City of Cheyenne
Urban Forestry Division
Emerald Ash Borer (EAB) Management Plan
July 31, 2019

Ash Tree
(*Fraxinus spp.*)

Background

Adult EAB beetle

Emerald Ash Borer (EAB) is an invasive wood boring, metallic colored beetle that was discovered in Michigan in 2002. It is suspected the beetle made its way to the United States from Asia in wood packing material. Since then, EAB has spread steadily across the U.S. and Canada and has killed hundreds of millions of ash trees totaling an estimated 4 billion dollars in losses. To date, EAB is the most destructive and costly forest insect to invade the United States. Many experts believe there is a strong possibility EAB could kill every untreated ash tree growing in North America.

EAB has not yet been detected in Cheyenne, however, it was found in Boulder, CO in 2013 and in Longmont and Gunbarrel in 2016, Lafayette in 2017 and Superior and Lyons in 2018. It was also identified in Omaha, NE in 2016. In 2018, it was found in Lincoln, NE and Sioux Falls, SD, confirming that three adjoining states to Wyoming now have verified EAB populations.

Damage

Emerald ash borer damages trees by tunneling under the bark, producing girdling wounds that interfere with the movement of water and nutrients. The damage is progressive, with more effects of infestation becoming visible as increasing numbers of insects develop and feed within the tree.

When emerald ash borer first arrives and becomes established in a neighborhood it is usually present in low numbers and is very difficult to detect. However, populations tend to build steadily and within a few years it may be possible to readily observe some external visual evidence of infestation. A thinning of the leaf canopy is the most consistent symptom associated with early EAB injury.

Crown dieback, thinning crowns and epicormic sprouting can be indicators of an EAB infestation. *Pictures taken by Cheyenne Urban Forestry Division*

Often, about the time symptoms first become truly noticeable, the populations of EAB explode in numbers and tree damage accelerates at a very rapid pace. During this period of peak outbreak, trees that previously appeared healthy may die within just a year or two if not treated with an insecticide.

Natural spread occurs through flights of adult beetles. Normally they will fly only short distances, about a half mile, staying in the near vicinity of the tree from which they developed. However, some will fly longer distances and with the aid of favorable winds, it is possible that a few may fly several miles.

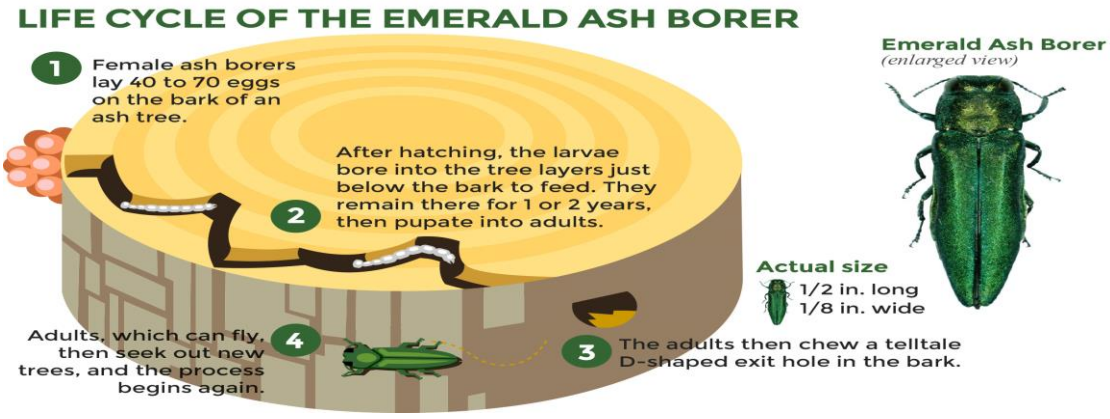
Emerald Ash Borer is readily spread by humans, most often in firewood and wood products. Ash material harboring viable eggs, larvae, pupae or adults can be moved very easily from one place to another. EAB life stages are hardy enough to survive such transport and complete their life-cycles wherever they end up. This allows them to be moved quickly over very long distances and infest new areas.

