



CITY OF BLOOMINGTON
parks and recreation

EAB MANAGEMENT PLAN
CITY OF BLOOMINGTON STREET TREES
2015 -- 2019

The City of Bloomington highly values its urban trees and all the benefits they provide, as evidenced by Bloomington's status as Indiana's first Tree City USA. Bloomington has earned that distinction every year since 1984, a clear reflection of the City's commitment to the health and well-being of its urban trees. Additional resources have been allocated to the Urban Forestry program over the years to expand services that include removing hazardous trees, and planting, pruning, inspecting and managing more than 14,000 street trees throughout the city. The Urban Forestry program must also proactively combat an increasing number of biological and climate-related threats to Bloomington's urban trees.

The latest challenge to Bloomington's Urban Forestry program is the *emerald ash borer*. Emerald ash borer (EAB) is a beetle native to Asia that attacks and destroys ash trees. It was first discovered in Monroe County in 2008, and the Indiana Department of Natural Resources confirmed the presence of EAB within city limits in 2012. EAB infestations are fatal to ash trees; unless the tree is treated with a chemical insecticide, the tree will almost certainly die.

This management plan addresses "street trees" (trees in the public right of way, typically in a tree plot located between the street edge and sidewalk) that are public property and fall within the management responsibility of the City of Bloomington Parks and Recreation Department. Street trees were last inventoried in 2007. An updated inspection of City ash trees was completed in March 2015. Park trees, due to their numbers and limited accessibility in more remote properties, have not been inventoried.

EAB Street Tree Management Options:

- **Total removal of ALL ash trees.**

Factors for consideration: Percentage of ash trees in street tree inventory, location and concentration (ash tree-lined streets or disbursed locations), costs for removal and disposal, stump removal and replanting, use and availability of in-house and/or contracted resources, loss of canopy and the trees' beneficial attributes, and available funding.

- **Preservation of SOME ash trees.**

This approach assumes some EAB damage or mortality to ash trees has already occurred and focuses on utilizing chemical injection treatments to save an optimal amount of ash tree canopy. Factors for consideration: Public opinion regarding restricted chemical use, record keeping and administrative costs, subjective criteria to justify the use of chemical injection treatment of certain trees, safety, training, use and availability of in-house and/or contracted resources, and available funding.

- **Preservation of ALL ash trees.**

This approach assumes the EAB has not had a substantial impact on trees in the community and requires chemical injection treatments of all inventoried ash trees. Factors for consideration: Unknown EAB infestations, public opinion regarding restricted chemical use, logistical and record keeping challenges, record keeping and administrative costs, incurring the expense of saving trees with structural, disease, or other non-EAB related conditions that will require their eventual removal, safety, training, use and availability of in-house and/or contracted resources, and available funding.

Planned Management Approach:

Bloomington Parks and Recreation shall pursue a management plan that calls for a combination of removals and chemical treatments. It is estimated that approximately 40%-50% of the City's inventoried ash street trees will be removed over the next four years and replaced with a different species. The number/percentage of ash removals will be determined annually by an inspection of the tree canopy upon spring bloom and by available funding.

Inventoried ash trees that exhibit healthy canopies and meet the evaluation criteria to qualify for chemical injection treatment will be treated by licensed contractors. Chemical treatments require the use of *Imidacloprid* insecticide injected directly into the trunk of the tree. Trunk injections involve drilling through the bark and into the outer sapwood at the base of the tree. The optimal time for chemical treatments is between mid-May and mid-June. Treatments are typically done every three years using a low to moderate dose of chemical. The amount of chemical injected is determined by the DBH (diameter at breast height) of the ash tree.

The use of contractors versus in-house resources to conduct chemical treatments is based on many factors, and is consistent with existing practices and policies related to the maintenance of park grounds, public landscape areas, and street trees. Funding commitments to train City employees and equip them with the required protective safety equipment is limited, while allocating the majority of employee time solely to EAB chemical treatments for several years would result in a significant reduction in the Urban Forestry program's ability to perform other required functions such as tree pruning, planting, and hazardous tree removal. The safe, timely, and efficient performance of these urban forestry services is an important issue of concern to community residents and adjoining private property owners.

Ash trees in City parks will be assessed in maintained areas of park properties where the presence of a hazardous tree (due to EAB infestation or other conditions) may pose a threat to the safety of the recreating public or to structures and features within the park. Chemical injection treatments for park trees will be minimal and limited to trees that are located within these maintained areas; are prominent features of the park; provide shade; are of specimen-quality size; and meet the evaluation criteria warranting chemical treatment to support their survival.

