Green Action Project Proposal: Spring 2019

Educating the Campus Community about Emerald Ash Borer (EAB) and the Potential Impact on Our Approximately 250 Ash Trees

Project Leader: Dr. Cathie Lavis—Professor Landscape Management, Department of Horticulture and Natural Resources

Student Project Chair: Tyler Clements, Park Management and Conservation

K-State Facilities Cohort: Joe Myers—Physical Plant Supervisor, Facilities Grounds Maintenance

Student Mentoring Team: Kim Bomberger—Associate Community Forester, Kansas Forest Service; Randy James—Owner and Consulting Arborist, Growing Concerns, Manhattan; Judy O’Mara—Instructor & Diagnostician, Department of Plant Pathology

Collaborating Student Group: Spring 2019 30+ students in: HORT 585: Arboriculture

Introduction and Background:

Kansas State University was established in 1858, as Bluemont College; it was the first land-grant college in the country by the provisions of the Morrill Act. The main campus was originally three farmsteads, housing only a few trees, (above photo). Some of the original trees are still standing; for example, one is an Eastern red cedar with concrete cavity fill, located just to the north of Anderson Hall. At the western boundary of the campus, now known as the, “Quad,” stood two large thornless, honeylocust trees. These two honeylocust marked the fence line on Reverend Gales’ property. Reverend Gale operated a tree nursery, selling thousands of trees to Kansas residents. Today, one honeylocust still stands in that location surrounded by Farrell Library, Waters, Leasure and Willard Halls. Gale was the first superintendent of the Department of Horticulture, 1870-1879. During his tenure, approximately 100 species of trees and shrubs were sent from Harvard Botanical Gardens and planted in order to determine how they might withstand Eastern Kansas conditions. Students helped plant, prune and graft the plant materials. With Gale’s foresight, shelterbelts and evergreens were also planted. The large, old Austrian pine located just to the north of the clock triangle on the main campus corridor was one of these transplants in the early 1990’s. The extraordinary green ash in the Quad was part of the shelterbelt. Sadly, many of our historical, specimen trees are declining due to age, construction damage, or lack of maintenance funding.

Today it is hard to image that our beautiful treed campus had only a few trees except for the occasional cottonwood, red cedar, boxelder and honeylocust when the college began in 1863. In 1879, Dr. David Fairchild in his book, “The World Was My Garden,” he compared our campus to a “cheerless, treeless wasteland,” a telling remark from the famous worldwide plant collector. This rich history of our campus landscape expresses
how our campus grew from a treeless site to the arboretum it is today. The treed future of our campus depends upon continual planting, care and ultimately, respect for our trees. In 2013, enthusiastic arboriculture students and key facility individuals worked diligently to achieve the title of a recognized, Tree Campus USA, awarded by the Arbor Day Foundation. Maintaining this title requires a yearly renewal and pledge of continual projects that supports the care and replenishment of our trees; educating the campus community as to the benefit of trees is essential to this cause, and a central requirement to maintain this title. Students drive this cause and project.

Our key objective as a recognized Tree Campus USA is the continual campus-wide education about our trees and their environmental impact, aside from their beauty and the shade they provide; resplendent are their many benefits and contributions to a sustainable environment. Their care is critical to future generations. We believe if people understand trees, they will respect, appreciate and value them more. Our accomplishments since becoming a Tree Campus USA in 2013 have been the installation of permanent, educational signs located near 18 spectacular campus trees, planting over 30 new trees and providing various educational opportunities during the week of Arbor Day, always celebrated the last Friday in April, in Kansas. We must continue to expand this educational mission so that our treed campus is well maintained and this legacy is continued for future generations. Our initiative must continue with a new project that continues to “speak for our campus trees.” As we begin a new year, there is a common question we often pose to ourselves . . . “what am I going to do this year to make myself and the world around me better?” Let us make an impact with this project that will help insure the legacy of our campus trees; they hold the keys to the University’s past while influencing its future.

The Foundation for this Proposal: Walking around our campus brings a sense of pride, the unique limestone buildings and the attractiveness of the landscape, balanced by the numerous magnificent, historical trees. Have you ever wondered about the care of our trees?

For example, who decides where new trees are to be located; how many are planted each year; how many trees do we currently have on our main campus; what numbers comprise the various species and varieties; which ones are the oldest, and, how are they maintained for health and safety? Are there strategic plans in place for controlling insect or disease infestations or for maintaining tree structural safety? What about a tree-care budget; what is the yearly cost of tree maintenance, not to mention all of our campus landscaping? Most students may never question the care of our campus trees, although they may appreciate them, what would they think if they were gone? Past generations did a remarkable job planting and maintaining trees for our benefit and pleasure; a noble deed, often forgotten, we too must do similar noble and honorable deeds for future generations.

Project and Implementation: Educating the Campus Community about the Eminent Invasion of the Emerald Ash Borer (EAB) and the Continued Establishment of More Trees on Our Campus

Emerald Ash Borer Background and the Threat Posed to the University Ash Trees: The emerald ash borer (EAB) a wood-boring beetle and an invasive pest native to Asia. EAB was first discovered in North America in 2002 in the Detroit, Michigan area. Since that time, the insect has killed millions of ash trees (Fraxinus species) and caused thousands more to be removed in attempt to slow its spread. Fraxinus is a genus of flowering plants in the olive and lilac family, Oleaceae. It contains 45–65 species of usually medium to large trees and EAB will attack all types of ash trees. On our campus, we primarily have green (Fraxinus americana) and white ash (Fraxinus pennsylvanica), and at one time our campus was home to several lovely blue ash (Fraxinus quadrangulata). Sadly these were damaged during construction activities on the north side of McCain and had to be removed a number of years ago. Since initial EAB discovery, the core area affected by the beetle has expanded to 31 states and two providences in Canada.
On August 29, 2012, the first-ever presence of EAB in Kansas was confirmed at Wyandotte County Lake. Since that first detection in Wyandotte County. Since 2012, seven other counties in Kansas have confirmed the presence of the EAB: Johnson, Leavenworth, Douglas, Jefferson, Atchison, Doniphan, and in June 2018, Shawnee County, Topeka is located in Shawnee County, was added to the list, it is headed west.