Geographic barriers present in the west, notably mountains and large expanses of ash-free terrain, may help to prevent the natural spread of EAB to Cheyenne. However, there will always be a risk of the insect being introduced from infested areas through the movement of infested firewood, nursery stock, packing material or wood chips containing live EAB life stages. Due to Cheyenne's proximity to two major interstates and two major rail lines, the likelihood of EAB infested wood traveling through Cheyenne is high. National quarantines of infested counties (including Boulder County in Colorado) are in place to prevent this type of human-assisted spread of EAB. These quarantines are being reevaluated though and soon could be eliminated, which could increase the likelihood of infested wood traveling through Cheyenne.

Emerald Ash Borer Life Cycle

Emerald ash borer has a life cycle that normally takes one year to complete. In Colorado, peak emergence of adult beetles is typically in June. However, some beetle emergence could extend into midsummer. Emerging beetles leave distinct D-shaped exit holes in the trunk and branches. Adults seek out ash trees and feed on the foliage, doing mostly unnoticeable defoliation. After a week of feeding, mature adults begin to mate. Within a few days of mating, females begin to lay eggs in bark cracks and crevices. On average, females lay 40-70 eggs which hatch in about two weeks. Upper portions of the canopy are usually colonized before the main stem.

Newly hatched larvae bore through the bark and begin to feed on the phloem, cambium and outer sapwood, producing winding, serpentine galleries that progressively widen as the larvae grow. Ultimately the gallery produced by a single larva may extend over an area ranging from 4 to 20 inches (10-50 cm) in length. Larvae feed until the onset of cooler fall temperatures and then prepare to overwinter by tunneling a bit deeper into the sapwood to produce an overwintering chamber. Pupation occurs in late spring and adults emerge soon thereafter.



John Vanvig 2016 – http://remagazine.coop/electric-cooperatives-ash-borer-beetle/

Cheyenne's Urban Forest

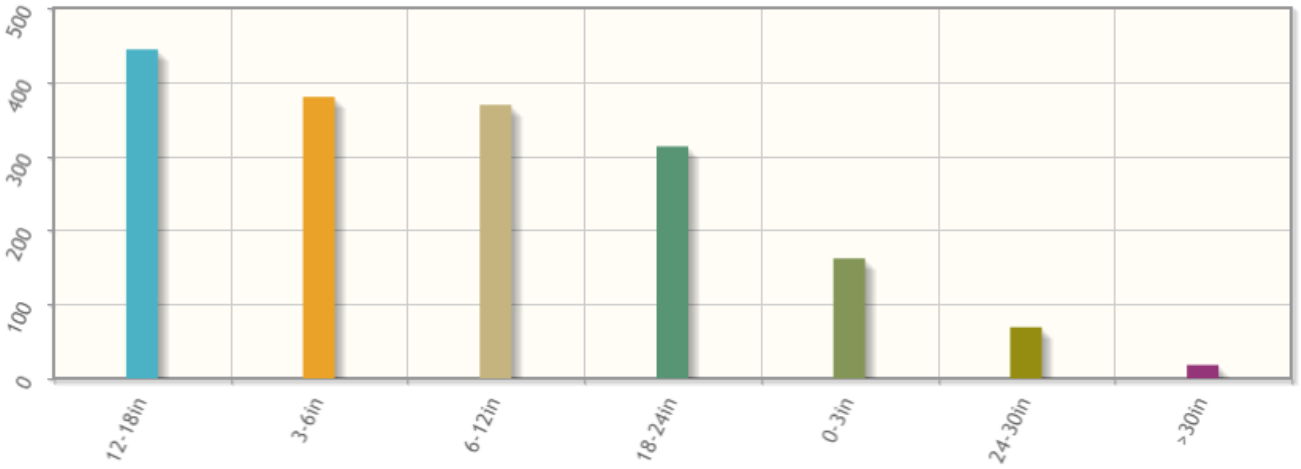
Understanding the composition of Cheyenne's urban forest is critical to estimating the likely effects of EAB. Cheyenne is fortunate to have several tools to better understand its urban forest, however these tools all have limitations and shortcomings that influence the estimates made in this plan. The Cheyenne Urban Forestry Division (CUFD) utilizes an on-line tree inventory system called Tree Plotter and has inventoried about 95% of city-owned properties over the past 5 years. CUFD also contracted a residential private property tree inventory in 2018, in which approximately 2% of privately-owned trees were randomly sampled across Cheyenne. This inventory only included trees on residential properties in front and back yards and did not include street trees.. From this inventory city-wide projections for tree species populations were made. CUFD also contracted a street tree inventory in 2013 of trees in the city's right-of-way, that included about 5,000 trees in the central core of the city and helped to augment an earlier street tree inventory done in 2005 which included over 10,000 trees. These older street tree inventories along with the city-owned tree inventory are all contained within Tree Plotter and include almost 30,000 trees. In addition, tree population projections from the residential private property inventory include 123,000 trees, which together totals over 150,000 trees in Cheyenne. However, these inventories did not capture tree statistics for many other city right-of-way areas, businesses, other governmental entities, non-profits, schools, etc.

