

CITY OF DUBUQUE

EMERALD ASH BORER

READINESS PLAN

2015



THE CITY OF
DUBUQUE
Masterpiece on the Mississippi

Prepared By: City of Dubuque Leisure Services Department

Adopted: January 5, 2015

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EMERALD ASH BORER
READINESS PLAN**

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INTRODUCTION:

The City of Dubuque recognizes the need to be prepared to respond to the presence of the emerald ash borer (EAB), a destructive, highly invasive, non-native insect that has the potential to affect the City's urban forest for years to come.

GOAL:

The goal of this Plan is to identify appropriate and effective response actions to be taken in the event that the EAB is discovered within city of Dubuque limits. These actions include prevention, detection, communication, and management activities. The City is committed to using the best available science and information about the economic, environmental, and social consequences of the available options as the basis for making appropriate management and control recommendations.

OBJECTIVE:

The objective of this Plan is to minimize the destructive effects of EAB on the City's ash tree population. Ash trees are a valuable component of the City's forests. They have been widely planted throughout the city on both public and private properties and grow naturally in wooded areas throughout. The EAB has recently been confirmed within thirty-eight (38) miles of the city of Dubuque border. Taking a proactive approach to this invasion will enable the City to address public and private needs in an efficient and cost effective manner. This Plan will continue to be an evolving document with revisions being made as more information becomes available on the EAB and its control.

BACKGROUND:

The EAB, *Agrilus planipennis*, is a small, slender, elongated (3/4" long, 1 1/8" wide), bright metallic green beetle, native to Asia. It likely arrived in the United States (in Michigan) from China sometime in the mid-1990s, probably traveling with ship cargo. The EAB has a one (1) year life cycle, emerging between May and July. The EAB kills trees relatively quickly and affects North American ash whether healthy or stressed. The EAB deposits eggs on the surface or in cracks of ash tree bark, which hatch in seven (7) to ten (10) days, to release larvae that feed on the tree's inner bark. Within several weeks, this feeding creates S-shaped tunnels in the tree's inner bark that wind back and forth, becoming progressively wider and disrupting the tree's ability to transport water and nutrients, eventually killing the tree. Adult EABs emerge from trees headfirst, creating very small (1/8" diameter) D-shaped exit holes that leave minimal evidence of infestation until the canopy begins to die back. Affected trees quickly decline in the second growing season and are usually dead by the third season.

RESPONSIBILITIES:

The City is responsible only for trees located in planting lawns, right-of-ways, parks, City owned properties, and green spaces. Street trees and trees planted on other developed publically owned properties will be the highest priority. Trees on undeveloped public right-of-ways and properties will be a lower priority. Trees planted by private property owners or trees that have naturally established themselves on the right-of-way where no sidewalk exists are the responsibility of the adjoining property owner. All trees located on private property are the responsibility of the property owner.

The City generally does have the authority to address and remove any possible safety risk to the public, which may be caused by an infested tree located on private property. The City may only address trees on private property which are an immediate danger to the public.

ASH TREE POPULATIONS:

In 2010 the City began developing a street tree inventory of ash trees.

An inventory of ash trees on other City properties, including park areas and other developed properties was completed in the spring of 2014. This combined inventory is currently being updated with current tree health and condition information.

The inventories do not include ash trees in:

- wooded areas;
- along park wood lines;
- undeveloped right-of-ways; and,
- roadside ditches and alleys.

Information from these studies will be used to help guide the City as it addresses the EAB issue.

Public Trees: The City has approximately five thousand five hundred (5,500) deciduous trees located within the planting lawns on City right-of-way; one thousand three hundred (1,300) are ash trees or twenty-four percent (24%) of the street tree population. Four hundred fifty (450) ash trees exist on other City property including parks and green space. The City's right-of-way tree population consists of more than twenty-two (22) species of trees, with maple being the most common genus. The ash tree population in Dubuque can be considered an average age urban forest, with tree diameters ranging from five inches (5") to forty-two inches (42"). The age, percentage, and number of ash trees vary significantly by subdivision.

Private Trees: The City does not have an inventory of privately owned trees. Ash was a go to tree following the days of Dutch elm disease in the 1960s and was used heavily as a landscape tree throughout Dubuque. It is the responsibility of the property owners to follow the regulations and laws pertaining to the disposal of the EAB (if discovered) or the affected tree/wood.

