

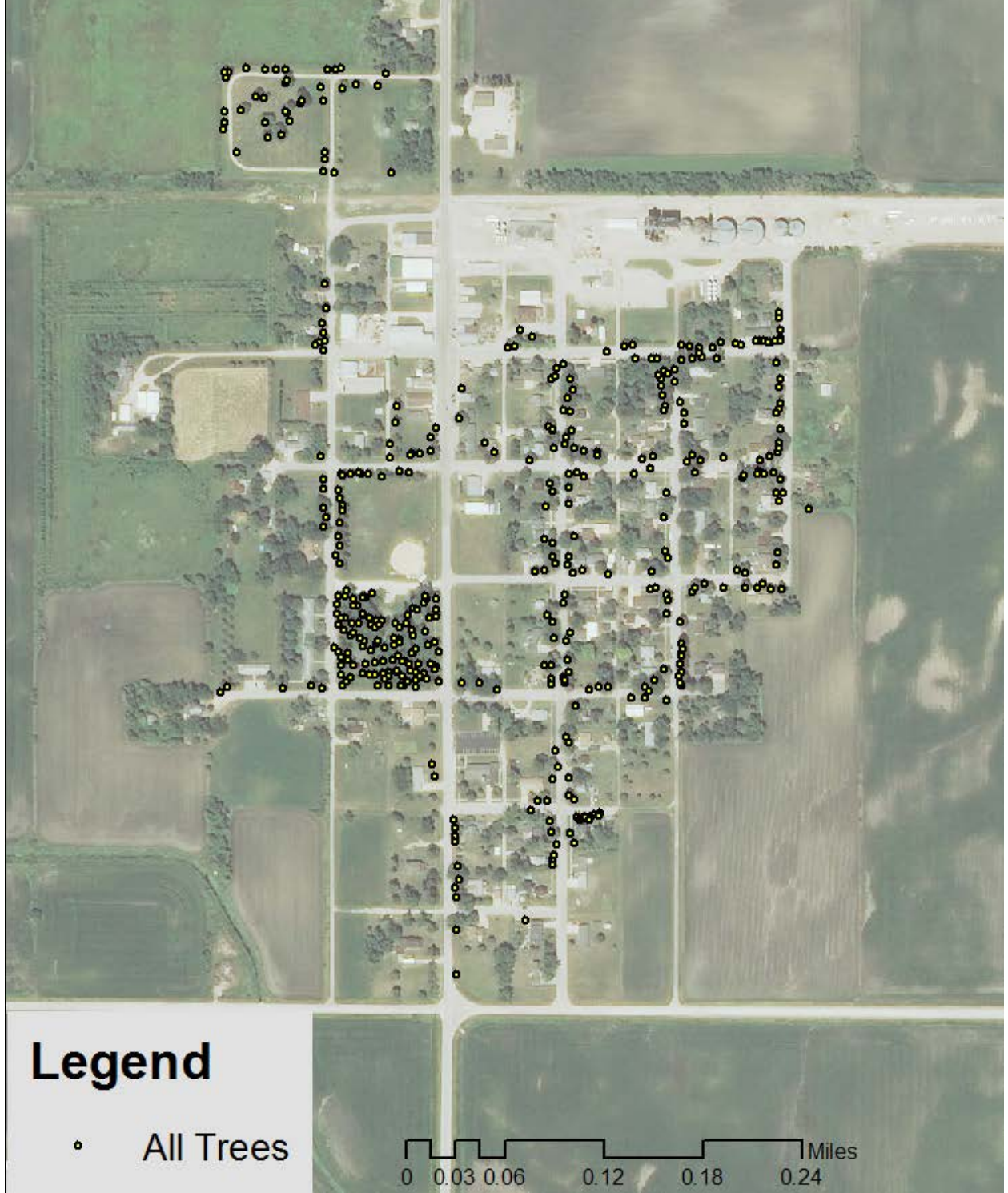
Coulter, IA



2016 Urban Forest Management Plan
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Coulter, Iowa



Trees inventoried in Fall 2015

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Executive Summary

Overview

This plan was developed to assist the City of Coulter with managing its urban forest, including budgeting and future planning. Trees can provide a multitude of benefits to the community, and sound management allows a community to best take advantage of these benefits. Management is especially important considering the serious threats posed by forest pests such as the emerald ash borer (EAB). EAB is an invasive insect imported from Eastern Asia on wood shipping crates that kills all species of ash trees (this does not include mountain ash). There is a strong possibility that 34% of Coulter's city owned trees (ash) will die once EAB becomes established in the community, unless preventative treatment is used. With proper planning and management, the costs of removing dead and dying trees can be extended over years, mitigating public safety issues.

Inventory and Results

In 2015, a tree inventory was conducted by Matt Brewer, Iowa DNR, using Global Positioning System (GPS) data collectors. The inventory was a complete inventory of street and park trees. Below are some key findings of the 419 trees inventoried.

- Coulter's trees provide \$64,209 of benefits annually, an average of \$153 a tree
- There are over 33 species of trees
- The top three genera are: Ash 34%, Maple 26%, and Spruce 10%
- 15% of trees are in need of some type of management
- 11 trees are recommended for removal

Recommendations

The core recommendations are detailed in the Recommendations Section. The Emerald Ash Borer Plan includes management recommendations as well. Below are some key recommendations.

- Of the 11 trees needing removal, 8 trees are over 24 inches in diameter at 4.5 ft and must be addressed immediately [*City ownership of the trees recommended for removal should be verified prior to any removal*](#)
- 3 of the 144 ash trees should be carefully examined, as they have one or more symptoms that could be related to an EAB infestation
- All trees should be pruned on a routine schedule- one third of the city every other year
- Plant a diverse mix of trees that do not include: ash, maple, cottonwood, poplar, box elder, Chinese elm, evergreen, willow or black walnut
- Check ash trees with a visual survey yearly
- Budget impacts from ash removal – Suggestion: request a budget increase to at least \$10,000-\$21,600 annually and apply for grants to plant replacement trees

Introduction

This plan was developed to assist Coulter with the management, budgeting and future planning of their urban forest. Across the state, forestry budgets continue to decrease with more and more of that money spent on tree removal. With the arrival of Emerald Ash Borer (EAB), an invasive pest that kills native ash trees, it is time to prepare for the increased costs of tree removal and replacement planting. With proper planning and management of the current canopy in Coulter, these costs can be extended over years and public safety issues from dead and dying ash trees mitigated.

Trees are an important component of Coulter's infrastructure and one of the greatest assets to the community. The benefits of trees are immense. Trees provide the community with improved air quality, stormwater runoff interception, energy conservation, lower traffic speeds, increased property values, reduced crime, improved mental health and create a desirable place to live, to name just a few benefits. It is essential that these benefits be maintained for the people of Coulter and future generations through good urban forestry management.

Good urban forestry management involves setting goals and developing management strategies to achieve these goals. An essential part of developing management strategies is a comprehensive public tree inventory. The inventory supplies information that will be used for maintenance, removal schedules, tree planting and budgeting. Basing actions on this information will help meet Coulter's urban forestry goals.

Inventory

In 2015, a tree inventory was conducted by Matt Brewer, Iowa DNR, that included 100% of the city owned trees on both streets and parks. The tree data was collected using a handheld Global Positioning System (GPS) receiver. The data collector gives Geographic Information Systems (GIS) coordinates with an accuracy of 3 meters, which can be used in Arc GIS as an active GIS data layer. Because the inventory is a digital document the data can be updated with new information and become a working document.

The programming used to collect tree information on the data collectors was written to be compatible with a state-of-the-art software suite called i-Tree. i-Tree was developed by the USDA Forest Service to quantify the structure of community trees and the environmental services that trees provide. The i-Tree suite is a public domain which can be accessed for free.

