City of Lexington, NE

Readiness and Response Plan – Emerald Ash Borer

Plan last updated on 1/27/2022

1. Purpose

Forest management plans provide a proactive strategy for mitigating wide- spread environmental impacts and unfeasible budgetary scenarios, while also serving as legal documentation of a reasonable and prudent approach to managing public tree canopy.

This readiness and response plan is a guideline for the processes and decisions to be followed in preparing for and responding to the introduction of Emerald Ash Borer or EAB, an invasive and destructive pest of ash trees.

Ash species are a significant component of the urban forest in many Nebraska communities. For communities with a high percentage of ash trees, a reactive approach to EAB can lead to large numbers of dead trees to remove in a short timeframe. This plan outlines the benefits and actions required to proactively manage the ash trees in order to mitigate the impacts to budget and overall canopy health.

2. Status of Plan

The EAB Readiness and Response Plan is a dynamic document and, as such, changes over time in response to new information. The most current Readiness and Response Plan for the City of Lexington will be posted at www.cityoflex.com

3. Community Forests Are Important

a. Why is our community creating a readiness and response plan?

In order to protect, restore and utilize forest resources it is in the community's best interest to be informed and prepared to tackle challenges that a community forest may present. One of those challenges can be the introduction of invasive species. Communities strive to stay ahead of this challenge by utilizing management plans and by doing so, they can successfully mitigate potentially detrimental impacts on budget, equipment, and staffing demands.

b. Canopy importance and the benefits of the community forest.

“Community Tree Canopy” refers to the layer of tree leaves, branches, and stems that provide tree coverage over the ground when viewed from above. Today, many communities are planting trees in an effort to become more sustainable and livable. Improving a community's tree canopy can have numerous benefits, including reducing summer peak temperatures and air pollution, increasing property values, providing wildlife habitat, improving aesthetic benefits, and creating social ties among neighbors. A robust tree canopy can also make the community more livable and economically viable by attracting new businesses and residents.

Tree canopy loss, whether due to human activities (such as construction) or natural events (such as a severe storm or the emergence of an invasive pest), can be instantaneous and dramatic. Increases in the community tree canopy resulting from new plantings, natural regeneration, and growth, are slow processes that take time and commitment. A community tree assessment can help a community measure, monitor, and improve tree cover over time, and combat threats that can lead tree canopy loss. Source: https://www.nrs.fs.fed.us/urban/utc/

4. Insect Details

a. Emerald Ash Borer (Agrilus planipennis) is a highly invasive insect, native to east Asia, that has killed millions of ash trees in the US and Canada. EAB was first discovered outside of Detroit, MI in 2002 and quickly began spreading to nearby states.

b. The movement of EAB across North America has been greatly accelerated by the movement of infested ash material, particularly firewood. The immature larvae of the beetle are able to survive in cut firewood and are then transported long distances where they can emerge as adults the following spring.

c. Adult beetles emerge beginning in late May and feed on ash leaves. Females lay tiny eggs in bark crevices, and the newly hatched larvae bore into the bark. The larvae feed on tissues just under the bark surface, disrupting water and nutrient flow within the tree and ultimately girdling the tree from the inside. Once EAB has been detected in a tree, death usually occurs within a few years.

5. Tree Details

a. Emerald ash borer is known to attack all species of ash native to North America, including those planted in yards and as street trees. Ash trees belong to the genus Fraxinus, and can typically be distinguished by opposite branching patterns, diamond shaped pattern on mature bark, compound leaves, and oar-shaped seeds on female trees. For an ash identification guide go to www.nfs.unl.edu.

b. Weakened or dying trees are more likely to be impacted first by EAB and will likely die more quickly than healthy trees. However, all unprotected ash trees are vulnerable to EAB, and all will eventually succumb to the insect. Ash trees killed by EAB become brittle extremely quickly, sometimes breaking in as little as one year after death. High winds and weather events can make tree failure even more likely. Thus, unmanaged ash trees become a huge safety risk.

c. EAB does not attack mountain-ash (this tree belongs to the genus Sorbus and is therefore not a true ash species).