Other Trees: The City's woodlands, hills, bluffs, and river bottoms fall within the native range of three (3) ash tree species. There is no inventory of these trees. Preserving woodland trees is impractical and cost prohibitive.

MONITORING/DETECTION:

Given the City's unique native terrain, there will always be the potential for EAB presence. Ash trees that die back to the stump in woodland areas will re-sprout. This sucker growth will develop and eventually be re-infested by the EAB.

All ash trees should be routinely inspected for possible EAB infestations. Conducting debarking surveys on selected ash trees is recommended. Once the City starts prioritizing and removing higher risk ash trees, it will be required that the trees be debarked and inspected for possible EAB infestation.

Appropriate City staff and contracted tree removal companies will be trained in the proper procedure for bark-stripping and identification of EAB larva, pupa, and emerging adults.

Residents and local tree services are encouraged to look for signs of possible EAB infestations, and to notify the Leisure Services Department at (563) 589-4298 or the ISU Insect Diagnostic Clinic at (515) 294-0581 if they suspect that they have discovered EAB within the City.

PREVENTION/TREATMENT OPTIONS:

There has been confusion and debate surrounding the question of whether insecticides are an effective management option for EAB. Research and experience has shown that insecticides can protect healthy problem free ash trees from being killed by EAB. In 2011, the Coalition for Urban Ash Tree Conservation released a “consensus document” co-signed by twenty (20) researchers strongly endorsing ash tree conservation. Current EAB treatment protocols are now available that can preserve ash trees. Research suggests that the best control can be achieved when insecticide treatments are started prior to or in the earliest stages of infestation before visible symptoms are present or possibly the year before trees are infested. Insecticide treatments for all but one chemical formulation must be repeated each year. Tree-age (emamectin benzoate) gives two (2) years of protection. Any company that offers chemical treatment services must have an Iowa Pesticide Application Business License as well as Certified Pesticide Applicators License, certified in the appropriate categories, through the Iowa Department of Agriculture.

Research studies have shown that systemic treatments of tree-age (emamectin benzoate) in early spring can prevent EAB infestation. Trees must be re-injected every two (2) years for the remaining useful life of the tree. It has been shown that healthy trees have a higher chance of surviving than declining trees. Due to the expense and frequency of these applications it is the recommendation of the City Forester that the City does not try to treat all of the trees. Significant, sizable, or otherwise important healthy ash trees may be primary candidates for special management, such as preventative treatment. The City’s approach is to continue monitoring the progress made in research studies. The City will remove infested trees as they are identified.

REMOVAL OF TREES:

Public Trees: If EAB is positively identified by the Iowa Department of Natural Resources within the City, the City plans to aggressively remove these trees. Removal is an important strategy in attempting to contain the spread of EAB because removal and destruction of infested trees kills the larvae and prevents the further spread of adult EABs. Removal limits the area to which the adult EABs can easily spread, which

should slow the spread of any infestation. As these trees are removed, they will be disposed of following the proper protocol.

The City will use an inventory of all public ash trees to manage the removal of all species of ash. The inventory will be used to establish a budget and time frame for the removals. Prioritization will be based on risk abatement, nuisance, and budget. High risk trees will be prioritized and removed first within the City's budget. The trees will be marked and tracked for removal. Trees that need to be removed will be handled in accordance with current Iowa Department of Agriculture and Land Stewardship standards, such as transportation, chipping the tree to the proper chip size recommendations, and ensuring that the logs are properly processed at their final location.

Unless specifically mandated by the State of Iowa, the City does not plan to remove all healthy ash trees. In years to come, parasitic wasps and other predators like wood peckers could significantly slow the spread of the EAB. In the future, new management tools may be developed that will hold EAB populations to less damaging levels, having a reduced economic impact.

Private Trees: The City Forester, or designated representative, will perform visual inspections of ash trees on private property if an EAB infestation is reported and highly suspect. Residents are urged to call the Leisure Services Department to report any suspected infestations or insects believed to be the EAB. Inspections of ash trees on private property will not continue once an initial EAB infestation is confirmed within the City. As discussed earlier, preventative insecticide treatment of ash trees has been shown, under certain conditions, to be effective in preventing EAB infestations. However, there is no treatment that is 100% guaranteed to prevent EAB infestations.