To quantify the urban forest structure and benefits, specific data is collected for each tree. This data includes: location, land use, species, diameter at 4.5 ft, recommended maintenance, priority of that maintenance, leaf health, and wood condition. Additionally, signs and symptoms associated with EAB were noted for all ash trees. The signs and symptoms noted were canopy dieback, epicormic shoots, bark splitting, D-shaped borer exit holes, and wood pecker damage.

Inventory Results

The data collected for the 419 city trees was entered into the USDA Forest Service program i-Tree Streets, part of the i-Tree suite. The following are results from the i-Tree Streets analysis.

Annual Benefits

Annual Energy Benefits

Trees conserve energy by shading buildings and blocking winds. Coulter's trees reduce energy related costs by approximately \$17,088 annually (Appendix A, Table 1). These savings are both in Electricity (81.5 MWh) and in Natural Gas (11,123.7 Therms).

Annual Stormwater Benefits

Coulter's trees intercept about 865,913 gallons of rainfall or snow melt a year (Appendix A, Table 2). This interception provides \$23,466 of benefits to the city.

Annual Air Quality Benefits

Air quality is a persistent public health issue in Iowa. The urban forest improves air quality by removing pollutants, lowering air temperature, and reducing energy consumption, which in turn reduces emissions from power plants, and emitting volatile organic matter (ozone). In Coulter, it is estimated that trees remove 993.5 lbs of air pollution (ozone (O₃), particulate matter less than 10 microns (PM10), carbon monoxide (CO), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂)) per year with a net value of \$2,765 (Appendix A, Table 3).

Annual Carbon Benefits

Carbon sequestration and storage reduce the amount of carbon in the atmosphere, mitigating climate change. In Coulter, trees sequester about 184,165 lbs of carbon a year with an associated value of \$1,381 (Appendix A, Table 4). In addition, the trees store 2,793,446 lbs of carbon, with a yearly benefit of \$20,951 (Appendix A, Table 5).

Annual Aesthetics Benefits

Social benefits of trees are hard to capture. The analysis does have a calculation for this area that includes: aesthetic value, property values, lowered rates of mental illness and crime, city livability and much more. Coulter receives \$18,590 in annual social benefits from trees (Appendix A, Table 6).

Financial Summary of all Benefits

According to the USDA Forest Service i-Tree Streets analysis, Coulter's trees provide \$64,209 of benefits annually. Benefits of individual trees vary based on size, species, health and location, but on average each of the 419 trees in Coulter provides approximately \$153 annually (Appendix A, Table 7).

Forest Structure

Species Distribution

Coulter has over 33 different tree species along city streets and parks (Appendix A, Figure 1). The distribution of trees by genera is as follows:

Ash	144	34%
Maple	107	26%
Spruce	41	10%
Apple/Crabapple	30	7%
Honeylocust	19	5%
Birch	10	2%
Aspen/Cottonwood	10	2%
Linden/Basswood	10	2%
Hackberry	9	2%
Dogwood	4	1%
Black Walnut	4	1%
Oak	4	1%
Catalpa	3	1%
Ohio Buckeye	2	<1%
Kentucky Coffeetree	2	<1%
Pear	2	<1%
Elm	2	<1%
Tuliptree	1	<1%
Mulberry	1	<1%
Willow	1	<1%
Northern White Cedar	1	<1%
Other Small Deciduous	12	3%

Age Class

Almost half of Coulter's trees (40%) are between 18 and 36 inches in diameter at 4.5 ft (Appendix A, Figure 2). For age, it is preferred that a large number of trees are in the smallest size categories (a downward slope) to prepare for natural mortality and to maintain canopy cover. Coulter will have an aging tree population as this 40% matures, and should consider new plantings (currently only 17% are under 6 inches in diameter) to develop the next generation of trees.

Condition: Wood and Foliage

Both wood condition and leaf condition are good indicators of the overall health of the urban forest. The foliage condition results for Coulter indicate that 93% of the trees are in good health, with only 2% of the foliage in poor health, dead or dying (Appendix A, Figure 3 & Appendix B, Figure 3). Additionally, 74% of Coulter's trees are in good health for wood

condition (Appendix A, Figure 4 & Appendix B, Figure 3). Wood condition that is in poor health, dead or dying is about 6% of the population. This 6% is an estimate of trees that need management follow up.

Management Needs

The following outlines the specific management needs of the street and park trees by number of trees and percent of canopy (Appendix B, Figure 3).

Crown Cleaning	50	12%
Tree Removal	11	3%

Canopy Cover

The total canopy with both private and public trees is 2% (37 acres). The canopy cover included in the Coulter inventory includes approximately 9 acres (Appendix A, Figure 4).

Land Use and Location

The majority of Coulter’s city and park trees are in yard settings in single family residential neighborhoods (Appendix A, Figure 6 & Appendix A, Figure7). The following describes the land use and locations for the street and park trees.

Land Use

Single family residential	56%
Park/vacant/other	39%
Small commercial	4%
Multifamily residential	1%

Location

Front yard	65%
Planting strip	35%

Recommendations

Risk Management

Hazardous trees can be a significant threat to both people and property. Trees that are dead or dying, or that have large issues such as trunk cracks longer than 18 inches should be removed. Broken branches and branches that interfere with motorist’s vision of pedestrians, vehicles, traffic signs and signals, etc. should be removed.

Hazardous trees

Coulter has 1 critical concern tree that needs immediate cleaning. This tree can be seen on the Location of Trees with Recommended Maintenance map (Appendix B, Figure 4). Please refer to

the six year maintenance plan at the end of this section. After the critical concern tree is addressed, there should be follow up on the trees marked as needing maintenance. There are a total of 61 trees with these needs.

Poor tree species

After the removal of the critical concern trees, ash trees in poor health should be assessed for removal (Appendix B, Figure 3 & Appendix B, Figure 4). Of the 11 removals, 5 are ash trees. There are a total of 144 ash trees, and 3 of those have signs and symptoms that have been associated with EAB. In addition, there are 8 ash trees that are in poor health. ***City ownership of the trees recommended for removal should be verified prior to any removal***

Pruning Cycle

Proper pruning can extend the life and good health of trees, as well as reduce public safety issues. In the Management Needs section of the Findings there are four main maintenance issues to be addressed: routine pruning, crown cleaning, crown raising, and crown reduction. Crown cleaning removes dead, diseased, and damaged limbs. Crown raising is the removal of lower branches that are 2 inches in diameter or larger in the case of providing clearance for pedestrians or vehicles. Crown reduction is removing individual limbs from structures or utility wires. It is recommended that all trees be pruned on a routine schedule every five to seven years. Please refer to the six year maintenance plan for further information.

