

Madison’s urban forest is being severely challenged by natural threats, especially the Emerald Ash Borer, but is also being reduced by contradictory policies and practices of City agencies. Here the Sustainable Madison Committee presents an overview of issues threatening Madison’s urban forest and provides recommendations to better manage and enhance our tree canopy.

The Parks Division [Forestry Section](#) provides tree planting, pruning and maintenance for over 96,000 terrace trees along Madison's 700 miles of City streets. In addition, Forestry is responsible for hundreds of thousands of trees located in the City's parks, golf courses and cemetery.

A healthy, dense and diverse population of large, mature canopy trees provides many important health, economic and environmental benefits for our City. Studies have shown that canopy trees reduce stress levels, slow traffic, and create urban environments which encourage people to get outdoors, walk and bike and stay more active – all of which boost better health. Their shade and evapotranspiration mitigates urban heat and cools buildings, reducing energy use and peak demand as well as storing large amounts of carbon. They significantly reduce stormwater run-off, improve air quality and abate urban noise. Trees improve the streetscape and increase property values. These benefits must be included as we consider the costs of preserving and maintaining our urban forest.

COMMITTEE PROCESS

The Sustainable Madison Committee (SMC) works to further the goals of the [Madison’s Sustainability Plan](#), adopted in 2012, and provide a healthy environment for the citizens of our City. During the past year, City residents spoke to the SMC of their concern about the City’s removal of many mature trees, especially under power lines, and replacing them with much shorter “ornamental” trees that wouldn't provide the same environmental, aesthetic and economic benefits of large shade trees. Some noted that they would be very willing to pay to treat and preserve Ash trees on the terrace in front of their properties, but that has been prohibited. These residents acknowledged that removing large numbers of trees is partially driven by efforts to control the Emerald Ash Borer invasion, but are concerned that our EAB policies and practices are severely reducing our urban canopy, as well as leaving the public and homeowners out of the decision process.

In July, 2016, the SMC created a Tree Subcommittee to review policies, practices and problems affecting the tree canopy and develop recommendations to preserve and grow our urban canopy. The Tree Subcommittee held a series of monthly public meetings to review pertinent documentation, hear testimony from city staff and citizens, and consult with a variety of experts. Members of the SMC serving on the Tree Subcommittee include Alder David Ahrens, Lance Green, Michael Vickerman and Jesse Shields. Parks Dept. Assistant Supt. Charles Romines and City Forester Marla Eddy regularly attended meetings and advised the subcommittee, as did community, DNR and University forestry experts.

The group focused on those portions of the canopy managed by City operations, such as street terraces, parks, and other public spaces, but considered issues in the light of the whole city-wide canopy. We also considered goals and actions in the Sustainability Plan, which call for the City to:

- Preserve and expand urban forest resources.
- Create a comprehensive tree program, with tree maintenance, tree preservation ordinance, and species variation.
- Minimize loss of tree cover and green space in public rights of way.

- Create a policy to facilitate underground placement of power lines and overhead wires.
- Promote tree planting by residents to complement municipal planting through a well-planned and systematic program, including education.

The Madison Comprehensive Plan adopted in 2006 also provides several recommendations for shade tree placement, such as “Policy 7: Encourage street designs that include shade trees and decorative lighting in the landscaped terraces along the sides of streets and in landscaped boulevards down the center of major streets.” (p.2-47)

URBAN FOREST ISSUES

1. Inconsistent Tree Management and Low Priority for Trees

While Madison’s tree canopy is ostensibly managed by the Forestry Section, its viability is affected by a wide range of policies, ordinances and practices and overseen by several City agencies, including Parks, Engineering, Traffic Engineering, Streets, Fire and Planning as well as utility pruning programs. As city streets are reconstructed or developments are built, planning for trees and planting them receives a low priority, and often leads to loss of many trees without replacement. In addition, current design standards for street-scapes often do not provide enough soil access or set-backs for planting canopy trees.

Other threats to existing or planned canopy trees are posed by overhead and underground utilities, street lights, signs, salt, vehicles, new sidewalks, fire truck clearance, improper mowing and weed-whackers. Our current “right tree in the right place” policy does not always assure the “right place for the right trees.”

The City has no policy to assure no further loss of canopy, set a percent tree canopy goal for the city, or maximize the canopy tree cover citywide. One 2013 assessment showed 22% of the entire City covered by trees, while recent tree canopy evaluations in Minneapolis, Cincinnati, and Washington D.C averaged 32%, 39% and 37%, respectively.

As has been done in other cities, the development of a comprehensive Urban and Community Forestry Master Plan will support the objectives of the City’s Comprehensive and Sustainability Plans and serve as a guide to future investment in this essential resource.

2. EAB Response Plan, Treatment, Removals, Power Lines, Equity

The Emerald Ash Borer (EAB) invasive insect has been infesting Madison’s Ash trees since 2013. Madison Parks Forestry Division has been implementing the [EAB Response Plan](#), adopted in 2012, treating nearly 11,000 terrace Ash trees, preventively removing about 4500 and replacing about 1600, with plans to replace all 9500 which are expected to be removed.

The EAB Plan called for treating healthy terrace Ash trees 10 inches or more in diameter (at 4 ½ feet height) and removing all Ash trees in poor condition or those under power transmission lines, no matter their condition. To reduce possible line damage, utilities have trimmed tall canopy trees under power lines, thus retaining the tree but often creating the “big Y” look. Most of these trees adapt to the trimming and remain healthy.