Although these inventories do not capture tree statistics from all areas and all jurisdictions, together they do provide some important statistics for Cheyenne. From these numbers, a picture of Cheyenne's urban forest comes into focus and provides CUFD with evidence to support future management. In addition to CUFD's current tree inventory estimates, a municipal tree analysis was completed back in 2004 by the USDA Forest Service that can be used to compare our current tree inventory statistics and aid in management decisions.

From the above tree inventory statistics, the following ash tree population estimates were made:

- 5% of city-owned trees are ash, which is approximately 750 trees.
    - 59% are in fair or poor condition
    - 73% are less than 12" DBH and of these 54% are in fair or poor condition
- 5% of residential privately-owned trees are ash, which is approximately 6,455 trees city-wide
- 13% of street trees are ash
    - 61% are in fair or poor condition
    - 61% are greater than 12" DBH
- Ash is in the top ten most common tree species across all inventories

Ash Trees / DBH distribution for city and street ash trees inventoried

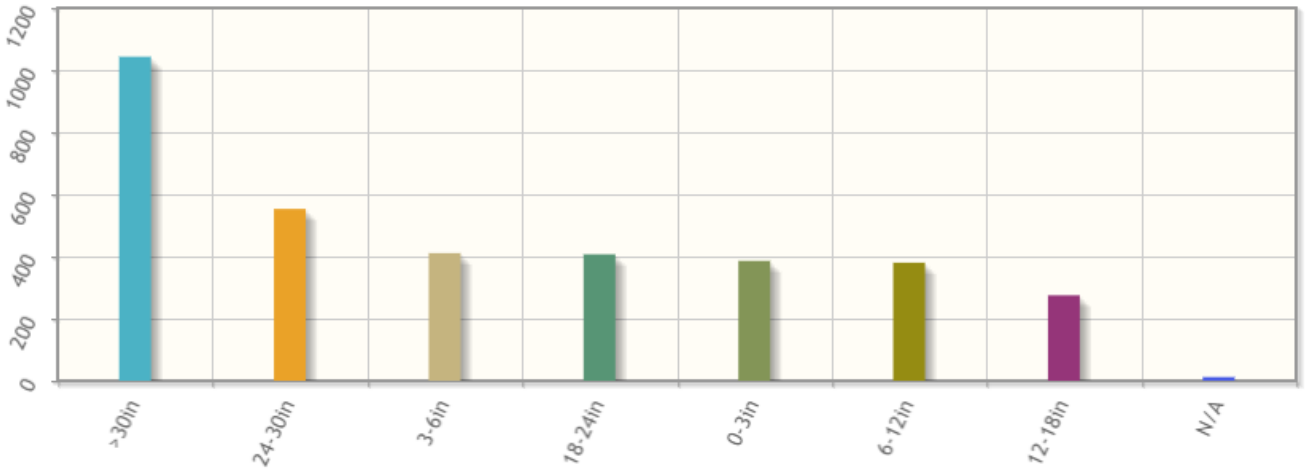


As a result of compiling tree inventory statistics to gauge Cheyenne's ash tree population, it became evident how skewed Cheyenne's tree population was toward a handful of tree species and how prominent cottonwood factored into Cheyenne's urban forest. In fact, regardless of the area inventoried, cottonwood was the most prominent tree species. In addition, the city-owned trees and street tree inventories indicate that over 30% of the cottonwood population is over 24" DBH. These statistics indicate that cottonwood is by far Cheyenne's most common tree species and in parks, public spaces and older neighborhoods, it is near the end of its lifespan.

