

# UNIVERSITY OF KANSAS

## ASH TREE MANAGEMENT PLAN

### Responding to the Emerald Ash Borer

#### INTRODUCTION AND BACKGROUND

Emerald Ash Borer (EAB) was found in Lawrence, Douglas County, and surrounding counties in 2015. Once EAB is in the area, it has the potential to infest untreated Ash trees within 5-10 years. It is important for The University of Kansas to address the threat. With treatment and removal of unhealthy Ash trees on campus we hope to reduce the impact and spread of EAB. Over 250 Ash trees have been identified on the Lawrence Campus. This disease will have a significant impact on the campus landscape in the coming years.

Ash trees are the only trees affected by EAB, and all species of Ash found in this country are susceptible. EAB was identified in the United States in 2002. It is a pest that originated in China. The female insects lay their eggs on the bark of the Ash trees. The larvae bore through the bark to feed on the inner layers of the cambium, the layer beneath the bark that serves as the tree's vascular system. The feeding of the larvae disrupts the trees ability to transport nutrients through the trunk and branches. Dieback is first seen in the crown of the tree and trees usually die within two years.

The Kansas Department of Agriculture has quarantined Douglas County for the EAB. The quarantine limits the transport of Ash trees as well as the movement and use of Ash wood.

With the impending arrival of EAB on campus, a 5-year plan for the mitigation of damage caused by the EAB is proposed.

#### GOALS AND STRATEGIES

1. Take a proactive, methodical, and measured approach to manage and slow the spread of EAB on campus. While treatment of healthy trees is an option, it is not a guarantee against infection by the EAB.
2. Establish parameters for trees to be treated, trees to remain untreated, and trees that should be removed and replaced at the earliest possible time. Design and Construction Management (DCM) will work with Facilities Services Landscape (FS Landscape) to determine the appropriate approach for each Ash tree on Campus.
  - Treat those Ash trees that are determined to be healthy and in prime locations, where the loss of those trees will have a significant impact on the campus environment (aesthetic, shade, etc.). The trees to be treated initially are iconic trees or large healthy specimens on the main part of campus.
  - Seemingly healthy Ash trees that are not in prime locations will not be treated initially, but will be monitored closely for any signs of decline or infestation.
  - Infested or distressed Ash trees will be removed, since these conditions attract EAB and may speed the spread of EAB to healthy Ash trees in the area.
  - Develop an immediate plan for replacing Ash trees removed and a long term plan for replacing Ash trees with other species over a period of five years.
  - Monitor the spread of EAB on campus on an annual basis. Review and revise the plan in response to the conditions.

## MANAGEMENT

1. Maintain the health of all trees on campus and especially Ash trees. Use industry standard best management practices on an on-going basis to protect this resource.
2. Facilities Services Landscape will be responsible for maintaining and overseeing the treatment and removal of Ash trees.
  - Final decision of which Ash trees to treat, maintain, or remove will be made by FS Landscape and DCM.
  - FS Landscape will coordinate the preventative treatment of Ash trees.
  - DCM will assist in the documentation of Ash trees removed, selection of replacement tree varieties, and coordinating planting efforts.

## APPROACH

An inventory of Ash trees on campus was completed in 2014. Approximately 250 Ash trees were identified. Trees were rated by importance and by condition. Important trees include those that are in significant locations and those of large and majestic size. Condition rated the health and appearance of the tree.

## TREATMENT

The recommended treatment is systemic insecticide that is effective for two years. It is injected into the tree. Once started treatment needs to be done for the life of the tree to maintain the protection.

- Trees that scored the highest in both the location and condition category are deemed desirable, in good health, and in highly prominent areas on campus. These are the trees that will be treated the first year. They will receive insecticide treatment (Tree-age® or similar) on a biennial basis for the life of the tree.
- Initially, 20 ash trees have been identified to be treated.
- A company qualified to apply pesticides will be hired to treat the trees, initially. It may be cost effective to develop in-house expertise if a large number of trees are to be treated on an on-going schedule.
- FS Landscape will monitor treated trees to ensure treatment success. Once a tree is infected the treatment is no longer effective.

## REMOVAL

FS Landscape will be responsible for removing any Ash trees that are showing signs of distress or infestation in a timely manner.

- Ash trees that are unhealthy, damaged, or missing more than 25% of their canopy should be removed.
- FS Landscape will determine the appropriate manner to dispose of trees removed in accordance with the state quarantine.
- The removal of the tree will include removing the entire above ground structure and grinding out the stump and major roots.

## REPLACEMENT

Ash trees that are removed as part of the EAB Management Plan will be replaced with a comparable species, determined by FS Landscape and DCM.

- All Ash trees removed should be replaced in a timely manner. The tree replacement policy stipulates that any tree removed should be replaced with two trees, which will be located in the general vicinity of the tree removed, if that is the appropriate location. If there is not room for two trees or if the location is not appropriate, the trees will be put in the “tree bank” to be located in appropriate and needed locations on campus.
- The intent of this approach is to increase the overall tree canopy with healthy species appropriately spaced and located, rather than replace by the numbers.
- Replacement trees will be a minimum of 3” caliper and will be planted and maintained by FS Landscape, except when Ash trees are removed as part of capital construction projects, utility companies performing maintenance, City of Lawrence right-of-way maintenance, or similar circumstances in which cases the contractors or responsible parties will be asked to plant replacement trees at locations acceptable to KU.

## PLAN ASSUMPTIONS

There is no known cure for EAB at this time. That said, there is a chance that not all Ash trees will be affected. Our plan should address several possibilities at the same time, stressing efforts to keep the Ash trees as healthy as possible. As more local evidence of the pest becomes apparent the approach can be adjusted. At this time we should remove the trees in poor health, treat the iconic trees, and monitor healthy specimens.

- Removal: Systematically remove Ash trees over a five year period starting immediately. The first removed should be those in poor condition, and those at the beginning or end of their life cycle. Target removal of half the Ash trees over a five year period or 25 per year.
- Treatment: Initially treat the 20 most iconic ash trees. Additional trees may be added. Treatment will need to be done every 2 years.
- Replacement: Replant trees removed at a 2 to 1 ratio on a yearly basis.
- Monitoring: Examine the remaining trees reviewing their condition yearly. Remove any infected tree immediately.

## COST

An annual budget for the care, treatment, removal, and replacement of Ash trees should be established based on the following factors:

- The cost of treatment is approximately \$15 per inch of diameter of the tree. Assuming the average size of a tree to be treated is 20 in diameter, the cost per tree will be \$300.
- The treatment will be needed every year or two for the life of the tree. It can be assumed that the cost will increase as the tree grows and to account for inflation.
- The average cost to plant a 3” caliper tree is \$500.
- The typical cost to remove a tree is \$500.

## PROPOSED BUDGET

Activity	Details	Cost per Tree	Total Cost
Treatment	Pesticide for 20 trees	\$300	\$6,000
Removal	Remove 25 trees per year	\$500	\$12,500
Replacement	Plant 50 trees per year	\$500	\$25,000
Annual Budget			\$43,500