Planting

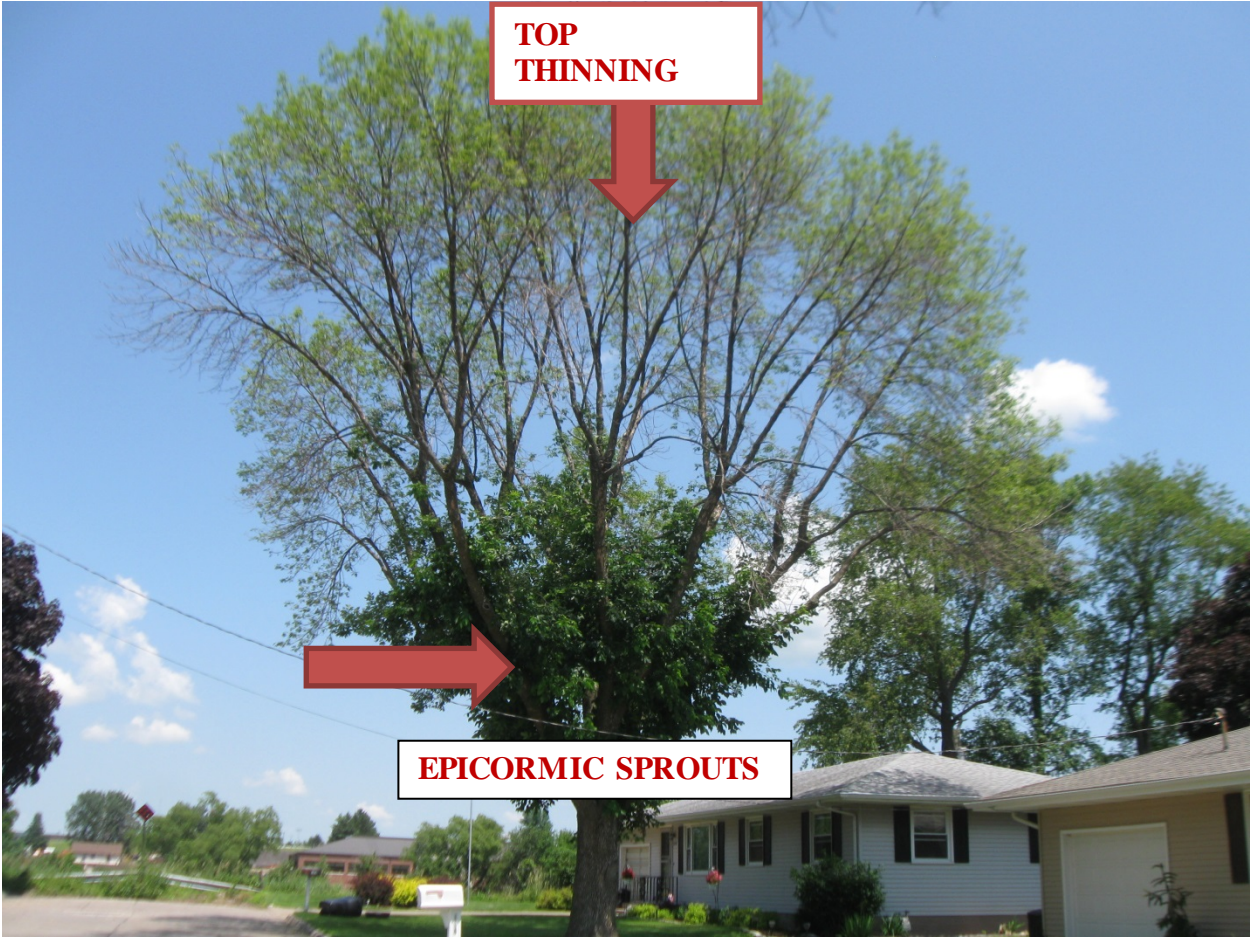
Most of the planting over the next 5 years will replace the trees that are removed. It is recommended to plant at least 1.2 trees for every tree removed, since survival rates will not be 100%. Please refer to the six year maintenance plan at the end of this section. It is not essential that the new trees be planted in the same location of the trees being removed. However, maintaining the same or greater number of trees helps ensure continuation of the benefits of the existing forest in Coulter.

It is important to plant a diverse mix of species in the urban forest to maintain canopy health, since most insects and diseases target a genus (ash) or species (green ash) of trees. Current diversity recommendations advise that a genus (i.e. maple, oak) not make up more than 10% of the urban forest and a single species (i.e. silver maple, sugar maple, white oak, bur oak) not make up more than 5-10% of the total urban forest. Presently, the forest is heavily planted with maple (26%) (Appendix A, Figure 1). **Maples should not be planted until this percentage can be lowered.** Also, ash trees have not been recommended since 2002, due to the threat of EAB. Other species to avoid because they are public nuisances include: cottonwood, poplar, box elder, Chinese elm, evergreen, willow or black walnut, as outlined in the city ordinance (Appendix C). All trees planted must meet the restrictions in the city ordinance (Appendix C).

Continual Monitoring For EAB

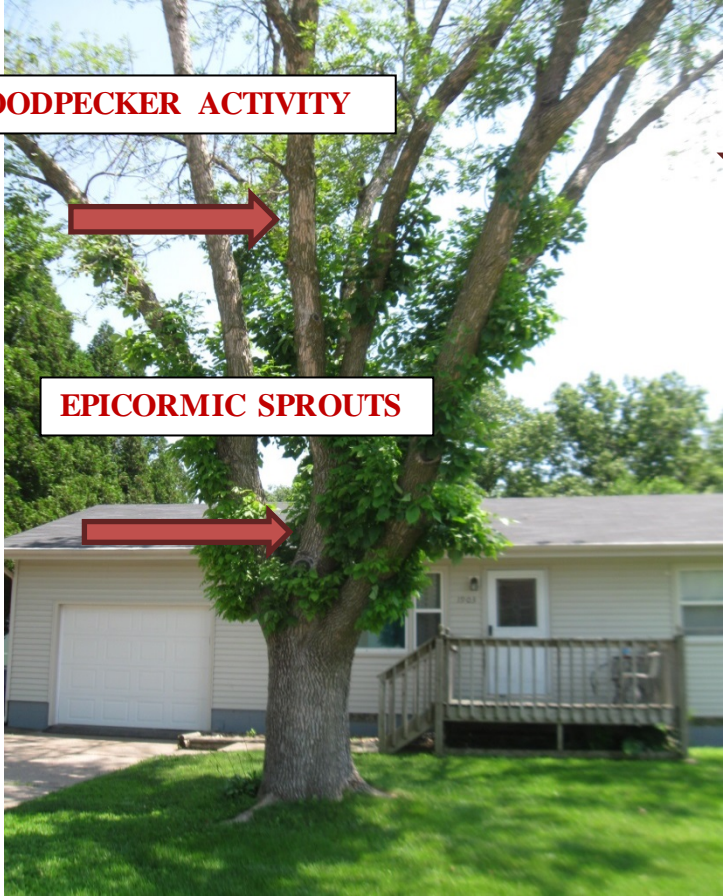
Due to the threat of EAB, it is important to continuously check the health of ash trees. It is recommended that ash trees be checked with a visual survey every year for tree decline and for

the following signs and symptoms: canopy dieback, epicormic shoots, bark splitting, D-shaped borer exit holes, and wood pecker damage (See examples below). **Once EAB arrives in Coulter, it could potentially kill all ash within 4 to 10 years of its arrival.**



EAB infested tree in Muscatine with top thinning and many new green epicormic sprouts

WOODPECKER ACTIVITY



EPICORMIC SPROUTS

WOODPECKER ACTIVITY



D-SHAPED EXIT HOLE

EAB infested tree in Muscatine with sprouting, wood pecker activity, and D-shaped exit holes

Emerald Ash Borer Plan

Ash Tree Removal

Tree removal will be prioritized with dead, dying, hazardous trees to be removed first (Appendix B, Figure 4). Next will be all ash in poor condition and displaying signs and symptoms of EAB (Appendix B, Figure 2 & Appendix B, Figure 3). **City ownership of the tree recommended for removal should be verified prior to any removal**

Treatment of Ash Trees

Chemical treatment can be an effective tool for communities to spread removal costs out over several years while allowing trees to continue to provide benefits. However, treatment is not recommended if EAB is more than 15 miles away from the community. For more information on the cost of treatment strategies visit <http://extension.entm.purdue.edu/treecomputer/>

EAB Quarantines

EAB is an extremely destructive plant pest and it is responsible for the death and decline of millions of ash trees. Ash in both forested and urban settings constitute a significant portion of the canopy cover in the United States. Current tools to detect, control, suppress and eradicate this pest are not as robust as the USDA would desire. In order to stay ahead of this hard to detect beetle, the USDA is attempting to contain the beetle before it spreads beyond its known positions by regulating articles.

A regulated article under the USDA's quarantine includes any of the following items:

- emerald ash borer
- firewood of all hardwood species (for example ash, oak, maple and hickory)
- nursery stock and green lumber of ash
- any other ash material, whether living, dead, cut or fallen, including logs, stumps, roots, branches, as well as composted and not composted chips of the genus ash (Mountain ash is not included)

In addition, any other article, product or means of conveyance not listed above may be designated as a regulated article if a USDA inspector determines that it presents a risk of spreading EAB once a quarantine is in effect.

