

City of Fort Atkinson
Tree Inventory and Emerald Ash Bore Information
August 2014

The Department of Public works has completed an inventory of all the trees located within the City's right-of-ways for the purpose of understanding the composition and health of the trees we are responsible for. By utilizing the inventory information, we will be better able to contend with the effects of the emerald ash bore as well as improve our street tree diversity.

In the City's right-of-ways, we have 5,401 trees (table A), these trees are commonly referred to as terrace trees or street trees. The inventory shows us that we have a large imbalance of the tree species that have been planted over time.

Table A

Total Street Trees = 5,401				
41% - Maple	8% - Linden	3% - Japanese Lilac	2% - Cherry	1% - other
23% - Ash	4% - Elm	2% - Oak	1% - Hackberry	
8% - Locust	4% - Crabapple	2% - Coffee	1% - Callery Pear	

Over the next decade it will be our goal to closely monitor our new tree selection so that it increases street tree diversity which will ultimately reduce our exposure to future pests that may attack only one species of tree.

The Emerald Ash Borer was confirmed in the City of Fort Atkinson in early July. Communities as close as Janesville, Whitewater, Madison, and Watertown also have confirmed Emerald Ash Bore infestations. The Emerald Ash Borer is firmly established in southern Wisconsin and it will only be a few years before it is found everywhere.

Currently we have 1,243 ash street trees which accounts for 23% of our total street tree population. They range from poor to excellent condition (table B) and from 2" to 40" in diameter (table C).

Table B

Total Ash Street Trees = 1,243	
Ash Tree Condition	Ash Tree Count
Excellent	20 (1.6%)
Good	594 (47.8%)
Fair	438 (35.3%)
Poor	191 (15.3%)

Table C

Ash Size Distribution - Ash Street Trees	
DBH (diameter at breast height)	Ash Tree Count
2-9"	229
10-18"	818
18-30"	183
31-40"	13

The City of Fort Atkinson's situation is not unique, ash trees have been a favorite street tree for most municipalities due to their hardiness and beauty.

The emerald ash borer is native to Asia and was first detected in Michigan in 2002. It is believed to have been introduced to the United States through wood packing material that arrived on ships or planes. It is very difficult to detect the emerald ash borer until they are well established within an area. Once the emerald ash borer is detected within a community, it is estimated all the ash trees will be dead within eight years if they are not treated with an insecticide.

There are two primary chemicals on the market to treat emerald ash borer. The first chemical is imidacloprid which is a non-restricted use insecticide sold under several different brand names. This product has shown to be 85% effective and can be purchased and applied by homeowners simply by pouring it around the base of the tree. Imidacloprid is required to be applied each year, and because of that we could exceed the manufacturer's label rates. The second chemical is Emamectin Benzoate which is a restricted use insecticide sold only under the brand name Tree-age.

Tree-age is the most common and most effective chemical used by municipalities to treat for the emerald ash borer. Tree-age is injected in the trunk of the tree and has shown to be 98% effective for at least two years. Additional research has been done with this product showing that it may be effective for three years.

The most balanced approach when dealing with the emerald ash bore is to chemically treat some of the ash street trees with Tree-age and selectively remove the trees that are not suitable for treatment.

There are 629 ash trees that are classified as in poor or fair condition. These trees are in declining health or have structural problems that don't merit the cost of chemical treatment. Additionally, there are 181 trees that are smaller than 10 inches in diameter that are rated as good to excellent condition that are not good candidates for applying Tree-age due to the trunk injury that will occur during the injection process. The estimated cost for the Department of Public Works to remove these trees, grind the stumps and replant new trees over the next five years is \$511,230.00 (tables D & E).

Table D

DPW to remove trees/stumps for 810 ash trees over the next five years	
629 poor/fair trees @ \$35.00/inch (10,540 inches)	\$368,900.00
181 good/excellent trees < 10" @ \$35.00/inch (1,058 inches)	\$37,030.00
Total =	\$405,930.00

Table E

DPW to plant 405 trees (50% of trees that were removed) over next five years	
2" tree cost - 405 trees @ \$135.00/ tree	\$54,675.00
labor cost – 405 trees @ \$125.00/tree	\$50,625.00
Total =	\$105,300.00

There are 434 good and excellent rated ash street trees larger than 10 inches in diameter that are good candidates for the Tree-age treatment. The Department of Public Works will begin treatment by late summer with the expectation of having all 434 trees treated by early fall. The estimated cost for the Department of Public Works to treat all 434 trees with Tree-age this fall is \$34,166.00 (table F).

Table F

DPW to treat 434 good/excellent trees ≥ 10 DBH	
Estimated Tree-age cost for 434 trees	\$22,486.00
Estimated labor cost for 434 trees (treat 25 trees/day-two man crew)	\$8,680.00
Estimated cost to purchase tree injection equipment	\$3,000.00
Total =	\$34,166.00

The Department of Public Works will continue to monitor all the treated street trees each year. It is possible over time we will modify what we consider a tree worthy of treatment. When a tree is no longer rated as good or excellent condition, we will cease treating that tree and in all likelihood the tree will die and it will be removed. Even though, some of the treated trees will be removed over time, this shouldn't be viewed as a waste of money. The additional years we gain through the treatment process will allow us to extend the time frame to do the work that needs to be done. The additional time will also allow us to seek outside funding sources, as well as time to systematically remove and plant trees while preserving the urban canopy to the best of our ability.