6. Current Status in Nebraska (as of January 2021)

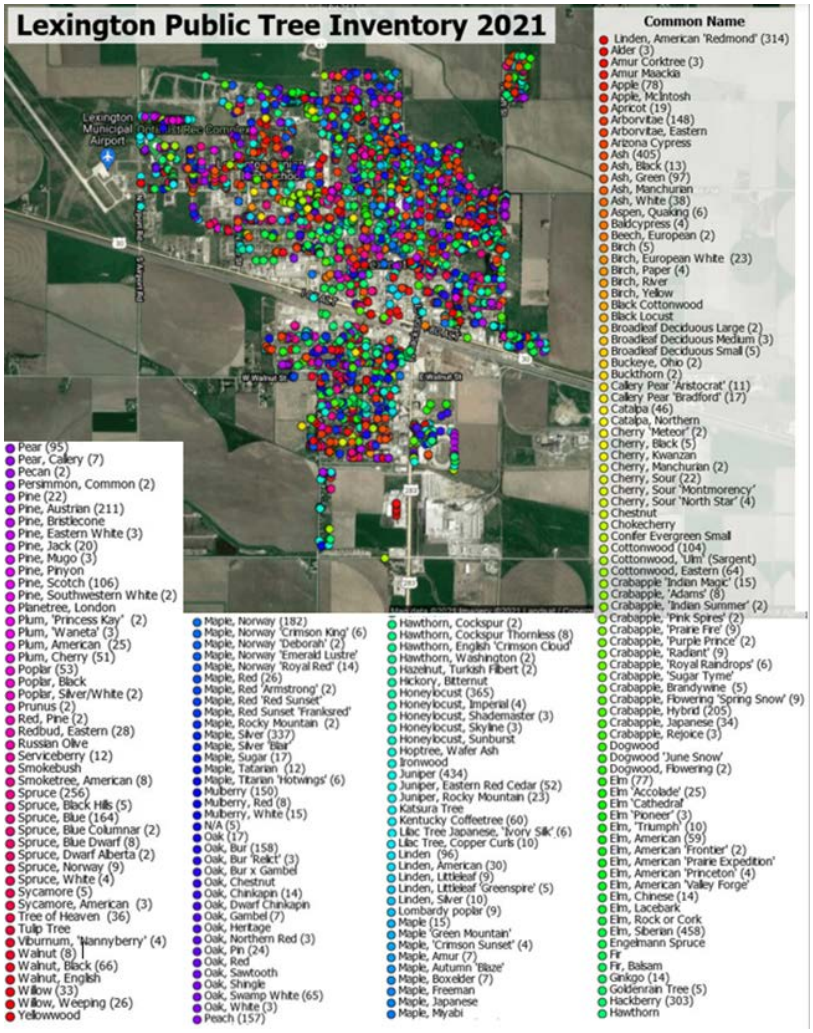
a. For the latest information about the status of EAB in Nebraska please visit: https://nfs.unl.edu/nebraska-eab

b. EAB infestations have been confirmed in the following Nebraska counties: Buffalo, Cass, Dodge, Douglas, Hall, Lancaster, Saunders, Seward and Washington.