From existing tree inventory statistics, the following cottonwood tree population estimates were made:

- 13% of city-owned trees are cottonwood, which is approximately 1,800 trees.
  - 52% are in fair or poor condition
  - 36% are over 24" DBH
- 21% of residential privately-owned trees are cottonwood, which is approximately 25,883 trees.
- 21% of street trees are cottonwood
  - 57% are in fair or poor condition
  - 52% are greater than 12" DBH

Cottonwood Trees / DBH distribution for city and street cottonwood trees inventoried



Urban Forest Benefits

Healthy urban forests have been shown to aid cities in achieving goals for environmental, social and economic sustainability. The urban forest effectively helps to mitigate several harmful environmental issues, such as air and water pollution and stormwater runoff. It also acts to encourage citizens to get outside and be more active and is an escape from the stresses of daily life. By shading and sheltering buildings, trees reduce cooling and heating costs and simultaneously, greenhouse gas emissions. Shade from trees has also been shown to increase the lifespan of built infrastructure, such as roads, parking lots and sidewalks. Trees add to the value of real estate by 5-15% and neighborhoods with tree-lined streets have higher occupancy rates and bring higher rental rates. Trees also improve neighborhoods by calming traffic, reducing noise pollution and encouraging higher pedestrian traffic which increases human interactions and builds stronger community.

From data collected on approximately 2,000 ash trees that have been inventoried on city and private land, calculations on ash tree benefits were done using iTree software. iTree determined that the overall monetary benefit of these ash trees is over $100,000. These trees prevent over 1.4 million gallons of runoff water. They

contribute to the removal of over 3,000 lbs. of pollutants. Over 500,000 lbs. of carbon are stored in these trees preventing release into the atmosphere. The energy savings that is felt from inventoried ash trees in Cheyenne is approximately 170,000 kWh.

From data collected on approximately 3,500 cottonwood trees that have been inventoried on city and private land, calculations on cottonwood tree benefits were done using iTree software. iTree determined that the overall monetary benefit of these cottonwood trees is almost $350,000. These trees prevent over 6 million gallons of runoff water. They contribute to the removal of over 7,000 lbs. of pollutants. Approximately 900,000 lbs. of carbon are stored in these trees preventing release into the atmosphere. The energy savings that is felt from inventoried cottonwood trees in Cheyenne is approximately 800,000 kWh.

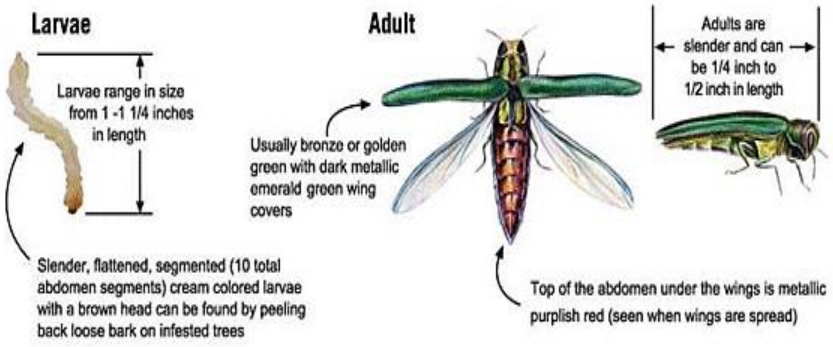
Example of the impact EAB can have on neighborhood ash tree populations. *Photo by Dan Herms, Ohio State University.*

EAB Detection Efforts

Emerald Ash Borer beetle populations are hard to detect when it is first establishing itself in an area, but given time, populations increase rapidly, and external evidence can easily be found. However, signs and symptoms of EAB are similar to other tree diseases and pests and therefore should only be diagnosed by industry professionals. If the following symptoms are seen in local ash trees, residents are asked to contact CUFD, or a local licensed tree care professional for further assessment.