Developed an Emerald Ash Borer Management Plan in 2018:

- Acknowledge, manage, and minimize the ecological, economic, and aesthetic effects that the emerald ash borer (EAB) will have on the K-State campus.
- Numbers of ash trees on main campus and other properties

With this information in mind, Kansas State University developed a management plan. To date, we have located and inventoried all ash trees on our campus. Inventory information regarding all of the ash trees is critical to the management decisions. The inventory was completed in July 2017 by members of the campus and Manhattan communities. Chip Winslow, LA Professor, developed the inventory records, which are now part of the growing and updated tree campus inventory. At this time the complete tree campus inventory is not updated but the ash trees were done in order to devise a strategic plan.

Plan Objectives:

- Minimize the impact and potential for loss of ash trees on K-State properties using best-known science at the lowest cost to the University
- Limit the physical and fiscal liability imposed by an infestation of the EAB
- Protect students, faculty and staff, and visitors to the campus from hazardous trees and conditions
- Maintain the beauty and efficacy of University properties

Purpose and Scope of Plan

- Intended to serve as the guidelines and prescriptions for preparing for and responding to EAB infestations on University properties.
- Develop a communication strategy for students, faculty and staff, alumni, and visitors to K-State
- Develop a tree replacement program
- Target particular trees to protect using subscribed treatments
Public Education and Communication: Ty Clements is the student project leader, he will work with Dr. Lavis to organize and guide the educational events. Workshop dates and times will be posted on social media to capture student interest and attention. Campus educational opportunities will occur on Thursday, April 26 and Friday April 27, Arbor Day. In addition, three trees will be planted in strategic locations. The tree inventory will be used to determine which trees should be removed first due to their current condition, this will aid in the tree planting strategic plan.

- Outreach plan initiated to inform students, faculty and staff, alumni, and visitors about EAB
  - Workshops and presentations done in conjunction with Tree Campus USA activities during the spring semesters
  - Social media outlets
  - K-State Today
  - K-State website
  - Determine will be in charge of communication

Benefits to Kansas State Student Body: The far-reaching goal is education and awareness of our campus trees. Aside from their grace and beauty to our homes and communities, trees are critical to sustaining our environment. Trees help reduce climate change by removing carbon dioxide from the air, storing carbon in the trees and soil, and releasing oxygen into the atmosphere. They offer cooling shade, block cold winter winds, reduce the energy needed to cool our homes, they attract and provide homes for birds and wildlife, purify our air, prevent soil erosion, and clean our water. Urban areas without trees can become “heat islands,” with significantly higher temperatures than other commercial and residential areas with trees. The loss of over 200 ash trees over the next years will have a noticeable impact on our campus.

Project Administration and Budget

Dr. Lavis, as the project administrator, will ensure the success of this project. Volunteer student coordinators will work closely with the student project leaders to help develop the educational workshops and the other planned activities that will also receive additional help from students enrolled in HORT 585: Arboriculture

Funding Description and Requested Funding:

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<tr>
<th>Funding Description for Spring 2018</th>
<th>Clarification of Funding Use</th>
<th>Total Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyler Clements and two other HORT 585 students</td>
<td>$7.50/hrs.; 2-5hrs/ week each for 10 weeks</td>
<td>$450.00</td>
</tr>
<tr>
<td>Various supplies to support educational posters and various other props</td>
<td>Several tables will be located in high traffic areas on campus with various tree ID booklets, Emerald Ash Borer brochures and other training products</td>
<td>$300.00</td>
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<tr>
<td>Four—2-inch caliper trees to be planted during the week of Arbor Day</td>
<td></td>
<td>$750.00</td>
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<tr>
<td><strong>Total Funding Requested</strong></td>
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<td><strong>$1500.00</strong></td>
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Timeline of Activities: Spring 2019

January/February:
• Project introduced to HORT 585: Arboriculture class by student project leaders.
• Kim Bomberger will attend class and discuss the EAB management strategy plan. This will be attended by various other campus facility members so student learn how this interaction works and is critical to development.
• Arboriculture students will begin planning the educational workshops and brochures.
• Arboriculture students will work with grounds facility leaders to determine tree planting locations.

March:
• Student project leaders will develop the impact surveys to determine educational impact of the project.
• Student project leaders will work with arboriculture students to develop educational posters.
• Arboriculture students will go to Blueville Nursery and select the three trees to be planted.
• Project leaders will coordinate with Blueville Nursery on deliver details.

April:
• Ty Clements will work with Loleta Sump to comply with all necessary paperwork for the campus activities and respective locations of the tree-educational workshops.
• Ty Clements will locate two campus trees for climbing activities and secure all the property safety and climbing equipment.
• Arboricultural students will work with student project leaders to develop a working schedule of volunteer sign-up times during the days of April 25 and 26 so events are run smoothly.

May:
• Project leaders will review survey results and make recommendation for Arbor Day 2019 and assist with Tree Campus USA summaries for Standards 4 and 5 requirements.