The City will provide homeowners with literature, resources, and guidance on various treatments that they may consider that might help prevent EAB infestations, should they wish to treat their healthy ash trees. Most of this information will be available on the City's website with links to other state and national websites as well. In order to best manage EAB throughout the community, privately owned infested trees will have to be removed in a timely manner in accordance with City Code of Ordinances Title 6, Chapter 4, Section 6-4-3(B) Diseased or Damaged Trees or Plant Materials. This requires property owners remove and destroy infested trees within a specified period of time after notice has been served. Removals on private property will be the responsibility of the property owner. All removals shall be done in a manner compliant with the current regulations provided by the Iowa Department of Agriculture and Land Stewardship. Any deviations from these regulations shall be reported to the proper agencies.

DISPOSAL OF DEBRIS:

In the event that EAB is identified within the City limits, it will be crucial to properly handle infected wood debris. The City should explore partnering with nearby private wood processing centers.

The City should look for potential markets to offset the cost of processing tree debris; with biomass energy production and sawmilling being two of the possible markets. Debris of trees infested by EAB shall be taken to locations specified by the City or the IDNR.

REFORESTATION:

The City's Leisure Services Department Forestry Activity will have oversight of all public tree replacement programs within the city limits. As the budget and planting policy guidelines permit, ash trees will be replaced with species that are appropriate to the planting site and increase overall species and age diversity of public trees.

Diversification

Species diversification is especially important when species-specific pest problems arrive (such as Dutch elm disease or EAB). Without diversification, our community is much more vulnerable to catastrophic losses. In general, no genus should make up more than ten percent (10%) of the City's tree population. The City will work toward this goal for its entire street tree inventory. City residents will be encouraged to plant trees to replace any ash tree removed due to EAB. Recommended replacement trees will be listed on the City's website (www.cityofdubuque.org/EAB).

Tree Replacement Programs

- Street Trees – The City's Leisure Services Department Forestry Activity will continue to implement the City's annual street tree replacement program. Street trees will be replaced at no cost to adjacent home owners. The current amount budgeted annually is five thousand dollars (\$5,000.00).
- Private Trees – The City will encourage private property owners to replace lost ash trees with site appropriate shade and evergreen trees. It is to everyone's benefit that the City maintains an overall forest canopy of forty percent (40%).

POTENTIAL COSTS:

The value of shade trees to City residents (appraised value and benefits) greatly exceeds their costs. Trees provide shade and lower summer temperatures by evaporating water through their leaves. Trees provide value by intercepting storm water, preventing erosion, sequestering carbon, removing air pollutants, and releasing oxygen. Trees can also have a positive psychological and sentimental value that is difficult to quantify.

A. Removals: The arrival of the EAB will have a financial impact on the City. It is unlikely all ash trees would have to be removed within one (1) year; however, the City anticipates that removals would increase yearly if the EAB has established itself in Dubuque. There are approximately one thousand seven hundred fifty (1,750) ash trees located within or on City properties, including street trees, park trees, and ash trees located on other developed City properties and developed right-of-ways. The estimated cost to remove all of these trees depends on the diameter of each tree due to how the City's tree removal contract

is structured (see table below). The cost for this scenario would be approximately \$1,541,420.00 using current tree and stump removal contract pricing.

Tree Removal Budget Table

DBH*	Cost Per Tree	Number of Trees	Total Removal Cost
0"-6"	\$230	554	\$127,420
6"-18"	\$1,100	868	\$954,800
18"-26+"	\$1,400	328	\$459,200
TOTAL		1,750	\$1,541,420

*Diameter at Breast Height

B. Replacement: The estimated cost to replace all of the ash trees located in the City’s planting lawn right-of-ways is approximately \$533,750.00.

Projected Tree Replacement Budget

Caliper	Purchase Cost	Planting Cost	Trees	Total Planting Cost
1.75"-2"	\$245	\$60	1,750	\$533,750

Total Removal and Replacement Budget

Removal	\$1,541,420
Replacement	\$533,750
Total Cost	\$2,075,170

PUBLIC EDUCATION:

Public outreach will be a key component for the City in managing an EAB infestation. Proper education and communication will enable the City the ability to make proper decisions and mitigate potential negative reaction.