Wood Disposal

A very important aspect of planning is determining how wood infested with EAB will be handled, keeping in mind that quarantines will restrict its movement. Consider who will cut and haul the dead and dying trees? Is there an accessible, secured site big enough to store and sort the hundreds of trees and the associated brush and chips? How will wood be disposed of or utilized? Do you have equipment capable of handling the amount and size of ash trees your tree inventory has identified? The entire state of Iowa is under quarantine, so regulated articles may not be moved into non-quarantined states. For more information, please visit <http://www.emeraldashborer.info/>.

Canopy Replacement

As budget permits, all removed trees will be replaced. All trees will meet the restrictions in the city ordinance (Appendix C). The new plantings will be a diverse mix and will not include ash, maple, cottonwood, poplar, box elder, Chinese elm, evergreen, willow or black walnut.

Postponed Work

While finances, staffing and equipment are focused on the management of ash, usual services may be delayed. Tree removal requests on genera other than ash will be prioritized by hazardous or emergency situations only.

Monitoring

It is recommended that ash trees be checked with a visual survey every year for tree death and for the following signs and symptoms: canopy dieback, epicormic shoots, bark splitting, D-shaped borer exit holes, and wood pecker damage.

Private Ash Trees

It is strongly recommended that private property owners start removing ash trees on their property upon arrival of EAB. City Code states "The property owner is required to remove diseased trees or dead wood from their property and keep the trees along the street scape pruned to 15' above the street and 8' above the sidewalk. Diseased trees and deadwood outside the lot and property lines and inside the curb upon the public street is the responsibility of the city."

Six Year Maintenance Plan and Cost Estimates

Year 1 (FY 2016)

Maintain 1 critical concern tree that needs immediate attention (cleaning)	\$300
Remove 6 trees (marked for removal)	\$5,400
Plant and Maintain 30 trees in open locations (pursue grants)	\$3,000
Ash tree treatment (if elected), 107 trees in good condition, average 18–24” -\$15 per inch, treated every two years, see note *Or saving for future ash removal	avg. \$315/tree
Visual Survey for signs and symptoms of EAB	

Year 2 (FY 2017)

Remove 5 trees (marked for removal)	\$4,500
Plant and Maintain 30 trees in open locations (pursue grants)	\$3,000
Ash tree treatment (if elected) or saving for future ash removal	
Routine trimming: Contract to trim 1/3 of the city trees (~\$300 per tree)	
Visual Survey for signs and symptoms of EAB	

Year 3 (FY 2018)

Remove any new critical concern trees and ash in poor health	\$900/tree
Plant and Maintain 30 trees in open locations (pursue grants)	\$3,000
Ash tree treatment (if elected) or saving for future ash removal	
Visual Survey for signs and symptoms of EAB	

Year 4 (FY 2019)

Remove any new critical concern trees and ash in poor health	\$900/tree
Plant and Maintain 30 trees in open locations (pursue grants)	\$3,000
Ash tree treatment (if elected) or saving for future ash removal	
Routine trimming: Contract to trim 1/3 of the city trees (~\$300 per tree)	
Visual Survey for signs and symptoms of EAB	

Year 5 (FY 2020)

Remove any new critical concern trees and ash in poor health	\$900/tree
Plant and Maintain 30 trees in open locations (pursue grants)	\$3,000
Ash tree treatment (if elected) or saving for future ash removal	
Visual Survey for signs and symptoms of EAB	

Year 6 (FY 2021)

Remove any new critical concern trees and ash in poor health	\$900/tree
Plant and Maintain 30 trees in open locations (pursue grants)	\$3,000
Ash tree treatment (if elected) or saving for future ash removal	
Routine trimming: Contract to trim 1/3 of the city trees (~\$300 per tree)	
Visual Survey for signs and symptoms of EAB	

*Reduction of ash in poor health will reduce exposure to Emerald Ash Borer over time. EAB could potentially kill all ash within 4-15 years of its arrival.

**Assuming a cost of \$900 per tree for removal, the budget would need to be increased to \$21,600 a year to remove all ash trees within 6 years.

***Suggest a future (post ash removal and replacement) budget of at least \$2 per capita (population 281). Currently, this amount would cover about 3% of what would be needed to remove EAB infested trees over a six year period. Suggest setting aside additional funds to prepare for the expected arrival of EAB. Planting would be at least partially dependent on receiving grant funds annually.

Proposed Budget Increase

EAB could potentially kill all ash trees in Coulter within 4-15 years of its arrival. To remove all ash trees within 6 years the budget would need to be increased to \$21,600 a year. If the budget were increased to \$10,000 a year all ash could be removed within 13 years. Additionally, it is recommended that Coulter apply for grants to fund replacement trees. Utility Company grants are usually between \$500 and \$10,000 for community-based, tree-planting projects that include parks, gateways, cemeteries, nature trails, libraries, nursing homes, and schools.

Another option being considered by many communities is treating a number of selected trees, either to maintain those trees in the landscape or to delay their removal – to spread out the costs and number of trees needing removed all at once. Trunk injection is administered every two years for the life of the tree. If treatment is discontinued, the tree dies. For an example, if the average ash diameter is 20 inches and treatment costs \$15 per inch, then treating 10 trees would cost about \$3,000 (every other year treatment). This would be 10 trees selected for treatment, and Coulter would still need to find \$900 per tree for removal. Alternatively, if there are 15 treatable trees, it would cost approximately \$4,500 every two years for treatment and leave five less trees for removal (for at least two more years). These are alternatives to straight removal of ash trees. However, whether or not the treatment option is selected, there will be an increased cost of dealing with ash trees if EAB is found in Coulter. It is suggested to consider increasing the budget to plan for this.

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Appendix A: i-Tree Data

Table 1: Annual Energy Benefits

Annual Energy Benefits of Public Trees

1/7/2016

Species	Total Electricity (MWh)	Electricity (\$)	Total Natural Gas (Therms)	Natural Gas (\$)	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Green ash	35.1	2,668	4,769.7	4,674	7,342	(N/A)	34.4	43.0	50.99
Silver maple	12.4	944	1,642.5	1,610	2,554	(N/A)	10.3	14.9	59.39
Norway maple	7.7	581	1,101.4	1,079	1,660	(N/A)	7.9	9.7	50.32
Spruce	4.1	308	545.3	534	842	(N/A)	7.4	4.9	27.16
Apple	2.4	185	393.0	385	570	(N/A)	7.2	3.3	18.99
Honeylocust	6.0	457	780.1	764	1,222	(N/A)	4.5	7.1	64.29
Broadleaf Deciduous Small	0.1	10	22.9	22	32	(N/A)	2.9	0.2	2.69
Sugar maple	2.3	172	314.2	308	480	(N/A)	2.9	2.8	40.01
Blue spruce	0.1	5	12.0	12	16	(N/A)	2.4	0.1	1.65
Cottonwood	2.1	157	243.4	239	395	(N/A)	2.4	2.3	39.51
Maple	0.8	60	94.6	93	153	(N/A)	2.1	0.9	17.00
Northern hackberry	1.3	98	193.4	190	288	(N/A)	2.1	1.7	31.95
Red maple	0.9	67	132.1	129	197	(N/A)	1.9	1.2	24.58
Littleleaf linden	0.9	72	131.5	129	201	(N/A)	1.7	1.2	28.68
River birch	0.7	50	98.0	96	146	(N/A)	1.4	0.9	24.35
Black walnut	1.0	77	143.6	141	217	(N/A)	1.0	1.3	54.32
Paper birch	0.6	45	79.3	78	123	(N/A)	1.0	0.7	30.71
Dogwood	0.0	1	2.5	2	3	(N/A)	1.0	0.0	0.87
American basswood	1.0	73	140.9	138	211	(N/A)	0.7	1.2	70.23
Catalpa	0.0	1	1.4	1	2	(N/A)	0.7	0.0	0.66
Ohio buckeye	0.0	1	1.6	2	2	(N/A)	0.5	0.0	1.10
Elm	0.3	25	47.3	46	72	(N/A)	0.5	0.4	35.78
Northern red oak	0.0	1	2.4	2	3	(N/A)	0.5	0.0	1.67
Pear	0.4	28	49.3	48	76	(N/A)	0.5	0.4	38.13
Kentucky coffeetree	0.0	0	0.9	1	1	(N/A)	0.5	0.0	0.66
Tulip tree	0.2	18	27.0	26	44	(N/A)	0.2	0.3	44.23
Boxelder	0.3	20	36.3	36	55	(N/A)	0.2	0.3	55.14
Willow	0.2	18	29.5	29	47	(N/A)	0.2	0.3	46.78
Swamp white oak	0.0	0	0.8	1	1	(N/A)	0.2	0.0	1.10
Amur maple	0.1	6	12.8	13	18	(N/A)	0.2	0.1	18.19
Mulberry	0.0	0	0.6	1	1	(N/A)	0.2	0.0	0.87
Northern white cedar	0.1	11	19.7	19	30	(N/A)	0.2	0.2	30.47
Bur oak	0.4	29	53.7	53	82	(N/A)	0.2	0.5	82.02
Total	81.5	6,186	11,123.7	10,901	17,088	(N/A)	100.0	100.0	40.78