Some typical Signs and symptoms of EAB might include:

- Bark splitting with vertical fissures or galleries exposed under a bark split
- Woodpecker flecking or blonding
- Winding, serpentine shapes under the bark with "D" shaped exit holes.
- The presence of adult insects or larvae
- Canopy dieback (top 1/3 of tree, progressing until tree is completely bare)
- Shoots sprouting from the base of the tree



https://ag.purdue.edu/entm/PublishingImages/news/ash%20borer%20hole.jpg

Trapping

Purple Triangular Traps: Traps are covered in a sticky glue that adheres the EAB adults to the outside of the trap. The adults are lured to these traps using Hexanol.
Green Funnel Traps: Traps typically have a higher capture rate and do not use glue, rather it is funnel shaped and traps EAB adults inside the lower plastic cup located at the bottom of the trap. Adult beetles are lured to these traps using Hexanol.

Photos courtesy Of Cheyenne Urban Forestry

Sampling

Branch Sampling: At least two branches per tree, with a diameter of at least 2-3 inches from the south side of the tree at the mid to upper part of the crown, are removed and the bark is stripped in thin pieces to expose larvae galleries.

Photos courtesy Of Cheyenne Urban Forestry

EAB Response Plan

Pre-Detection: CUFD strategies for management prior to EAB detection
Monitoring ash trees to increase early detection of EAB outbreaks is vital to CUFD's efforts to manage EAB. CUFD is in constant communication with other forestry and invasive species organizations in order to keep updated on new and improved methods of detection.

Educating CUFD Staff:

1. EAB classes through EAB educational sites
2. Seminars/Workshops
3. Hands on Training in cities affected by EAB outbreaks (i.e. Boulder, Longmont, etc.)
4. Other opportunities as they become available

Sampling and Detection Protocol:

1. Sample ash trees for the presence of EAB as tree removals or maintenance on city property is completed.
2. Follow sampling guidelines established by government agencies and research programs.
3. Select trees on city property for sampling that appear to be symptomatic and catalogue each sample for tracking purposes.
4. Conduct inspections/collect samples of any symptomatic trees reported by citizens or other entities.
5. Educate local, licensed arborists to be trained in proper sampling techniques and encourage them to inspect all ash trees as they do tree removals or maintenance. Ask that they report any suspicious tree samples they encounter to CUFD.
6. Maintain EAB traps on city properties.

Ash tree management on city property:

1. Remove and replace ash trees in fair or worse condition
2. Those ash in good condition will be evaluated for other pest infestations and treated as necessary
3. Plant replacement trees following tree diversity guidelines listed below.

All replacement tree plantings follow the 10-20-30 rule: This rule promotes proper tree diversity standards and states:

1. No single tree species should make up more than 10% of the total tree population
2. No single genus should make up more than 20% of the total tree population
3. No single family should make up more than 30% of the total tree population

Tree Inventory updates and expansion: Approximately 20% of the total street trees in Cheyenne have been inventoried. The need to better understand and quantify our forest population along our streets is a necessity. Funding to address these shortfalls in our tree inventory will be a priority in planning for EAB.

Outreach/Assistance for Cheyenne citizens:

Educating the public to be proactive in managing their ash trees will lessen the negative impacts of EAB once it arrives. Citizen education will focus on the following:

1. Encourage property owners to rate the value and condition of existing ash trees in order to better evaluate treatment options for EAB.
2. Promote tree diversity standards when replacing ash trees.
3. Involve public media outlets: newspaper, radio, television, billboard/bus benches/etc. advertisements, social media
4. Direct citizens and interested parties to official EAB websites
5. Develop online resources that focuses on EAB to include a link to the Wyoming State Forestry forest health page for Wyoming specific EAB information.
6. Hold educational workshops on how to detect and control EAB.
7. Involve local green industry businesses by providing literature and handouts they can offer to the public (i.e. nurseries, arborists, irrigation specialists, landscapers, etc.)