Public information campaigns will focus on asking residents to:

- Stay informed and follow directives from the Iowa DNR – Check for periodic updates on these websites:
www.iowadnr.gov/forestry/eab
www.emeraldashborer.info
www.extension.iastate.edu/pme/emeraldashborer.html
www.iowatreepests.com/eabregulations.html

- Attend public outreach meetings – Attend public meetings that will address the discovery of EAB in Eastern Iowa. EAB identification and preventative tree treatments will be reviewed.
- Review and distribute EAB information – EAB educational information will be available on-line at the City’s website (www.cityofdubuque.org/EAB).
- Help monitor and report EAB – Learn about EAB and monitor your ash trees for the pest. If you believe you have found either the insect or an infested ash tree, call the City’s Leisure Services Department at (563) 589-4298; the City will respond promptly to all such calls until an EAB infestation has been positively confirmed within the city of Dubuque.
- Care for ash trees – Care for your private trees routinely and stay abreast of treatment information. If EAB is within fifteen (15) miles, consider treatment as a care option. It is recommended that residents use ISA-certified arborists when hiring tree care companies.
- Plant for diversity – Do not plant ash trees on your property. Plant underutilized tree species instead. The City’s website has a posting of specific species for you to consider (www.cityofdubuque.org/EAB).

As of February 2014, all 99 counties in Iowa have been quarantined by the Iowa Department of Agriculture and Land Stewardship to slow the movement of this destructive pest to non-quarantined areas/states. There is no longer a legal restriction moving ash and ash products within the state of Iowa.

DO NOT TRANSPORT FIRE WOOD OUT OF THE STATE OF IOWA.

NOTIFICATION:

If notification is received reporting the possible discovery of the EAB within the City limits:

- The City Forester or designated representative will investigate the complaint as soon as possible.
- If the City Forester or designated representative believes the tree is infested with EAB, the Iowa DNR Urban Forestry Division shall be contacted at (515) 281-5600. A branch debarking sample shall be taken and submitted to:
STATE ENTOMOLOGISTS OFFICE
2230 South Ankeny Blvd.
Ankeny, IA 50023
(515) 725-1470
- The City Manager shall notify the City Council about the possibility of the presence of the EAB within the City limits.

Upon positive identification:

- The City Forester or designated representative will notify the City Manager about the positive identification.
- The City Manager shall share the information about the positive identification with the City Council.
- A press release will be prepared and sent to media contacts.

- E-News article will be prepared and posted on City website.
- Door hangers will be prepared and distributed to neighboring properties.
- Trees within two (2) miles of positive find will be assessed for EAB activity within a reasonable time frame. If an additional EAB infestation is discovered, an expanded survey will be initiated per the new find.
- Wood from EAB infested trees must be taken to a pre-approved location for disposal.
- Regulatory and control activities will be initiated as necessary.

COMMUNICATION PLAN:

If the EAB is positively identified within City residents, landowners, and businesses, the immediate area will have a need for pertinent, current information. The public will be notified only after the presence of EAB has been confirmed by the proper authorities. Communications will take place via the following:

Press Release:

The City will prepare an initial press release within two (2) days of confirmation of the EAB that will include:

- Announcement of find
- Summary of events leading to find
- The latest regulatory issue/what happens now?
- Partners in response (relevant agency officials if any)

An example press release copy is attached to this Plan as Appendix A.

E-News:

Information about the finding will be posted on the City’s website. An example press release copy is attached to this Plan as Appendix B.

Door Hangers:

Information about the finding will also be included in a handout/door hanger to distribute to properties of the infested tree. An example door hanger copy is attached to this Plan as Appendix C.