Table 2: Annual Stormwater Benefits

Annual Stormwater Benefits of Public Trees						
1/7/2016						
Species	Total rainfall interception (Gal)	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Green ash	356,014	9,648	(N/A)	34.4	41.1	67.00
Silver maple	154,125	4,177	(N/A)	10.3	17.8	97.13
Norway maple	72,074	1,953	(N/A)	7.9	8.3	59.19
Spruce	88,544	2,400	(N/A)	7.4	10.2	77.40
Apple	8,698	236	(N/A)	7.2	1.0	7.86
Honeylocust	64,825	1,757	(N/A)	4.5	7.5	92.46
Broadleaf Deciduous Small	408	11	(N/A)	2.9	0.0	0.92
Sugar maple	25,265	685	(N/A)	2.9	2.9	57.06
Blue spruce	381	10	(N/A)	2.4	0.0	1.03
Cottonwood	12,940	351	(N/A)	2.4	1.5	35.07
Maple	4,882	132	(N/A)	2.1	0.6	14.70
Northern hackberry	11,127	302	(N/A)	2.1	1.3	33.50
Red maple	5,002	136	(N/A)	1.9	0.6	16.95
Littleleaf linden	6,728	182	(N/A)	1.7	0.8	26.05
River birch	7,578	205	(N/A)	1.4	0.9	34.23
Black walnut	11,280	306	(N/A)	1.0	1.3	76.42
Paper birch	4,682	127	(N/A)	1.0	0.5	31.72
Dogwood	30	1	(N/A)	1.0	0.0	0.20
American basswood	11,178	303	(N/A)	0.7	1.3	100.98
Catalpa	54	1	(N/A)	0.7	0.0	0.48
Ohio buckeye	24	1	(N/A)	0.5	0.0	0.33
Elm	3,961	107	(N/A)	0.5	0.5	53.67
Northern red oak	38	1	(N/A)	0.5	0.0	0.51
Pear	1,333	36	(N/A)	0.5	0.2	18.06
Kentucky coffeetree	36	1	(N/A)	0.5	0.0	0.48
Tulip tree	1,466	40	(N/A)	0.2	0.2	39.72
Boxelder	3,090	84	(N/A)	0.2	0.4	83.73
Willow	1,409	38	(N/A)	0.2	0.2	38.19
Swamp white oak	12	0	(N/A)	0.2	0.0	0.33
Amur maple	264	7	(N/A)	0.2	0.0	7.17
Mulberry	7	0	(N/A)	0.2	0.0	0.20
Northern white cedar	2,969	80	(N/A)	0.2	0.3	80.46
Bur oak	5,491	149	(N/A)	0.2	0.6	148.79
Citywide total	865,913	23,466	(N/A)	100.0	100.0	56.01

Table 3: Annual Air Quality Benefits

Annual Air Quality Benefits of Public Trees

1/7/2016

Species	Deposition (lb)				Total Depos. (\$)	Avoided (lb)				Total Avoided (\$)	BVOC Emissions (lb)	BVOC Emissions (\$)	Total (lb)	Total Standard (\$) Error	% of Total Trees	Avg. \$/tree
	O ₃	NO ₂	PM ₁₀	SO ₂		NO ₂	PM ₁₀	VOC	SO ₂							
Green ash	40.6	6.5	20.0	1.8	218	167.4	24.4	23.3	159.3	1,044	0.0	0	443.3	1,262 (N/A)	34.4	8.76
Silver maple	23.4	4.0	11.9	1.0	127	58.7	8.6	8.2	56.3	367	-12.6	-47	159.5	447 (N/A)	10.3	10.40
Norway maple	14.9	2.6	7.3	0.7	80	37.1	5.4	5.1	34.7	230	-3.5	-13	104.2	297 (N/A)	7.9	9.00
Spruce	10.6	2.1	8.5	1.3	70	19.2	2.8	2.7	18.4	120	-51.4	-193	14.2	-3 (N/A)	7.4	-0.11
Apple	1.8	0.3	1.0	0.1	10	12.1	1.7	1.6	11.0	74	0.0	0	29.8	84 (N/A)	7.2	2.82
Honeylocust	12.6	2.1	5.7	0.6	66	28.3	4.2	4.0	27.3	177	-9.8	-37	74.8	207 (N/A)	4.5	10.89
Broadleaf Deciduous Small	0.1	0.0	0.0	0.0	0	0.7	0.1	0.1	0.6	4	0.0	0	1.5	4 (N/A)	2.9	0.36
Sugar maple	3.3	0.6	1.7	0.1	18	10.8	1.6	1.5	10.3	68	-2.6	-10	27.3	76 (N/A)	2.9	6.31
Blue spruce	0.0	0.0	0.0	0.0	0	0.3	0.0	0.0	0.3	2	-0.1	0	0.7	2 (N/A)	2.4	0.18
Cottonwood	0.9	0.1	0.6	0.0	5	9.5	1.4	1.3	9.4	60	0.0	0	23.3	65 (N/A)	2.4	6.54
Maple	1.0	0.2	0.5	0.0	5	3.7	0.5	0.5	3.6	23	-0.4	-1	9.6	27 (N/A)	2.1	3.00
Northern hackberry	1.6	0.3	0.8	0.1	9	6.3	0.9	0.9	5.9	39	0.0	0	16.7	48 (N/A)	2.1	5.28
Red maple	0.6	0.1	0.4	0.0	4	4.3	0.6	0.6	4.0	27	-0.3	-1	10.4	29 (N/A)	1.9	3.64
Littleleaf linden	0.9	0.1	0.5	0.0	5	4.5	0.7	0.6	4.3	28	-0.5	-2	11.2	31 (N/A)	1.7	4.47
River birch	1.7	0.3	0.8	0.1	9	3.2	0.5	0.4	3.0	20	-0.4	-1	9.7	28 (N/A)	1.4	4.62
Black walnut	1.3	0.2	0.7	0.1	7	4.9	0.7	0.7	4.6	30	0.0	0	13.1	37 (N/A)	1.0	9.35
Paper birch	0.4	0.1	0.2	0.0	2	2.8	0.4	0.4	2.7	18	0.0	0	7.0	20 (N/A)	1.0	4.96
Dogwood	0.0	0.0	0.0	0.0	0	0.1	0.0	0.0	0.1	0	0.0	0	0.2	0 (N/A)	1.0	0.11
American basswood	1.5	0.3	0.7	0.1	8	4.7	0.7	0.6	4.3	29	-1.3	-5	11.6	32 (N/A)	0.7	10.74
Catalpa	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	0	0.1	0 (N/A)	0.7	0.08
Ohio buckeye	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	0	0.1	0 (N/A)	0.5	0.14
Elm	0.5	0.1	0.2	0.0	3	1.6	0.2	0.2	1.5	10	0.0	0	4.4	13 (N/A)	0.5	6.28
Northern red oak	0.0	0.0	0.0	0.0	0	0.1	0.0	0.0	0.1	0	0.0	0	0.1	0 (N/A)	0.5	0.21
Pear	0.4	0.1	0.2	0.0	2	1.7	0.3	0.2	1.7	11	0.0	0	4.6	13 (N/A)	0.5	6.56
Kentucky coffeetree	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	0	0.1	0 (N/A)	0.5	0.08
Tulip tree	0.1	0.0	0.1	0.0	1	1.1	0.2	0.2	1.1	7	0.0	0	2.6	7 (N/A)	0.2	7.42
Boxelder	0.4	0.1	0.2	0.0	2	1.2	0.2	0.2	1.2	8	-0.2	-1	3.3	9 (N/A)	0.2	9.31
Willow	0.2	0.0	0.1	0.0	1	1.1	0.2	0.2	1.1	7	-0.1	0	2.8	8 (N/A)	0.2	7.92
Swamp white oak	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0 (N/A)	0.2	0.14
Amur maple	0.0	0.0	0.0	0.0	0	0.4	0.1	0.1	0.3	2	0.0	0	0.9	3 (N/A)	0.2	2.55
Mulberry	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0 (N/A)	0.2	0.11
Northern white cedar	0.3	0.1	0.3	0.0	2	0.7	0.1	0.1	0.7	4	-1.4	-5	0.9	1 (N/A)	0.2	1.45
Bur oak	0.8	0.1	0.4	0.0	4	1.9	0.3	0.3	1.8	12	0.0	0	5.5	16 (N/A)	0.2	15.71
Citywide total	120.0	20.2	62.8	6.2	660	388.7	56.6	54.0	369.3	2,422	-84.4	-317	993.5	2,765 (N/A)	100.0	6.60