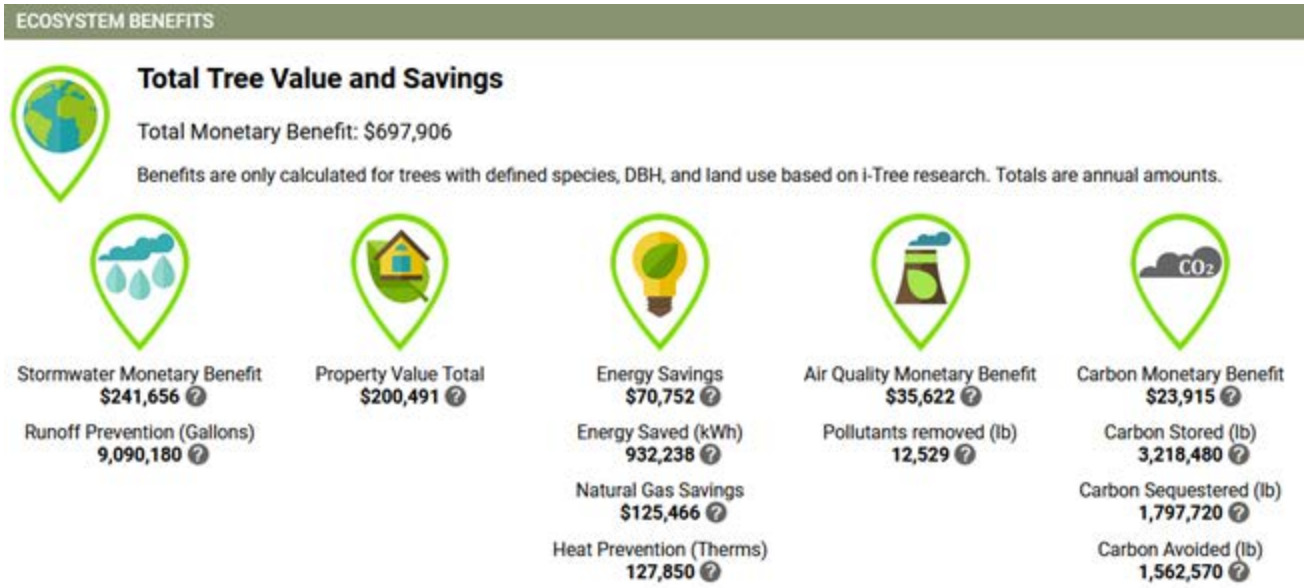
c. EAB infestations have been confirmed in neighboring states including Colorado (around Boulder and Fort Collins), South Dakota (Sioux Falls), and in many parts of Iowa, Missouri and eastern Kansas.