Removing all Ash trees under power lines often creates a significant equity disparity for residents and property owners on one side of the street versus their neighbors across the street, and for those neighborhoods with above ground power versus those with undergrounded power. Power lines have been placed underground in nearly all new development since 1978, leaving older neighborhoods to face the devastating results of our EAB policy.

Madison's web page on our [Urban Forestry Special Charge](#) addresses this equity issue: "A healthy, vibrant, and sustainable urban forest provides benefits to all residents of Madison through a number of ways and not just to those who have parcels adjacent to City trees. Urban trees enhance the quality of oxygen, retain stormwater run-off, increase property values, and overall quality of life. Thus, residents of all parcel types shall help uphold the quality of the urban forest in the City of Madison."

In subsequent inspections, Forestry has learned that some trees originally marked for removal under power lines are healthy enough for treatment, and expects to reevaluate another 1000 trees in 2017. Healthy Ash trees under power lines and over 10 inches will be re-marked and treated.

In addition, Ash trees removed under power lines are now being replaced by low growing, ornamental trees. While costing nearly the same amount to plant and maintain, these trees do not provide a fraction of the ecological and economic benefits of large canopy trees.

Since 2013, over 2200 Ash trees have been removed from City parks and over 1100 trees have been planted. Over 200 Ash trees have been treated through the [Adopt-A-Park Tree program](#), which allows residents to pay to treat specific healthy Ash trees which have been approved by the Parks Department. Forestry has announced this program will end in 2017, expecting that EAB infestation will then have progressed too far to save trees with treatments. Those trees already enrolled in the program will continue to be treated if the funding is still provided.

RECOMMENDATIONS

A. Develop and adopt an Urban Forestry Master Plan to specify planning, regulatory, and enforcement policies to encourage the preservation and expansion of the urban forest on public land.

For systemic change in the survival and expansion of Madison's tree canopy, we recommend forming an inter-agency workgroup to evaluate city policies and practices that affect tree planting and survival and make recommendations for improvement. Members of the workgroup should consist of senior staff from Parks (including Forestry Section and Habitat Stewardship Committee), Engineering, Traffic Engineering, Planning, Fire, Storm Water, Zoning, and representatives from Sustainable Madison Committee and interested residents. Other agencies or entities should participate in the discussion on an as needed basis.

The Urban Forestry Master Plan should consider these goals at a minimum:

- Develop a Tree Assessment and Tracking System to accurately track all terrace and Park trees (in open spaces) and provide regular reports on the state of our publically-owned trees.
- Determine feasibility of adoption of a "no net loss" policy in regard to trees on public property.
- Develop and adopt a Canopy Coverage Goal for the City including public and private canopy trees.
- Clearly state the process for priority treatment of existing and new trees in planning and performing street and sidewalk installation and reconstruction and all types of developments, including providing appropriate soil, water and space for healthy trees.
- Review zoning code to optimize tree placement and survival, including consideration of building set-backs and bike and auto parking on tree placement and viability.

- Integrate street trees into the stormwater infrastructure and Complete Streets objectives of the City, including clear guidelines for trimming and maintenance of trees under utility lines.
- Increase resident involvement in projects that expand or maintain the urban forest, such as the Parks Adopt-A-Tree project, our current new-tree-watering program, [Greening Milwaukee](#) and [Chicago TreeKeepers](#).
- Support programs that assist planting trees on private property such as the [Madison Canopy Project](#) operated by the Urban Tree Alliance.
- Increase funding for the street and parks tree program through public, private or grant funded opportunities.
- Develop a clear statement of objectives for responses to invasive and disease treatment methods and goals.
- Educate the public about the values of trees and the requirements of Madison’s urban forest management program.
- Work to attain these goals should consider equity of neighborhoods, diverse species variation, local conditions and historic trends.

B. Review and revise portions of the Emerald Ash Borer Response Plan:

- Eliminate the requirement that all Ash trees under power lines be removed to align the Plan with current Forestry practice. The criteria for Ash trees should be the same as for other trees under power lines – remove them when their health or structure is determined to pose a threat, not because of the location in which they are planted.
- Promote and expand the Parks’ Adopt-A-Park Tree program through 2017.

C. Underground Power Lines. Develop a plan and timeline to underground high-voltage utility wires that require severe trimming of nearby trees, in accordance with Sustainability Plan goals. Special consideration could be made for piloting lower-cost “partial undergrounding” of the high-voltage utility lines that require much more severe trimming than low-power and non-power lines. Because this initiative would take a number of years to implement, in the interim, we should develop clear guidelines for trimming or elimination of trees under utility wires.

CONCLUSION

The preservation and expansion of Madison’s Urban Forest will serve the public interest by improving the community’s physical, social, cultural and economic environment. We must take steps now to assure the growth and maintenance of this precious resource.

REFERENCES

[Legistar File # 44959](#) – Street Tree Subcommittee Documents
[City Forestry Street Tree Map](#)
[Map of Terrace Trees by type](#)
[Wisconsin DNR Urban Forest Newsletter article on Setting Urban Canopy Coverage](#)

[Sarasota Springs, New York](#) and [Baltimore Maryland](#) provide useful models for Urban Forest Planning.