Table 4: Annual Carbon Stored

Stored CO2 Benefits of Public Trees

1/7/2016

Species	Total Stored CO2 (lbs)	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Green ash	1,317,591	9,882	(N/A)	34.4	47.2	68.62
Silver maple	495,794	3,718	(N/A)	10.3	17.7	86.48
Norway maple	246,613	1,850	(N/A)	7.9	8.8	56.05
Spruce	131,845	989	(N/A)	7.4	4.7	31.90
Apple	32,670	245	(N/A)	7.2	1.2	8.17
Honeylocust	162,143	1,216	(N/A)	4.5	5.8	64.00
Broadleaf Deciduous	1,224	9	(N/A)	2.9	0.0	0.76
Sugar maple	96,583	724	(N/A)	2.9	3.5	60.36
Blue spruce	22	0	(N/A)	2.4	0.0	0.02
Cottonwood	31,444	236	(N/A)	2.4	1.1	23.58
Maple	10,974	82	(N/A)	2.1	0.4	9.14
Northern hackberry	23,271	175	(N/A)	2.1	0.8	19.39
Red maple	8,805	66	(N/A)	1.9	0.3	8.26
Littleleaf linden	19,507	146	(N/A)	1.7	0.7	20.90
River birch	28,628	215	(N/A)	1.4	1.0	35.78
Black walnut	43,893	329	(N/A)	1.0	1.6	82.30
Paper birch	13,176	99	(N/A)	1.0	0.5	24.71
Dogwood	55	0	(N/A)	1.0	0.0	0.10
American basswood	55,430	416	(N/A)	0.7	2.0	138.57
Catalpa	36	0	(N/A)	0.7	0.0	0.09
Ohio buckeye	34	0	(N/A)	0.5	0.0	0.13
Elm	15,785	118	(N/A)	0.5	0.6	59.19
Northern red oak	25	0	(N/A)	0.5	0.0	0.09
Pear	6,074	46	(N/A)	0.5	0.2	22.78
Kentucky coffeetree	24	0	(N/A)	0.5	0.0	0.09
Tulip tree	3,672	28	(N/A)	0.2	0.1	27.54
Boxelder	14,280	107	(N/A)	0.2	0.5	107.10
Willow	3,624	27	(N/A)	0.2	0.1	27.18
Swamp white oak	17	0	(N/A)	0.2	0.0	0.13
Amur maple	908	7	(N/A)	0.2	0.0	6.81
Mulberry	14	0	(N/A)	0.2	0.0	0.10
Northern white cedar	3,343	25	(N/A)	0.2	0.1	25.07
Bur oak	25,943	195	(N/A)	0.2	0.9	194.57
Citywide total	2,793,446	20,951	(N/A)	100.0	100.0	50.00

Table 5: Annual Carbon Sequestered

Annual CO₂ Benefits of Public Trees

1/7/2016

Species	Sequestered (lb)	Sequestered (\$)	Decomposition Release (lb)	Maintenance Release (lb)	Total Released (\$)	Avoided (lb)	Avoided (\$)	Net Total (lb)	Total Standard (\$ Error)	% of Total Trees	% of Total \$	Avg. \$/tree
Green ash	82,902	622	-6,325	-360	-50	58,958	442	135,176	1,014 (N/A)	34.4	44.1	7.04
Silver maple	44,002	330	-2,380	-128	-19	20,867	156	62,360	468 (N/A)	10.3	20.3	10.88
Norway maple	9,217	69	-1,185	-83	-10	12,842	96	20,791	156 (N/A)	7.9	6.8	4.73
Spruce	4,429	33	-633	-79	-5	6,797	51	10,513	79 (N/A)	7.4	3.4	2.54
Apple	3,698	28	-157	-35	-1	4,083	31	7,588	57 (N/A)	7.2	2.5	1.90
Honeylocust	11,602	87	-778	-46	-6	10,103	76	20,880	157 (N/A)	4.5	6.8	8.24
Broadleaf Deciduous Smal	239	2	-6	-4	0	217	2	446	3 (N/A)	2.9	0.1	0.28
Sugar maple	5,123	38	-465	-26	-4	3,807	29	8,439	63 (N/A)	2.9	2.8	5.27
Blue spruce	17	0	0	-2	0	104	1	119	1 (N/A)	2.4	0.0	0.09
Cottonwood	3,980	30	-151	-18	-1	3,460	26	7,272	55 (N/A)	2.4	2.4	5.45
Maple	1,466	11	-53	-7	0	1,333	10	2,740	21 (N/A)	2.1	0.9	2.28
Northern hackberry	1,440	11	-112	-13	-1	2,165	16	3,480	26 (N/A)	2.1	1.1	2.90
Red maple	1,322	10	-42	-9	0	1,485	11	2,755	21 (N/A)	1.9	0.9	2.58
Littleleaf linden	2,711	20	-94	-11	-1	1,588	12	4,194	31 (N/A)	1.7	1.4	4.49
River birch	392	3	-138	-9	-1	1,106	8	1,351	10 (N/A)	1.4	0.4	1.69
Black walnut	2,488	19	-211	-11	-2	1,692	13	3,958	30 (N/A)	1.0	1.3	7.42
Paper birch	1,316	10	-63	-6	-1	997	7	2,244	17 (N/A)	1.0	0.7	4.21
Dogwood	35	0	0	-1	0	22	0	56	0 (N/A)	1.0	0.0	0.10
American basswood	3,214	24	-266	-11	-2	1,605	12	4,541	34 (N/A)	0.7	1.5	11.35
Catalpa	8	0	0	-1	0	13	0	20	0 (N/A)	0.7	0.0	0.05
Ohio buckeye	11	0	0	0	0	14	0	25	0 (N/A)	0.5	0.0	0.09
Elm	859	6	-76	-4	-1	557	4	1,337	10 (N/A)	0.5	0.4	5.01
Northern red oak	10	0	0	0	0	22	0	31	0 (N/A)	0.5	0.0	0.12
Pear	535	4	-29	-4	0	617	5	1,119	8 (N/A)	0.5	0.4	4.20
Kentucky coffeetree	5	0	0	0	0	9	0	13	0 (N/A)	0.5	0.0	0.05
Tulip tree	445	3	-18	-2	0	393	3	819	6 (N/A)	0.2	0.3	6.14
Boxelder	1,038	8	-69	-4	-1	433	3	1,399	10 (N/A)	0.2	0.5	10.49
Willow	386	3	-17	-2	0	395	3	762	6 (N/A)	0.2	0.2	5.71
Swamp white oak	5	0	0	0	0	7	0	12	0 (N/A)	0.2	0.0	0.09
Amur maple	114	1	-4	-1	0	124	1	232	2 (N/A)	0.2	0.1	1.74
Mulberry	9	0	0	0	0	6	0	14	0 (N/A)	0.2	0.0	0.10
Northern white cedar	187	1	-16	-3	0	246	2	415	3 (N/A)	0.2	0.1	3.11
Bur oak	960	7	-125	-4	-1	650	5	1,481	11 (N/A)	0.2	0.5	11.11
Citywide total	184,165	1,381	-13,413	-885	-107	136,717	1,025	306,584	2,299 (N/A)	100.0	100.0	5.49