7. Community Planning Prior to EAB Detection

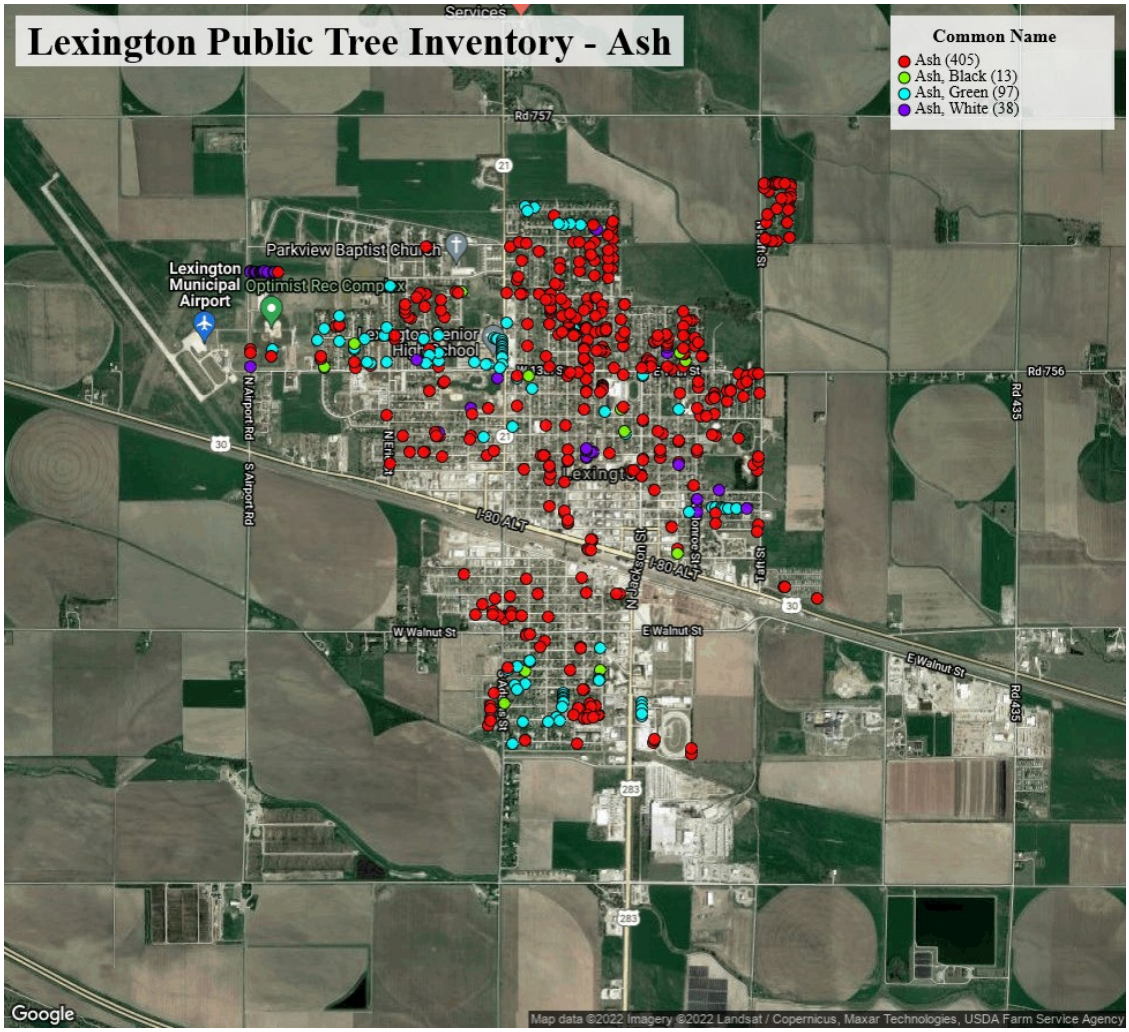
a. Inventory of the ash population



The Nebraska Forest Service worked with the City of Lexington Tree Board to complete a public tree inventory. For the purpose of evaluating the public benefits that trees provide, and only for the purpose of this inventory, tree data was collected on any tree on public property and any that stand twenty feet feet from the back of the curb along all streets located within the City limits. These trees are all considered to provide public benefit in some form. This set of data provides a broad understanding of the community tree canopy including, but not limited to, it's age and species distribution.



By utilizing iTree Eco and iTree Streets, a program developed to quantify forest structure, environmental effects and value to communities. A total of 6,490 trees were considered to provide some form of public benefit to the City of Lexington. Above is a summary of a few specific benefits which those trees provide on an annual basis. Learn more about iTree Eco and iTree streets here: https://www.itreetools.org/tools/i-tree-eco/i-tree-eco-acknowledgements



