects, size, and benefit/costs. The remaining ash trees would be treated every three years.

The City would set a goal for removals every year to assist in spreading out costs over a longer time period while extending the environmental, social, and economic benefits of our ash trees as stated in our goal. Another reason for this approach is to allow staff to reevaluate the plan regularly to make sure the overall goal is being met. This strategy would include a phased approach on streets lined with ash to spread out the impact of removals. The goal of the phased removal process would not be to save the ash trees that are still healthy at this time. Rather, it would be to meet the specified goal of extending their social and environmental benefits, and beginning a diversified reforestation effort while being fiscally responsible.

a) Public Outreach

A vital part of this plan will be extensive public outreach on the Council's approved plan and its impact on our citizens and businesses. This objective of this outreach will be to build understanding of the City's long-term goal and how the phased actions will help accomplish it.

Staff will implement a variety of ways to reach property owners and citizens. This will include a multi-step integrated public awareness campaign that focuses on public education of both the problem and the opportunity, and that invites public input throughout the implementation phase. Tools will include attending neighborhood meetings, one-to-one discussions, civic outreach, posting trees, door hangers, email, websites, social media, etc.

In addition, staff will promote educational outreach for owners of private ash trees. This will include how to identify ash trees, private removal and treatment options, and suggestions on how to hire reputable tree contractors.

b) Removals

Removals of public trees include prioritizing trees for removal based on several factors. The first priority would be any hazardous ash trees. The second priority would be any ash trees that are not considered good candidates for treatment. Based on our inventory, trees were identified as any ash tree showing a “defect.” These defects could be the poor condition of the tree, or external factors including sidewalk damage and power line presence. Since these trees would be most susceptible to infestation and/or are not candidates for treatment, they would need to be removed within three to five years for public safety. Based on the defect information collected with the initial tree survey, staff was able to estimate the number of ash trees to remove in this category.

Under this second priority, all smaller ash trees that are at a 6-inch Diameter at Breast Height (DBH) measurement or less will be removed. This is due to the higher life cycle cost for treating these smaller trees in relation to the limited canopy benefits compared to larger trees.

The adopted 20-year plan recommends removing all defect trees in five years and all trees 6-inch DBH and less trees in four years. Removal of the small trees will be staggered to avoid removing all of the trees at one time on streets that are predominantly lined with ash. Over the longer term, the plan assumes that all trees 18-inch DBH and less can be removed by City staff, and that private contractors will be needed to remove all trees larger than 18-inch DBH.

Chapter 27 has been modified to provide staff with administrative authority to hear limited appeals of the removal process. The appeal process is outlined in Appendix A.

c) Treatment

The Response Plan includes chemical treatment of many mature ash trees to extend their lives until an orderly replacement can occur. For treatment, only trunk injection will be allowed for public trees. This is due to the stormwater and groundwater benefits of injection versus soil drenching options. Treatment is not being proposed for trees 6-inch and less, since trunk injection is more difficult for those trees and other treatment options would not meet the stormwater benefits of trunk injection.

At a later date City staff could also become trained to perform treatment for the trees. If done within the existing staff capacity, it is anticipated that costs could be 50% lower than shown for contracted prices. That approach, however, would need to be balanced with the larger, concurrent need to utilize staff to remove trees. The recommendation at this time is to contract for treatment.

d) Detailed Quantity and Cost Estimate Information

The following tables show the 20-year EAB removal plan and its estimated impacts. Table 1 shows the removal of 2,355 trees in both the right-of-way and in City parks and facilities over the next 20 years. Year 1 is the City’s current (2014/15) fiscal year.

Table 1

| Year | Removals | | Treatment | |
|--------|--------------|--------------------|--------------|--------------------|
| | Right-of-Way | Parks & Facilities | Right-of-Way | Parks & Facilities |
| 1 | 226 | 20 | 795 | 480 |
| 2 | 226 | 20 | 0 | 0 |
| 3 | 226 | 20 | 0 | 0 |
| 4 | 220 | 21 | 792 | 480 |
| 5 | 102 | 4 | 0 | 0 |
| 6 | 55 | 36 | 0 | 0 |
| 7 | 52 | 32 | 685 | 410 |
| 8 | 52 | 32 | 0 | 0 |
| 9 | 52 | 32 | 0 | 0 |
| 10 | 52 | 32 | 529 | 314 |
| 11 | 52 | 32 | 0 | 0 |
| 12 | 52 | 32 | 0 | 0 |
| 13 | 52 | 32 | 373 | 218 |
| 14 | 52 | 32 | 0 | 0 |
| 15 | 52 | 32 | 0 | 0 |
| 16 | 52 | 32 | 217 | 122 |
| 17 | 51 | 31 | 0 | 0 |
| 18 | 51 | 30 | 0 | 0 |
| 19 | 51 | 30 | 0 | 0 |
| 20 | 64 | 31 | 0 | 0 |
| Totals | 1792 | 563 | | |

Table 2 includes the reforestation effort and shows the estimated cost impact for both City forces and contracted services.