The decision whether the ash street tree will be removed, or chemically treated for long-term survival, will be based on the following evaluation criteria as determined by the City of Bloomington Urban Forester:

- **Structural/Form** - Tree exhibits one or more of the following undesirable growth conditions that cannot be remediated: Girdling roots, multiple trunks, poor branching, low large branches, trunk wounds, visible structural defects
- **Canopy Health** - Tree exhibits 30% or greater canopy dieback.
- **DBH Size** - Tree is 12" DBH or smaller
- **Infrastructure Conflicts** - Tree's ability to reach mature growth is hampered by the presence of overhead (power lines, vehicle turning clearances, structures) or underground (water/sewer/stormwater lines, hydrants, telephone, cable, electric lines) infrastructure.
- **Vehicle Traffic** - Tree currently, or at full growth maturity, restricts, or will restrict, site lines on streets or intersections, or encroaches into the street or intersection where pruning cannot correct the unsafe condition.
- **Growing Space** - Tree is planted too closely to another street tree that prevents the ash from reaching full mature growth. Ideal spacing for an ash tree to reach maturity is 40'.
- **Aesthetics** - Tree size, shape, growing area, overall health, and location does not positively contribute to the overall appearance of the area, street, neighborhood or adjoining property.

Inventoried ash trees that exhibit healthy canopy and are judged to be satisfactory based on the above criteria are qualified for chemical injection treatments performed by licensed contractors.

Landowner/Resident Treatment Option:

In certain circumstances, and with the approval of Bloomington's urban forester, residents may opt to pay for the chemical insecticide treatment of healthy, uninfested ash trees in the public right-of-way in an attempt to prevent EAB infestation and the removal of the tree. Chemical treatment of an ash tree for EAB is a financial commitment for the lifetime of the tree, with treatments required every two to three years.

Residents who wish to initiate the chemical treatment of ash trees in the public right-of-way must submit an Application for Permit to Treat Trees on Public Land for Emerald Ash Borer to the Bloomington Parks and Recreation Department at least seven days prior to the date the chemical treatment is to take place. Only ash trees that are in good health will be considered.

Healthy ash trees along city streets that are being consistently treated by an approved tree care service for EAB remain the property of the City of Bloomington, but will not be removed by the City unless a condition or circumstance arises that necessitates the tree's removal. These conditions include, but are not limited to: structural damage to the tree (e.g. lightning strike, vehicle collision) that creates a safety hazard; interference with traffic line of sight, or infrastructure like fire hydrants and utility lines; or infestation by EAB despite efforts to chemically treat the tree. The final decision regarding the treatment or removal of any street tree lies with the city's urban forester.

An inventory of approximately 14,000 street trees of all species was conducted with the assistance of the IU School of Public and Environmental Affairs in 2007. The total number of ash trees inventoried at that time was 892. Fortunately, wise urban forestry management practices over many years resulted in a relatively small percentage (6.4%) of ash in the City's total street inventory.

Since 2007, 148 ash street trees and 36 ash park trees have been removed due to EAB infestation or the determination that the tree had become hazardous due to other factors.

Management Objective: All ash trees identified in the 2007 inventory were inspected and evaluated by the City's Urban Forester in early 2015. The total number of street ash trees in 2015 is 775. Based on the 2015 inspection and the evaluation criteria, approximately 172 ash trees qualify for removal. Approximately half of the trees that qualified for removal failed one or more of the structural, health, or canopy evaluation criterion. The remainder are trees with a DBH of less than 12".

Canopy health is the most important evaluation factor. Recommendations from the Society of Municipal Arborists state that trees with a canopy (the outer layer of leaves of an individual tree) loss of 30% or greater from EAB infestation damage will not recover.

Most tree removals will be performed by City of Bloomington in-house crews. The cost for removal, including ancillary costs such as disposal, stump removal, equipment and transportation, range from \$100 to \$800 per tree, based on size, location, groupings, nearby obstacles, etc. Removal prioritization schedules will be based on visible evidence

of EAB infestation and hazard rating (risk of accident or injury due to the tree falling on persons, or property).

The EAB Management Policy reflects Bloomington Parks and Recreation's intent to allocate its finite resources as efficiently as possible to manage EAB and continue to allocate funding toward increasing the number of trees planted each year, pruning more street and park trees to facilitate good tree health and form, to plant the "right tree in the right place", to promote long-term survival and growth to maturity, to lessen the City's risk exposure with the prompt removal of hazardous trees, and by providing species diversity to resist the inevitable pests and ecological threats that will continue to challenge the management and health of Bloomington's urban forest that provides immeasurable benefits to our community and quality of life.