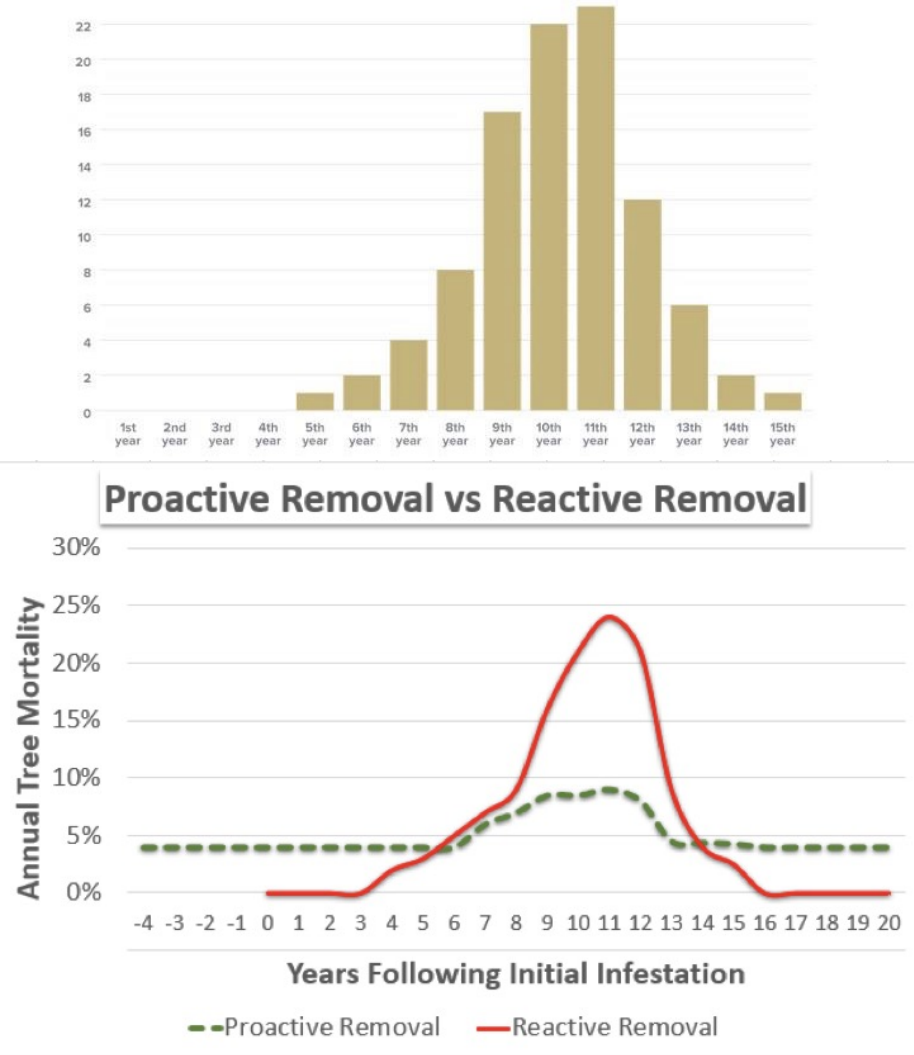
For the purpose of this plan, the focus is on the quantity and location of ash trees which belong to the family Fraxinus. Above is a map of the distribution of the inventoried ash trees. Data was collected on a total of 553 ash trees: there are 10 ash at the arboretum, 50 in the cemeteries, 58 in parks, 23 at schools, 4 at the Dawson County Historical Society and 408 street trees. The City only manages the park and cemetery trees.

b. The purpose of mitigating community impacts from EAB

i. Flattening the Curve – If nothing is done to manage EAB within a community, typically 10% of ash trees are killed in the first 4 years after EAB is discovered; about 70% of ash trees are killed in the next 4 years. This exponential ash mortality can potentially overwhelm municipal personnel and budgets.

Mitigating the cost and labor of removing your ash tree population is an important step in minimizing the fiscal setbacks that EAB poses. There are steps you can take to prepare for EAB even before it has been found in your community. Ash trees that are already in poor condition are a public safety concern and more attractive to EAB than healthy trees, and should be removed soon in order to mitigate future work load.

Percentage of ash trees killed in the years following an initial EAB infestation if no management action is taken:



c. What is the future of ash?

i. The community of Lexington will no longer plant ash species (Fraxinus) on public property and will highly discourage ash plantings on private property.

ii. Planning for replacement

1. Tree planting efforts take a number of years to begin giving significant benefits to the community, so it is important to proactively plan to replace ash loss in the urban canopy. Some factors to consider when choosing replacement trees include:

a. Mature size: Medium to large trees (> 25 feet) provide more community benefits and are better substitutes for ash than small, ornamental trees less than 25 feet tall. See a list of recommended trees here: https://plantnebraska.org/file_download/inline/febfb391-db57-4085-bd82-ce3777f5153b

b. Species diversity: When natural disaster strikes, species diversity is an important factor in urban forest resilience. An urban forest with many types of trees reduces the chance of an insect or disease impacting large numbers of trees. Many community foresters are promoting diversity targets of less than 10-20% of a single genus (oak, elm, maple, etc.) and less than 5-10% of a single species (bur oak, red oak, white oak, etc.).

c. Age diversity: By planting trees every year, communities can improve age diversity, thereby avoiding the loss of large numbers of trees to old age in a short time frame.

iii. Plant/Remove Ratios

The community of Lexington will adopt a plant/remove ratio of 1:1 and plant 1 tree(s) for every ash tree removed on public properties as a result of this plan.

d. Training and Outreach

i. Training Municipal Staff

• Recommend staff to become a certified arborist with the Nebraska Arborist Association or International Society of Arboriculture.