Table 2

| Year | Estimated City Labor Cost For Removals | Estimated Contract Labor | | | | Total Contract |
|---|--|--------------------------|-----------|----------------|------------|----------------|
| | | Removals | Treatment | Stump Grinding | Replanting | |
| 1 | \$31,800 | \$102,000 | \$125,000 | \$4,600 | \$0 | \$231,600 |
| 2 | \$32,700 | \$105,100 | \$0 | \$4,800 | \$126,700 | \$236,600 |
| 3 | \$33,700 | \$108,100 | \$0 | \$4,900 | \$65,200 | \$178,200 |
| 4 | \$34,500 | \$99,200 | \$135,400 | \$5,000 | \$65,700 | \$305,300 |
| 5 | \$14,500 | \$91,300 | \$0 | \$2,600 | \$29,700 | \$123,600 |
| FORMAL REEVALUATION OF MANAGEMENT PLAN | | | | | | |
| 6 | \$17,500 | \$57,400 | \$0 | \$3,000 | \$26,200 | \$86,600 |
| 7 | \$17,900 | \$38,200 | \$124,800 | \$3,100 | \$24,800 | \$190,900 |

| Year | Estimated City Labor Cost For Removals | Estimated Contract Labor | | | | Total Contract |
|--------------------|--|--------------------------|------------------|-----------------|------------------|--------------------|
| | | Removals | Treatment | Stump Grinding | Replanting | |
| 8 | \$18,400 | \$39,200 | \$0 | \$3,200 | \$25,400 | \$67,800 |
| 9 | \$18,800 | \$40,200 | \$0 | \$3,200 | \$26,000 | \$69,400 |
| 10 | \$19,300 | \$41,100 | \$103,100 | \$3,300 | \$26,700 | \$174,200 |
| 11 | \$19,700 | \$42,100 | \$0 | \$3,400 | \$27,300 | \$72,800 |
| 12 | \$20,200 | \$43,100 | \$0 | \$3,500 | \$27,900 | \$74,500 |
| 13 | \$20,700 | \$44,100 | \$77,100 | \$3,600 | \$28,600 | \$153,400 |
| 14 | \$21,100 | \$45,000 | \$0 | \$3,600 | \$29,200 | \$77,800 |
| 15 | \$21,600 | \$46,000 | \$0 | \$3,700 | \$29,800 | \$79,500 |
| 16 | \$22,000 | \$47,000 | \$46,700 | \$3,800 | \$30,500 | \$128,000 |
| 17 | \$22,500 | \$42,300 | \$0 | \$3,900 | \$30,300 | \$76,500 |
| 18 | \$22,900 | \$40,300 | \$0 | \$3,900 | \$30,600 | \$74,800 |
| 19 | \$23,400 | \$41,100 | \$0 | \$4,000 | \$31,200 | \$76,300 |
| 20 | \$26,400 | \$59,700 | \$0 | \$4,600 | \$37,300 | \$101,600 |
| Total Costs | \$459,600 | \$1,172,500 | \$612,100 | \$75,700 | \$719,100 | \$2,579,400 |

2. Response Plan for Private Trees in Utility Easements

This element will be adopted at a later time.

3. Response Plan for Private Trees on Private Property

This element will be adopted at a later time.

URBAN FOREST DIVERSIFICATION & REFORESTATION PROGRAM

Although EAB will have a major detrimental impact on our community over the next several years, this challenge also presents Ames with an unexpected opportunity to bring much greater diversity to the public trees in our urban forest.

Our current public tree inventory reveals the following distribution of tree species:

| | | |
|---------------|-------|-----|
| Maple | 3,790 | 26% |
| Ash | 2,355 | 16% |
| Oak | 1,563 | 11% |
| Apple | 972 | 7% |
| Other species | 5,920 | 40% |

As this table demonstrates, our current tree inventory is heavily populated with maple and ash trees. It is important to plant a diverse mix of species in the urban forest to maintain canopy health, since most insects and diseases target a specific genus (ash) or species (green ash) of trees. Current diversity recommendations advise that one genus (i.e. maple, oak) make up no more than 20% of the urban forest, and that a single species (i.e. silver maple, sugar maple, white oak, bur oak) not make up more than 10% of the total urban forest.

Reforestation

This new initiative includes a 20-year program to replant trees on a one-to-one basis for all ash trees removed under the EAB Response Plan. Replanting will allow the City to replace lost canopy and to increase the diversity of our urban forest as stated in the initial goal above. Staff will work with the Urban Forester to identify suitable species for replanting. These species will be planted at a size of 1-1/2 inch, which is optimal for establishment and survival of new trees.

Appendix A: Appeal Process

An appeal process will only be allowed for the removal of ash trees with a DBH greater than 6 inches. No appeal is allowed for the following conditions:

1. For the removal of ash trees 6 inch DBH or less
2. For the City's decision to treat an ash tree
3. For the City's decision to replace any removed ash tree
4. For ash trees being removed due to external factors, such as overhead power lines or sidewalk damage

Appeals for ash trees not listed above may be made based on the health of the ash tree. Appeals may be made only by a property owner adjacent to the public ash tree being removed from the right-of-way. Appeals shall be directed to the Public Works Director or designee.

If an appeal is denied, the property owner adjacent to the ash tree may appeal the Public Works Director's decision to the City Manager or designee with supporting information from a licensed arborist. The decision from this second appeal shall be final.

Appendix B: Cost Assumptions

The following assumptions were used to arrive at estimated costs:

- Removal costs were estimated by the DBH size range of the trees.
- An inflation factor of 3% per year was added to the final costs.
- All rights-of-way, parks, and facility trees are treated equally.
- All numbers are based on the inventory done in the summer of 2012 with additional park areas inventoried in 2014.
- Forested areas are not included. It is assumed those trees will not be removed or treated unless they are deemed to be hazardous to the public. Please note there are a number of non-paved trails through forested areas (e.g., Munn Woods, Brookside Audubon Trail, East River Valley, etc.) that will require trees to be removed for the safety of residents.
- Contracts will include stump grinding for all trees removed by City staff. This cost is reflected in Table 2.