8. Pursue a program to aid low income households for the removal and replacement of dead/dying street trees.
9. Promote Rooted in Cheyenne, which is a non-profit neighborhood tree planting program that was established in 2017 to encourage citizens to plant trees along Cheyenne's streets. This program has helped to greatly reduce the cost of replacing trees where trees have died and establish trees where trees never existed, which together has expanded Cheyenne's tree canopy. Property owners can apply for up to two trees per planting. The cost per tree for individual homeowners is $50 per tree. Annual tree plantings occur in May and September of each year. Applications for the program are accepted year-round. As of summer 2019, approximately 500 trees have been planted through this program. Using iTree software, the calculated monetary value of these trees is already over $28,000. These trees are preventing approximately 30,000 gallons of rainwater runoff, storing over 13,000 lbs. of carbon and the energy savings are already around 3,000 kWh. As these trees grow these numbers will increase exponentially. For more information on this program go to www.rootedincheyenne.com.

Detection Protocol: Below are the chronological steps to be followed when a possible EAB infestation is identified.

Specimen Submission: When a possible EAB specimen is found within city limits, CUFD should be contacted and relevant samples collected, such as the insect and wood and bark samples. CUFD will submit samples to the USDA, Animal and Plant Health Inspection Service, Plant Protection and Quarantine (APHIS).

Notifications: Upon positive identification, the Mayor and City Council will be notified, and appropriate press releases will be disseminated. The Wyoming Department of Agriculture (WDA), Wyoming State Forestry Division (WSFD) and the University of Wyoming Extension will be contacted.

Quarantine: EAB is a federally quarantined pest. A local quarantine may be enacted to prevent the spread of EAB and associated regulated items beyond the area currently affected. WDA would be responsible with assistance from the City of Cheyenne and Laramie County in establishing the quarantine area to prevent spread within the state and APHIS would be responsible for an inter-state quarantine, if necessary. The initial quarantine area may be revised after the delimitation process.

Delimitation: A response team led by APHIS, WDA, WSFD and CUFD will establish the boundaries of the EAB infestation. The delimited area typically is located within the quarantine area.

Investigation: It is highly unlikely EAB could get to Cheyenne without human assisted movement. Therefore, an investigation would be led by APHIS, WDA, WSFD and CUFD to determine the source of EAB-infested materials. The investigation would be implemented in conjunction with delimitation. If EAB is detected at a nursery, firewood source, or other wood products source, appropriate actions will be taken to stop future introductions. Potentially infested material would need to be treated and an order issued to halt movement of ash material and regulated articles. If EAB is detected in a standing tree, infested wood would need to be treated and all movement of ash material from the affected property will be prohibited.

Post Detection: CUFD strategies for ash tree management once EAB is positively identified in Laramie County.

- Ash trees on city property in good condition or have historical significance will be treated with insecticide to prevent EAB infestation in order of importance determined by the City Forester.

1. Chemical Treatment – The four most common pesticide applications used for protecting ash trees from EAB are below. These options all require application by a licensed pesticide applicator and are not available to the general public.
    a. TREE-age (emamectin benzoate): a semi-synthetic product derived from a soil bacterium and applied by trunk injection.
    b. TreeAzin (azadaractin): a natural product derived from the seeds of the neem tree and certified for use under the USDA's National Organic Program. This product is applied by trunk injection.
    c. Safari/Transect (dinotefuran): a neonicotinoid insecticide applied as a low pressure, lower stem spray.
    d. Merit (imidacloprid): a neonicotinoid insecticide applied by soil injection or soil drench.

    Chemical options will be determined based upon the size, location, and health of the tree. For homeowners, it is recommended that a trained, licensed arborist do the applications as opposed to homeowners buying over-the-counter pesticides and doing the treatments themselves. Licensed chemical applicators have greater access to a broader range of pesticides which allows them to provide a more comprehensive and often more effective treatment plan.