DUBUQUE – EAB ACTION PLAN/CHECKLIST:

- Determine the City’s comprehensive ash tree plan.
 - A comprehensive plan describes how the City intends to manage ash trees in a variety of scenarios and directs the decision making process with regards to the following issues:
 - Public Ash Trees
 - Private Ash Trees
 - Treatment Options
 - Woodlot Management
 - Monitoring
 - Wood Debris and Disposal
 - Replanting Plan

➤ Public Education and Communication

- Update and revise appropriate public ordinances.
 - Review current ordinance, address both public and private trees.
 - The City will need to establish its authority in the removal of all dead, dying, or diseased ash trees on private property.
 - Declare ash trees, whether living infected or dead, a public nuisance.
 - Prohibit the planting of ash trees.
 - Establish authority to inspect ash nursery stock and ash products.
 - Establish authority to inspect private ash trees.
 - Establish authority to require removal of public ash tree.
 - Affirm authority of the City Forester for maintenance and management decisions regarding ash trees.
 - Define a penalty for the violation of above provisions.
 - Define provisions by which public ash trees can be treated and preserved at the expense of the private property owner, as opposed to possible removal.
 - License those engaged in the business of caring for trees. Require proof of adequate liability and workman's compensation insurance.

- Create an electronic and comprehensive public tree inventory, which includes street trees, park trees, green spaces, and trees on all other publically owned properties.
 - A computerized inventory is a priority. It is critical that the inventory be kept up to date.
 - Locate all public ash trees with GPS coordinates, measure diameter at breast height (DBH), and record species.
 - Establish a condition rating, planting lawn width, and proximity to overhead power lines.

- Train in house Forestry personnel, tree contractors, and Leisure Services Department staff. Conduct surveys to look for EAB.
 - Identify and educate the core internal team. Provide staff training to Forestry, Parks, Public Works, and other local tree authorities.
 - Explore opportunities for professional service work/contract with a Certified Arborist.
 - Educate Mayor, City Council, and other City officials; advise them on the potential for tree loss in the community and the potential cost of tree loss and replacement programs.

- Locate a possible processing facility for large quantities of wood and develop procedures for dealing with infested material.
 - Explore opportunities and partnerships with other local business, governments, and communities.
 - Explore wood utilization and marketing opportunities.
 - Fire wood restrictions. Cut and burn locally and purchase properly labeled firewood.
 - Determine costs associated with processing and shipping of infested material.

- Establish replanting program.
 - Review current tree planting programs.
 - Update recommended street tree species planting guide.
 - Research a private tree removal/replacement hardship program
 - Explore new planting program opportunities.
 - Explore program funding sources.
 - Development of a replanting program budget.

- Develop and strengthen community education and outreach.
 - Develop a local outreach program to inform citizens of local protocols.
 - Develop and add EAB informational web page on City website.
 - Network by attending meetings and workshops for ongoing education and information.
 - Include public officials and decision makers in public awareness and training events when appropriate.

- Tree Removals.
 - Review in-house equipment needs.
 - Review in-house labor and training needs.
 - Evaluate insurance rate associated with mass tree removal operations.
 - Review current tree removal contracts.
 - Develop contract specifications.
 - Develop a Request for Proposal/bid document.
 - Development of a tree removal budget.
 - Research tree service permit requirement process.
 - Tree injections.
 - Determine how many and which trees are good candidates for possible treatment.
 - Explore in-house vs. contractual treatment options.
 - License companies providing tree removal and health care services.
 - Explore and adopt a public ash tree program.
 - Create a public ash tree treatment permit.

- Budgeting.
 - Identify possible funding sources and start budgeting for those early anticipated costs.
 - In the fifth year of an infestation trees will die rapidly and removal costs will sky rocket according to cities that have been affected already.
 - The cost of dealing with an emerald ash borer management plan can be spread out over time by identifying unhealthy trees and removing them early, treating the healthier ash trees, and doing some of the work in house.

APPENDIX A – PRESS RELEASE

*** (Date) ***

City of Dubuque Discovers the Presence of Emerald Ash Borer

The City of Dubuque is the latest community to discover the presence of the highly destructive insect known as the Emerald Ash Borer (EAB). The EAB is a small, metallic green, non-native invasive pest whose larvae feast on the trunks of ash trees, ultimately disrupting their ability to transport nutrients and causing the tree's eventual decline and death. The EAB infestation in Dubuque was discovered at (location) on (date) when (circumstances).