• Any staff member who will be administering any chemical treatments is required to obtain and maintain a commercial applicators license through the Nebraska Department of Ag.

• All Lexington workers and community staff will be required to attend an annual job safety training to ensure the highest quality of service to the community.

• The Tree Board and community staff will investigate and follow all recommended guidelines by the Nebraska Department of Ag and the Nebraska Forest Service for responsible dead wood handling and yard management.

ii. Community Public Outreach Recommendations

• The community of Lexington will provide all current status information on the City webpage at www.cityoflex.com

• A workshop for the public will be scheduled as needed to help educate community members on the status and management strategies of ash and EAB.

• The Tree Board and community staff will strive to utilize the local green industry to support business and provide adequate recommendations for services such as plantings, removals or management.

• In the event new information arises, the City staff will directly notify local media through press releases to ensure the public stays informed.

8. EAB Detection

a. Protocol for reporting new cases

Maintain confidentiality until a detection has been officially confirmed. Do not contact media or share information.

i. Many other pests mimic EAB and the damage it causes.

ii. An insect specimen must be collected by Nebraska Department of Agriculture (NDA) and verified as EAB by the U.S. Department of Agriculture.

iii. Only after confirmation and an NDA press release, should local officials release information to the public.

iv. Nebraska Forest Service and NDA will work with the community to prepare for the announcement.

b. Reporting suspect trees or insects

i. Record location of the tree or insect.

ii. Take pictures of holes in trunk, tunneling, or the insect if possible.

iii. Collect insect if possible.

iv. Local county extension educator or forester may be able to prescreen suspect cases.

v. Contact the city parks department **AND** contact any of the following collaborating agencies:

Nebraska Department of Agriculture, 402-471-2351
David Nielsen, State Survey Coordinator, David.nielsen@nebraska.gov
Julie Van Meter, State Entomologist, Julie.vanmeter@nebraska.gov

Nebraska Forest Service, 402-472-2944
David Olson, Forest Health Specialist, Davidolson@unl.edu
Laurie Stepanek, Forest Health Specialist, Lstepanek2@unl.edu

9. Community Response Following EAB Detection

a. Community Regulations

Please refer to the ordinance section at the end of this document.

b. Removals

i. Pre-emptive removal of live ash trees is better than removal of dead trees. Trees that have died from EAB are extremely brittle and unpredictable when removing and are therefore dangerous to remove.

ii. Removing live trees in summer causes EAB adults in the crown to disperse. To limit EAB spread, remove live trees between October and March. Additionally, soils could be frozen during this time which can help limit soil compaction from heavy equipment.

iii. Prioritize removals: Ash trees in high traffic areas should be given higher priority.

c. Managing Wood Waste

i. To limit the spread of EAB within a community or quarantine zone, the NDA recommends the following best practices:

1. Firewood- Firewood should be kept within 10 miles of where the tree was felled. It is best to season the wood for two years prior to moving it to limit the spread of EAB.

2. Woodchips- Should be chipped onsite if the tree was felled between May and September to limit the risk of spread. Woodchips should be checked for larger debris, which should be removed or mulched. Woodchips should be less than 1 inch on two sides in order to kill most of the EAB in the wood.

3. Debris- Keep all other debris within 15 miles of where the tree was felled. As a general rule, the less movement the better.

ii. Debris from EAB infested wood may pile up quickly. Designate a site for the influx of material so that normal operations will not be overrun.

iii. Identifying a separate location for an ‘Infected by Pest-Do Not Use’ pile of waste lumber at the public facility can limit the spread of materials by preventing other persons from transporting the lumber away from the site for their use (ex: Local tree worker takes down pest infected tree, delivers lumber to public facility, woodworker picks up the lumber for milling or other purposes, thus unknowingly spreading the pest).

iv. It is important to establish a timetable to ensure each community is able to deal with ash debris in a timely manner. Partnerships with other communities should be communicated with NDA. Since equipment to process large numbers of ash trees can be costly, consider partnering with neighboring communities to share dump sites or equipment such as wood chippers.