2. Treatment Costs
    a. Current cost estimates average $5.00 per caliper inch to treat trees by hydraulic injection with Tree-age. The cost of the Arborjet injection unit is $2,755.00 and the cost per inch does not include man hours. CUFD could likely treat approximately 20 to 25 trees per day. Treatments will have to be done every three years for possibly the remainder of the tree's life span.
    b. Current CUFD operational budgets will not adequately fund the volume of trees that will need to be treated.
    c. Costs for contractors to treat trees range from $7.00 to $12.00 per caliper inch.

- Ash on city property in fair or worse condition will continue to be removed and replaced.
- Ash on city property positively identified with EAB will be removed prior to the EAB flight period and replaced the following spring.
- Existing city code (Chapter 12.16.080) allows CUFD staff to inspect any trees or tree parts suspected of being infested with EAB within the city, including the public right-of-way and private land. Upon positive identification, CUFD can require the adjacent property owner of public right-of-way or the property owner of private land to take appropriate action to control the infestation. However, research from the Midwest indicates that active enforcement of EAB infested trees does not substantially slow the progression of the pest due to the inability to keep up with progressively larger numbers of dying ash trees as the EAB population grows. Due to this research CUFD will likely not take an aggressive approach to enforcement of infested trees or tree parts but instead will focus on citizen education and enforcement of street trees within right-of-way areas.
- Existing city code (Chapter 12.16.050) allows CUFD staff to inspect any trees suspected of endangering the public right-of-way, which includes streets, alleys and sidewalks and require the adjacent property owner of public right-of-way or the property owner of private land to take appropriate action to mitigate the hazard. Dead ash trees as a result of EAB have been shown to fail sooner and therefore can pose a greater risk to the public right-of-way if not dealt with in a prudent manner. CUFD will make a concerted effort to keep up with enforcement on dead ash threatening

the public right-of-way, however the potential workload may require reassigning of staff and increased overtime.

- A Marshalling Yard Site will need to be established. A marshalling site will be necessary to store and process ash wood separate from other tree species in a rapid manner to comply with quarantine regulations. Currently, Cheyenne's Compost Facility has the capacity to process wood 12 inches in diameter and less. All larger diameter wood is required to go to the landfill or the transfer station. This current system would need to be modified to handle a large volume of larger diameter wood within the city. A marshalling yard for all tree debris at the compost facility or other city property where ash could be separated from other tree species would be essential to slowing the spread of EAB. If the only option for disposing of larger diameter EAB infested ash wood is to haul it to the landfill, much of this wood will likely stay in Cheyenne due to the cost and hassle of hauling it 11 miles to the landfill or to the transfer station. This could result in the spread of EAB increasing dramatically in areas where infested wood is stored. The city will also have to consider purchasing, renting or contracting equipment capable of grinding/chipping larger diameter wood. Allowing larger diameter wood to be collected and processed in Cheyenne will also help to extend the life of the current landfill and help to reduce the spread of other tree pests.

- Wood use and utilization programs will need to be explored. Large amounts of wood chips will likely be generated at the marshalling yard/compost facility that could be included in the current list of wood chip products sold by the city, however the need to look at other options for products/partners will be important to managing additional wood debris.

- Integrated Pest Management will be utilized. Integrated Pest Management (IPM) is a management system used to effectively protect the environment using common-sense practices. IPM's use current, comprehensive information on the life cycles of pests and how they interact with their environments. Using this type of management system in conjunction with other available pest control methods will be the most economical and least hazardous to people, property, and the environment.

- Utilizing trap trees to slow the spread of EAB will be considered. Research from the Midwest indicates trap trees can be an effective way of slowing EAB expansion. The process consists of girdling low value ash trees in EAB infested areas in the spring and treating ash on city property in the same area with insecticide. Beetles are attracted to the stressed (girdled) trees. Those trees are then chipped in the fall to prevent the beetles from completing their life cycle. Additional beetles attracted to the area are killed while feeding on ash trees treated with insecticide.