Table 6: Annual Social and Aesthetic Benefits

Annual Aesthetic/Other Benefits of Public Trees					
1/7/2016					
Species	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Green ash	7,220	(N/A)	34.4	38.8	50.14
Silver maple	3,731	(N/A)	10.3	20.1	86.76
Norway maple	903	(N/A)	7.9	4.9	27.38
Spruce	658	(N/A)	7.4	3.5	21.21
Apple	209	(N/A)	7.2	1.1	6.97
Honeylocust	2,808	(N/A)	4.5	15.1	147.76
Broadleaf Deciduous Small	9	(N/A)	2.9	0.0	0.73
Sugar maple	547	(N/A)	2.9	2.9	45.61
Blue spruce	50	(N/A)	2.4	0.3	5.03
Cottonwood	424	(N/A)	2.4	2.3	42.40
Maple	198	(N/A)	2.1	1.1	21.99
Northern hackberry	244	(N/A)	2.1	1.3	27.14
Red maple	239	(N/A)	1.9	1.3	29.84
Littleleaf linden	316	(N/A)	1.7	1.7	45.21
River birch	42	(N/A)	1.4	0.2	7.07
Black walnut	211	(N/A)	1.0	1.1	52.63
Paper birch	137	(N/A)	1.0	0.7	34.34
Dogwood	0	(N/A)	1.0	0.0	0.03
American basswood	234	(N/A)	0.7	1.3	77.86
Catalpa	16	(N/A)	0.7	0.1	5.26
Ohio buckeye	5	(N/A)	0.5	0.0	2.74
Elm	71	(N/A)	0.5	0.4	35.43
Northern red oak	3	(N/A)	0.5	0.0	1.54
Pear	31	(N/A)	0.5	0.2	15.48
Kentucky coffeetree	11	(N/A)	0.5	0.1	5.26
Tulip tree	46	(N/A)	0.2	0.2	45.86
Boxelder	65	(N/A)	0.2	0.4	65.43
Willow	39	(N/A)	0.2	0.2	39.16
Swamp white oak	3	(N/A)	0.2	0.0	2.74
Amur maple	6	(N/A)	0.2	0.0	6.40
Mulberry	0	(N/A)	0.2	0.0	0.03
Northern white cedar	47	(N/A)	0.2	0.3	47.08
Bur oak	67	(N/A)	0.2	0.4	66.60
Citywide total	18,590	(N/A)	100.0	100.0	44.37

Table 7: Summary of Benefits in Dollars

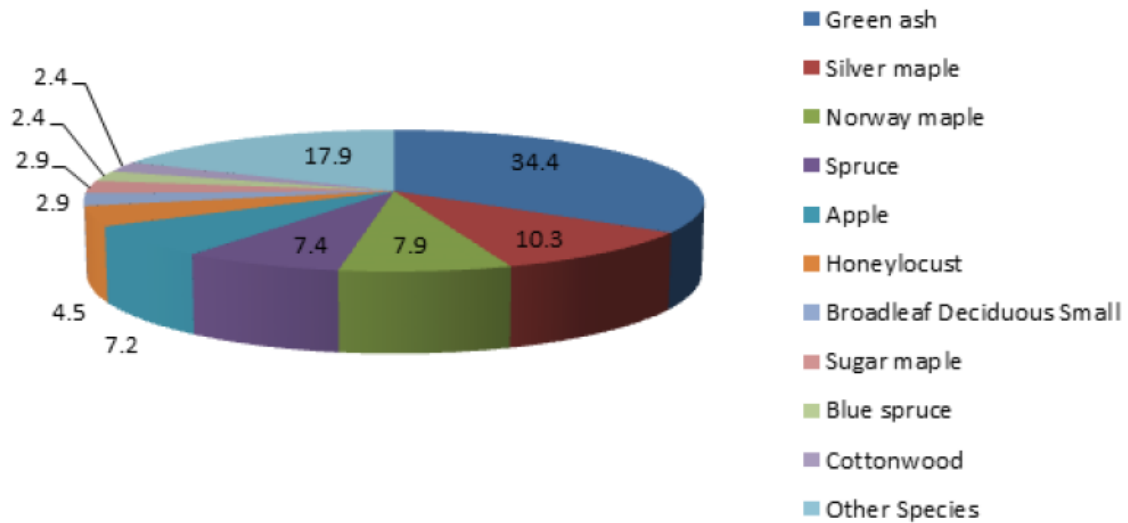
Total Annual Benefits of Public Trees by Species (\$)

1/7/2016

Species	Energy	CO ₂	Air Quality	Stormwater	Aesthetic/Other	Total (\$)	Standard Error	% of Total \$
Green ash	7,342	1,014	1,262	9,648	7,220	26,486	(N/A)	41.2
Silver maple	2,554	468	447	4,177	3,731	11,376	(N/A)	17.7
Norway maple	1,660	156	297	1,953	903	4,970	(N/A)	7.7
Spruce	842	79	-3	2,400	658	3,975	(N/A)	6.2
Apple	570	57	84	236	209	1,156	(N/A)	1.8
Honeylocust	1,222	157	207	1,757	2,808	6,149	(N/A)	9.6
Broadleaf Deciduous Sn	32	3	4	11	9	60	(N/A)	0.1
Sugar maple	480	63	76	685	547	1,851	(N/A)	2.9
Blue spruce	16	1	2	10	50	80	(N/A)	0.1
Cottonwood	395	55	65	351	424	1,290	(N/A)	2.0
Maple	153	21	27	132	198	531	(N/A)	0.8
Northern hackberry	288	26	48	302	244	907	(N/A)	1.4
Red maple	197	21	29	136	239	621	(N/A)	1.0
Littleleaf linden	201	31	31	182	316	762	(N/A)	1.2
River birch	146	10	28	205	42	432	(N/A)	0.7
Black walnut	217	30	37	306	211	801	(N/A)	1.2
Paper birch	123	17	20	127	137	424	(N/A)	0.7
Dogwood	3	0	0	1	0	5	(N/A)	0.0
American basswood	211	34	32	303	234	813	(N/A)	1.3
Catalpa	2	0	0	1	16	20	(N/A)	0.0
Ohio buckeye	2	0	0	1	5	9	(N/A)	0.0
Elm	72	10	13	107	71	272	(N/A)	0.4
Northern red oak	3	0	0	1	3	8	(N/A)	0.0
Pear	76	8	13	36	31	165	(N/A)	0.3
Kentucky coffeetree	1	0	0	1	11	13	(N/A)	0.0
Tulip tree	44	6	7	40	46	143	(N/A)	0.2
Boxelder	55	10	9	84	65	224	(N/A)	0.3
Willow	47	6	8	38	39	138	(N/A)	0.2
Swamp white oak	1	0	0	0	3	4	(N/A)	0.0
Amur maple	18	2	3	7	6	36	(N/A)	0.1
Mulberry	1	0	0	0	0	1	(N/A)	0.0
Northern white cedar	30	3	1	80	47	163	(N/A)	0.3
Bur oak	82	11	16	149	67	324	(N/A)	0.5
Citywide Total	17,088	2,299	2,765	23,466	18,590	64,209	(N/A)	100.0