v. Designated Ash Disposal Site
The Lexington Yard Waste Disposal Site is available to Lexington residents 24/7 at no cost. Only yard waste can be disposed at this site, no lumber, furniture, appliances, household refuse, plastic bags, etc... Directions to the site: from Highway 283 (Plum Creek Parkway), go east about a half mile on Walnut Street. The site is on the north.

vi. Outside Partner Collaboration
Not applicable.

d. Treatments

i. Chemical treatments for EAB, if used, should begin only when EAB has been detected in, or within, 15 miles of the community. This 15-mile recommendation strikes a balance between protecting valuable trees and limiting the negative effects of unnecessary treatments.

ii. Soil Treatments

1. Limited effectiveness in large trees (over 15 inches in trunk diameter)

2. Should not be applied near sources of water or to areas with flowering plants (which could transmit the chemical to honey bees and other pollinators).

3. Applied once per year in spring.

Iii. Trunk Sprays

1. Effective on trees up to 22 inches in trunk diameter

2. Must be applied every year

3. Active ingredient dinotefuran is more expensive than the soil-applied active ingredient (imidacloprid)

4. Potential for exposure to non-target organisms in the environment

iv. Trunk Injections (requires licensed pesticide applicator)

1. Places the pesticide directly in the tree, which limits exposure to non-target organisms.

2. Causes internal damage to the trunk. Accumulative damage will shorten the life of the tree, even as the treatment is controlling EAB.

3. Injections of the most effective ingredient, emamectin benzoate, are effective for 2 years.

v. Utilizing short-term treatments to space removals

1. Ash tree mortality across an entire urban forest can be slowed (flattening the mortality curve), which can minimize adverse budgetary and safety repercussions.

vi. Long-term treatments to help protect high-value trees

1. Good candidates for treatment should be of significant value, be in very good condition (especially have a history of proper care) and be properly sited in the landscape. More information: https://nfs.unl.edu/publications/selecting-trees-emerald-ash-borer-treatment-0

vii. Public Ash Management

At this time the City of Lexington has no current intentions to treat any publicly managed ash trees in response to Emerald Ash Borer. According to the 2021 tree inventory data, 553 ash are located on properties owned and managed by the City. The City staff will monitor the health of these trees and address them as their health declines and if it is deemed necessary, they will remove them.

e. Communication of ongoing efforts

Residents of Lexington may contact the City office for accurate information regarding EAB status and mitigation efforts.

10. Disclaimer

The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the Nebraska Forest Service of any product or service to the exclusion of others that may be suitable. (National Framework. Pdf /USDA)

Pros and Cons of Emerald Ash Borer Treatment
https://nfs.unl.edu/publications/pros-and-cons-emerald-ash-borer-treatment

Trees to Replace Ash
https://nfs.unl.edu/ash-replacements

See Primary Processors directory for more information on mills:
https://nfs.unl.edu/timber-buyers
https://nfs.unl.edu/documents/ruralforestry/2013%20primary%20processors%20ENTIRE.pdf

Other Documents
Lexington CTAP Report.pdf

Ordinances Community Tree Ordinances to Follow

ORDINANCE NO. 2002

CITY OF LEXINGTON, NEBRASKA

AUGUST 23 1994

ORDINANCE NO. 2002

AN ORDINANCE TO AMEND CHAPTER 26 OF THE LEXINGTON CITY CODE; TO CHANGE PROVISION FOR MAINTENANCE OF TREES ON PUBLIC RIGHT-OF WAY; TO PROVIDE PENALTIES AND FOR ABATEMENT; TO REPEAL ORIGINAL CHAPTER 26, AND ALL OTHER ORDINANCES OR SECTIONS OF ORDINANCES IN CONFLICT HEREWITH; AND TO PROVIDE FOR AN EFFECTIVE DATE AND FOR PUBLICATION IN PAMPHLET FORM.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF LEXINGTON, NEBRASKA AS FOLLOWS:

Section 1. That Chapter 26 of the Lexington City Code is hereby amended to read as follows:

Sec. 26-1 Diseased Dead or Dying Trees Declared Nuisances and Prohibited; Dutch Elm Disease;

(a) Trees of all species and varieties of elm, zelkova and planera infected with the fungus Ceratocystis ulmi (Dutch Elm Disease), as determined by laboratory analysis, are hereby declared to be a public nuisance, and shall be removed and burned.