- Biological Control – Research is being conducted by APHIS to identify natural controls for EAB. Three parasitoid wasps are being studied that have the potential to slow the spread of EAB. Small groups of these wasps have been released for study in the Midwest and in Colorado with relatively positive results, but more research is needed before these insects can be used on a national scale.

Budget Implications for CUFD:

<u>EAB management costs</u>: CUFD will pursue budget increases to facilitate the removal and replacement of city ash trees as well as the chemical treatment of those ash deemed significant. Below are estimates:

- Removal cost: 500 ash trees <12" DBH or in fair/poor condition to be removed, on average it will cost $20 per caliper inch for each tree to be removed so $20 per caliper inch x 10" DBH avg x 500 Ash trees = $100,000
- Replacement cost: 500 trees x $400 cost to buy/plant/mulch/stake each replacement tree = $200,000

- $5.00 per caliper inch x 12" DBH avg x 200 treatable ash trees = $12,000 every 3 years

Other related costs for EAB management are likely to be incurred for establishing a marshalling yard, increased wood chipping, marketing wood utilization opportunities and purchasing and monitoring biological controls.

Increased workload/staffing: Greater staff time is being devoted to tree removals and this will only increase as EAB becomes established and Cheyenne's cottonwood population continues to age. Field staff may also be asked to assist office staff with street tree enforcement. An increase in CUFD's overtime budget may be necessary to accommodate this increased workload, along with establishing a budget for contracting removals will be considered. Additional staffing and equipment may also be warranted.

Tree inventory updates/additions: CUFD's street tree inventory is need of updating and expanding. 2013 was the last time the street tree inventory was updated and it only included a small portion (>20%) of the total street tree population of Cheyenne. Contracting this size of inventory will be expensive and will likely take several years to complete. Budget increases and grant opportunities will be investigated to cover this expense.

Citizen outreach/education: With only 2 staff dedicated to office positions within CUFD, which is down from 3 in 2010, staff will be greatly challenged to provide the EAB outreach needed to properly inform and educate the public. An intern position may be considered for a seasonal office support position to assist with EAB outreach. A budget increase to CUFD's part-time budget and possible grant opportunities will be explored to meet this need.

Street tree removal/replacement assistance program: Many neighborhoods in Cheyenne have a high percentage of large aging cottonwoods. Also, other tree species have recently been affected by storm events which has increased the number of dead and dying street trees. As EAB becomes established, this number will increase significantly. CUFD understands many residents cannot afford to remove and replace these trees which often delays the removal of hazardous trees, endangering residents. After tree removals are completed, residents often do not replant due to the additional cost. A program to assist lower income residents by allowing them to make payments to the city for tree removals and having trees replanted through Rooted in Cheyenne free of charge is recommended. A new budget line item for this program will be pursued with an annual budget in the $10,000 range.

Additional Resources:

United States Department of Agriculture – Animal and Plant Health Inspection Services, Plant Protection and Quarantine, www.aphis.usda.gov
http://na.fs.fed.us/fhp/eab

Wyoming State Forestry Division, www.wsfd.wyo.gov

Forest Health Management Page, http://wsfd.wyo.gov/forest-management/forest-health/forest-health-management

Colorado Department of Agriculture- Watch Your ASH! Program, www.emeraldashboulder.atavist.com

General EAB info: http://www.emeraldashborer.info/

Insecticide Options for Protecting Ash Trees from Emerald Ash Borer:
http://www.emeraldashborer.info/documents/Multistate_EAB_Insecticide_Fact_Sheet.pdf

Information about the dangers of moving firewood: https://www.dontmovefirewood.org/

Emerald Ash Borer Cost Calculator: http://extension.entm.purdue.edu/treecomputer/index.php

Wyoming Tree Owner's Manual: http://www.cheyennetrees.com/_pdfs/2015/January%202015/wytree-owners-manual-TOC.pdf

Ash Replacement Trees for Cheyenne:
http://www.cheyennetrees.com/_pdfs/2015/July%202015/TreesforCheyenne.pdf

Contact Information

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For an updated list of licensed arborist in Cheyenne Urban Forestry Division's website at: http://www.cheyennetrees.com/arborists.aspx.