The EAB was first discovered in North America in 2001 in the Detroit and Ontario areas. It is unclear how the pests arrived, but they most likely arrived with ship cargo. Since their arrival, the pests have spread to sixteen (16) states and tens of millions of ash trees have been lost.

The City has been preparing for the eventual arrival of the EAB by formulating an EAB Readiness Plan. Dubuque Park Division Manager Stephen Fehsal stated, "In preparation for the Emerald Ash Borer's arrival, the City has inventoried trees on right-of-ways and other public property. During this inventory, it was found that ash trees make up approximately 24% of the City's total street tree canopy, so this infestation could be devastating to our community's tree population. Right now, the City is working to monitor the progression of the infestation, manage the public ash tree population, and educate our residents as to their options regarding their privately owned ash trees. Fortunately, as a Tree City, Dubuque discontinued planting ash trees in public right-of-ways in recent years and ash trees are not advised in any new developments."

The EAB Team comprised of officials from Iowa State University, Iowa Department of Agriculture and Land Stewardship, and the Department of Natural Resources are targeting efforts at slowing the spread of the disease throughout the State. The EAB team will work with the City to determine what steps will be required to control the spread of EAB.

Unlike some other communities that are choosing to remove and eliminate perfectly healthy ash trees from their neighborhoods, the City of Dubuque will remove ash trees on public property after positive confirmation of an EAB infestation, or as they begin to decline. Healthy problem free ash trees will be considered for treatment. Since it was previously thought that the ash tree was a very hardy, easy to care for species, many neighborhoods host large populations of the trees and these neighborhoods could see dramatic changes in their landscape over the next few years.

Residents concerned about their privately owned ash trees can check for the following symptoms since these symptoms are usually apparent before the bugs are spotted:

- Canopy/crown dieback

- 1/8" D-shaped exit holes on trunk or branches
- Irregular branching with suckers sprouting at the back of the trunk
- Woodpecker flecking activity on tree branches

Residents can contact an ISA Certified Arborist with questions or for confirmation of suspected EAB. For more information please refer to the City of Dubuque website at www.cityofdubuque.org/EAB.

APPENDIX B – E-NEWS SUBMISSION

Emerald Ash Borer Discovered in City

The City of Dubuque is the latest community to discover the presence of the highly destructive insect known as the Emerald Ash Borer (EAB). The EAB is a small, metallic green, non-native invasive pest whose larvae feast on the trunks of ash trees, ultimately disrupting their ability to transport nutrients and causing the tree's eventual decline and death. The infestation in Dubuque was discovered at (location) on (date) when (circumstances).

Ash trees make up a large portion (approximately 24%) of Dubuque's total canopy, so this infestation could be devastating to our community's tree population. The City of Dubuque will act quickly to remove ash trees on public property after positive confirmation of the EAB, or as they begin to decline.

Residents concerned about their privately owned ash trees can check for the following symptoms, since these symptoms are usually apparent before the bugs are spotted:

- Canopy/crown dieback
- 1/8" D-shaped exit holes on trunk or branches
- Irregular branching with suckers sprouting at the back of the trunk
- Woodpecker flecking activity on tree branches

Residents can contact an ISA Certified Arborist with questions or for confirmation of suspected EAB. For more information please refer to the City of Dubuque website at www.cityofdubuque.org/EAB.

APPENDIX C – DOOR HANGERS

City of Dubuque Discovers the Presence of Emerald Ash Borer

Dear Neighbor:

On (date), the City of Dubuque discovered the presence of the highly destructive insect known as the Emerald Ash Borer (EAB). The EAB is a small, metallic green, non-native invasive pest whose larvae feast on the trunks of ash trees, ultimately disrupting their ability to transport nutrients and causing the tree's eventual decline and death. The EAB infestation in Dubuque was discovered at (location) when (circumstances).

While the EAB does not pose any health risk, it does threaten our ash tree population. The Iowa DNR is the lead agency in creating policy related to the EAB. The Department's primary efforts are targeted at slowing the spread of the disease throughout the State. The Iowa DNR will work with the City of Dubuque to determine what steps will be required to control the spread of EAB. Unlike some other communities that are choosing to remove and eliminate perfectly healthy ash trees from their neighborhoods, the City of Dubuque will remove ash trees on public property only after positive confirmation of the EAB, or as they begin to decline.