(b) Trees, or parts thereof, of elm, zelkova or planera in a dead or dying condition that may serve as breeding places for the European Elm Bark Beetle (Scolytus multistriatus) are hereby declared to be a public nuisance, and shall be removed and burned. (Ord. No. 1160, Sec. 1)

(c) Trees of any species in a diseased, dead or dying condition are hereby declared to be a public nuisance and shall be removed.

Sec. 26-2 Removal of Trees; Notice of Landowner Responsibility:

If trees on private property or in public street right-of-way adjoining private property are found to be infected or in a dead or dying condition, the City Manager shall give to the owner, agent, occupant or person in possession, charge or control of the premises where the same are situated, written notice by personal service, where owner is a resident of the City and present in the City, or otherwise, by certified mail of the existence of such disease or of the dead or dying condition of such trees or parts thereof, and require the removal of the same under the direction and supervi-

sion of the City Manager within 30 days from receipt of the notice. Such notice shall also notify such person that if such trees are not removed within 30 days, the City will proceed with the removal of the same, and may assess the cost thereof against the property benefited.

Sec. 26-3 Removal of Trees;

After due notice has been given the owner, agent, occupant or person in possession, charge or control of the premises, it shall thereupon become his duty to cause diseased or dead trees to be removed, under the direction and supervision of the City Manager. If the owner, agent, occupant or person in possession, charge or control of such premises fails, neglects or refuses to remove such trees, the City Manager may, 30 days after notice is given, enter upon such private property or Street right of way and proceed with the removal of the same, and the cost thereof may be levied and assessed upon the lot or piece of ground so benefited in the same manner as other special taxes for assessments are levied and assessed.)

In lieu thereof, the person charged with such removal may enter into an agreement with the City that such work be accomplished by the City at his expense and the expense and any interest shall be and is hereby declared to be a lien upon such property whereon such tree was situated from the time the same becomes due until paid. The agreement shall be in such form as the City Attorney may prescribe, to be filed in the office of the Register of Deeds of the county.

Sec. 26-4 Removal of Trees on City-Owned Land.

Infected trees, or trees or parts thereof in a dead or dying condition, on City-owned lands, other than Street right-of-ways, shall be removed by the City Manager upon actual notice that such condition exists, and the cost thereof shall be borne by the City.

Sec. 26-5 Enforcement of Chapter.

The City Manager is charged with enforcement of this chapter, and to that end may enter upon private property at all reasonable hours for purposes of inspecting trees thereon, and may remove such specimens as are required for purposes of analysis. It shall be unlawful for any person to prevent the City Manager from entering on private property for purposes of carry-

ing out his duties hereunder, or to interfere with such City Manager in the lawful performance of his duties under the provisions of this chapter.

Sec. 26-6 Violation; Penalty.
Any person who shall violate or refuse to comply with the enforcement of any of the provisions of this Chapter shall be deemed guilty of a misdemeanor and punished as provided in Section 1-7 of the Lexington City Code. If it is established that a nuisance exists, the Court may, together with the fine or penalty imposed, enter an order of abatement as part of the judgment in the case.

Sec. 26-7 Penalty for Violation of Chapter not to be Waiver of City's Right to Collect Cost of Removal of Tree.
Imposition of any penalty for a violation of this chapter shall not be construed as a waiver of the right of the City to collect the cost of removal of such trees in accordance with the provisions of this Code, in such case made and provided, where the City has removed such trees in accordance with the provisions of this chapter.

Section 2. That original Chapter 26, together with all ordinances or sections of ordinances in conflict herewith are hereby repealed.

Section 4. That this Ordinance shall be published in pamphlet form and take effect as provided by law.

Passed and approved this 23rd day of August, 1994.

Mayor

Attest:

City Clerk

CITY OF LEXINGTON Seal NEBRASKA