Please help us combat the EAB infestation by doing the following:

- Inspect all ash trees on your property and look for symptoms of EAB.
 - If you suspect that EAB has infested your tree, contact a private arborist to remove the tree(s).
 - If you see no signs of the EAB, you may want to consider treating ash trees with a preventative pesticide. While there is some controversy about the effectiveness of pesticide, it is currently the only available option to attempt prevention. Go to www.emeraldashborer.info for more information.
- Do not move firewood; the EAB can easily be transported in firewood.

Addressing the presence of the EAB in the City will be an involved process. Currently, the only effective method of stopping the spread of the pest is to remove and destroy all infested ash trees in an area.

APPENDIX D – CITY OF DUBUQUE CODE OF ORDINANCES

Chapter 8 TREES AND WEEDS

6-8-1: TREES AND LANDSCAPING:

A. Planting And Removal; Permission Required: It shall be unlawful for any person, firm or corporation to plant or remove trees in the public right of way without the written permission of the city manager or the city manager's designee, and upon such terms and conditions as the city manager shall require.

B. Street Tree And Landscaping On Public Right Of Way Policy: The city manager shall develop, with the approval of the city council, a written street tree and landscaping on public right of way policy which shall govern the planting, maintenance and removal of trees and shrubs in the public right of way.

**APPENDIX E – CITY OF DUBUQUE STREET TREE AND
LANDSCAPING ON CITY RIGHT-OF-WAY POLICY**

New Policy to be attached when approved.

APPENDIX F – RECOMMENDED STREET TREE LIST

Special Note: This recommended street tree listing is a compilation of tree varieties chosen to meet the City’s street tree planting needs. Selections were made based upon tree size and stature, crown development, hardiness, disease resistance, fruit/seed production, and urban tolerance. This list is intended to be used by the forester when making placement decisions. It is not a shopping list to be used by anyone other than the forester, thinking that one size or selection fits all potential locations.

Genus/Species	Subculture	Size(HxW)	Common Name
Acer campestre		30x30	Hedge maple
Acer freemanii			Freeman maple
	*Armstrong	50x15	
	Autumn Blaze	50x40	
	*Celebration	40x20	
	Sienna Glen	50x35	
Acer ginnala			Amur maple
	*Embers	20x15	
	Flame	20x20	
Acer miyabie			Miyabie maple
	State Street	50x35	
Acer nigrum			Black maple
	*Green Column	50x20	
Acer platanoides			Norway maple
	*Crimson Sentry	25x15	
	*Columnar	35x15	
	*Conquest	40x20	
	*Easy Street	40x20	
	Emerald Luster	45x40	
	Emerald Queen	50x40	
	Fairview	45x35	
	Parkway	40x25	
	Royal Red	40x30	
Acer rubrum			Red maple
	Autumn Spire	40x25	
	*Bowhall	40x15	
	Brandywine	40x30	
	*Karpick	40x20	
	Northwood	40x35	
	Redpointe	45x30	
	Red Sunset	45x35	
	*Scarlet Sentinel	40x20	
Acer saccharum			Sugar maple
	*Apollo	25x10	
	Autumn Fest	50x35	

	Commemoration	50x35	
	*Endowment	50x20	
	Fiesta	50x40	
	Green Mountain	50x40	
	Wright Brothers	50x35	
Acer tataricum			Tatarian maple
	Tatarian	25x20	
Acer truncatum X platanoides			Hybrid maple
	Norwegian Sunset	35x25	
	Pacific Sunset	35x25	
	Crimson Sunset	35x25	
Amelanchier laevis			Serviceberry
	*Cumulus	25x12	
	*Snow Cloud	25x15	
	*Spring Flurry	35x20	
Carpinus carolinia			Hornbeam
	Native Flame	30x20 (Zone 5)	
Celtis occidentalis		45x35	Hackberry
	*Prairie Sentinel	45x12	
Crataegus crusgalli inermis			Thornless hawthorn
	Cockspur	25x25	
	Crusader	15x15	
Ginkgo biloba			Ginkgo
	Golden Colonnade	45x25	
	*Princeton Sentry	40x15	
Gleditsia tricanthos inermis			Honey locust
	Imperial	35x35	
	Moraine	50x35	
	Northern Acclaim	45x35	
	Sunburst	40x35	
	Skyline	45x35	
	Street Keeper	45x20	
	True Shade	40x35	
Gymnocladus dioicus			Kentucky Coffee Tree
	Espresso	50x35	
Liriodendron tulipifera			Tulip Tree
	Emerald City	55x25 (Zone 5)	
Malus			Ornamental crab
	*Adirondack	18x20	
	*Centurion	20x15	
	*Harvest Gold	22x18	

	*Liset	20x15	
	*Marilee	24x10	
	*Prairifire	20x20	
	*Prairie Gold	40x15	
	*Royal Raindrops	20x15	
	*Sentinel	20x12	
	Spring Snow	20x20	
Nyssa sylvatica			Tupelo
	Red Rage	35x20 (Zone 5)	
Ostrya virginiana			
	American Hophornbeam (Ironwood)	40x25	
Pyrus callerana			Ornamental pear
	Aristocrat	40x28	
	Autumn Blaze	30x25	
	*Chanticleer	40x15	
	Rancho	35x25	
	Red Spire	35x25	
Syringa reticulata			Tree lilac
	*Ivory Silk	20x15	
Quercus macrocarpa			Hybrid
	Urban Pinnacle	55X35	
Quercus robur x Asjes			Hybrid
	*Rosehill	40x20	
Quercus robur x alba			Hybrid
	*Crimson Spire	45x15	
	*Streetspire	45x15	
Quercus robur x bicolor			Hybrid
	*Regal Prince	45x18	
Quercus rubra		50x45	Red oak
Tilia americana			Big leaf linden
	American Sentry	45x30	
	Boulevard	50x25	
	Redmond	35x25	
	Legend	40x30	
Tilia cordata			Little leaf linden
	*Chancellor	35x20	
	*Corinthian	45x15	
	Glenleven	50x30	
	Green Spire	40x30	
	Harvest Gold	40x30	
	Shamrock	40x30	
Ulmus			Elm
	Everclear	40x15 (Zone 5)	

	Emerald Prairie	40x30 (Zone 5)	
	Emerald Sunshine	35x25	
	Frontier	40x30	
	New Horizon	50x35	
	Patriot	50x40	
	Prospector	40x30	
	Regal	50x30	
Zelcova serrata			Zelcova
	Green Vase	45x30 (Zone 5)	
	Halka	45x35 (Zone 5)	
	Musashino	45x15 (Zone 5)	

*Indicates a more upright form.

Updated: March 2011

APPENDIX G – TREES NOT ALLOWED IN STREET RIGHT OF WAYS

Not allowed – due to their susceptibility to storm damage, disease, their limited hardiness, or because they are considered unusually messy due to dropped fruit and/or limbs, the following tree species will not be allowed to be planted in any street right-of-way within the City of Dubuque:

<i>Ulmus americana</i> – American Elm	<i>Catalpa speciosa</i> - Catalpa
<i>Ulmus pumila</i> – Siberian Elm	<i>Quercus palustris</i> – Pin Oak
<i>Sorbus aucuparia</i> – European Mountain Ash	<i>Ailanthus altissima</i> – Tree of Heaven
Fruit Trees	<i>Elaeagnus angustifolia</i> – Russian Olive
Nut Trees	<i>Robinia pseudoacacia</i> – Black Locust
<i>Fraxinus americana</i> – White Ash	<i>Acer saccharinum</i> – Silver Maple
<i>Fraxinus pennsylvanica</i> – Green Ash	<i>Populus</i> – Poplar (cotton bearing)
<i>Gleditsia triacanthos</i> – Honeylocust (thorny)	<i>Populus nigra italica</i> – Lombardy Poplar
<i>Betula pendula laciniata</i> – Weeping European Birch	<i>Populus alba</i> – White Poplar
<i>Morus rubrum</i> - Mulberry	<i>Salix species</i> - Willows
<i>Maclura pomifera</i> – Osage Orange (Hedge Apple)	<i>Populus alba bolleana</i> – Bolleana Poplar
<i>Acer negundo</i> – Boxelder	
All evergreens (firs, spruces, conifers)	