Species Distribution of Public Trees

1/7/2016

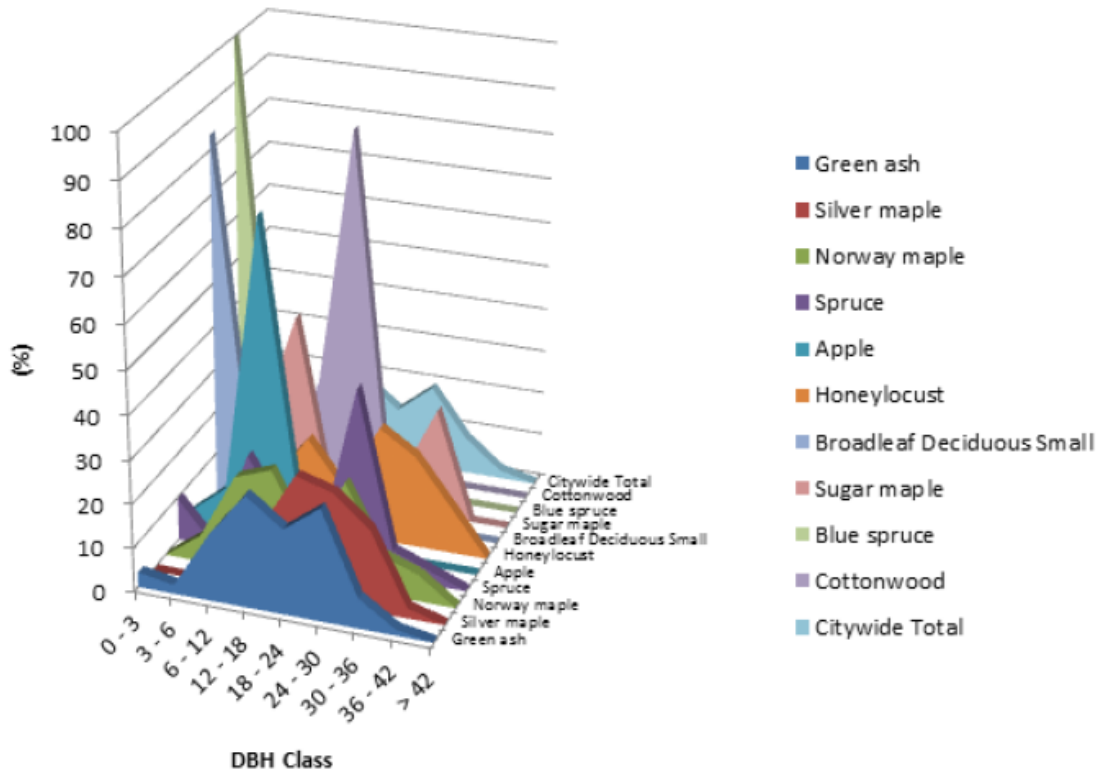


Species	Percent
Green ash	34.4
Silver maple	10.3
Norway maple	7.9
Spruce	7.4
Apple	7.2
Honeylocust	4.5
Broadleaf Deciduous Small	2.9
Sugar maple	2.9
Blue spruce	2.4
Cottonwood	2.4
Other Species	17.9
Total	100.0

Figure 1: Species Distribution

Relative Age Distribution of Top 10 Public Tree Species for All Zones (%)

1/7/2016



Species	DBH class (in)								
	0-3	3-6	6-12	12-18	18-24	24-30	30-36	36-42	> 42
Green ash	3.47	2.08	15.28	25.69	19.44	25.69	6.94	1.39	0.00
Silver maple	0.00	0.00	11.63	13.95	27.91	25.58	18.60	2.33	0.00
Norway maple	0.00	6.06	21.21	24.24	9.09	24.24	9.09	6.06	0.00
Spruce	9.68	0.00	22.58	9.68	6.45	41.94	6.45	3.23	0.00
Apple	3.33	10.00	73.33	13.33	0.00	0.00	0.00	0.00	0.00
Honeylocust	0.00	0.00	10.53	21.05	10.53	26.32	21.05	10.53	0.00
Broadleaf Deciduous Sm	83.33	8.33	8.33	0.00	0.00	0.00	0.00	0.00	0.00
Sugar maple	0.00	16.67	41.67	0.00	8.33	8.33	25.00	0.00	0.00
Blue spruce	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cottonwood	0.00	0.00	20.00	80.00	0.00	0.00	0.00	0.00	0.00
Citywide Total	14.08	2.63	21.96	19.09	12.65	19.33	8.35	1.91	0.00

Figure 2: Relative Age Class

Leaf Condition

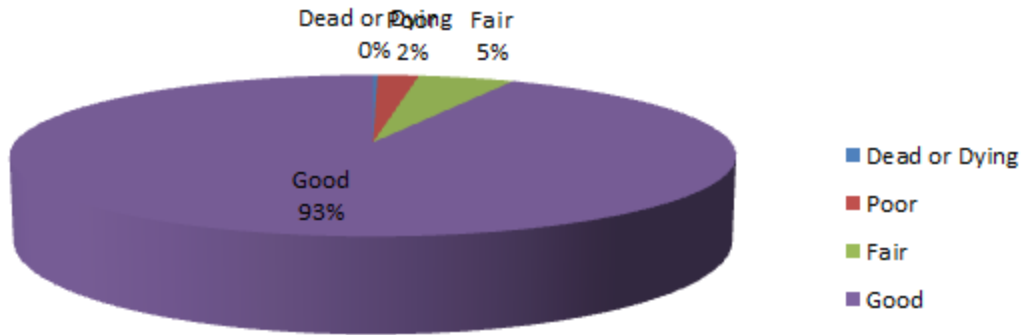


Figure 3: Foliage Condition

Wood Condition

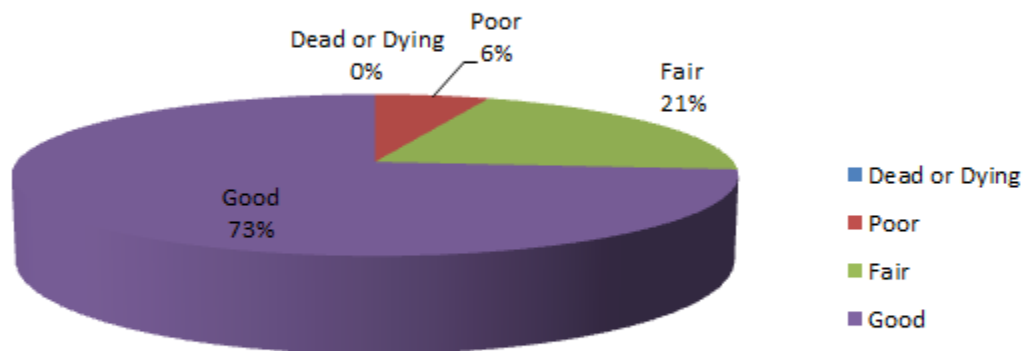
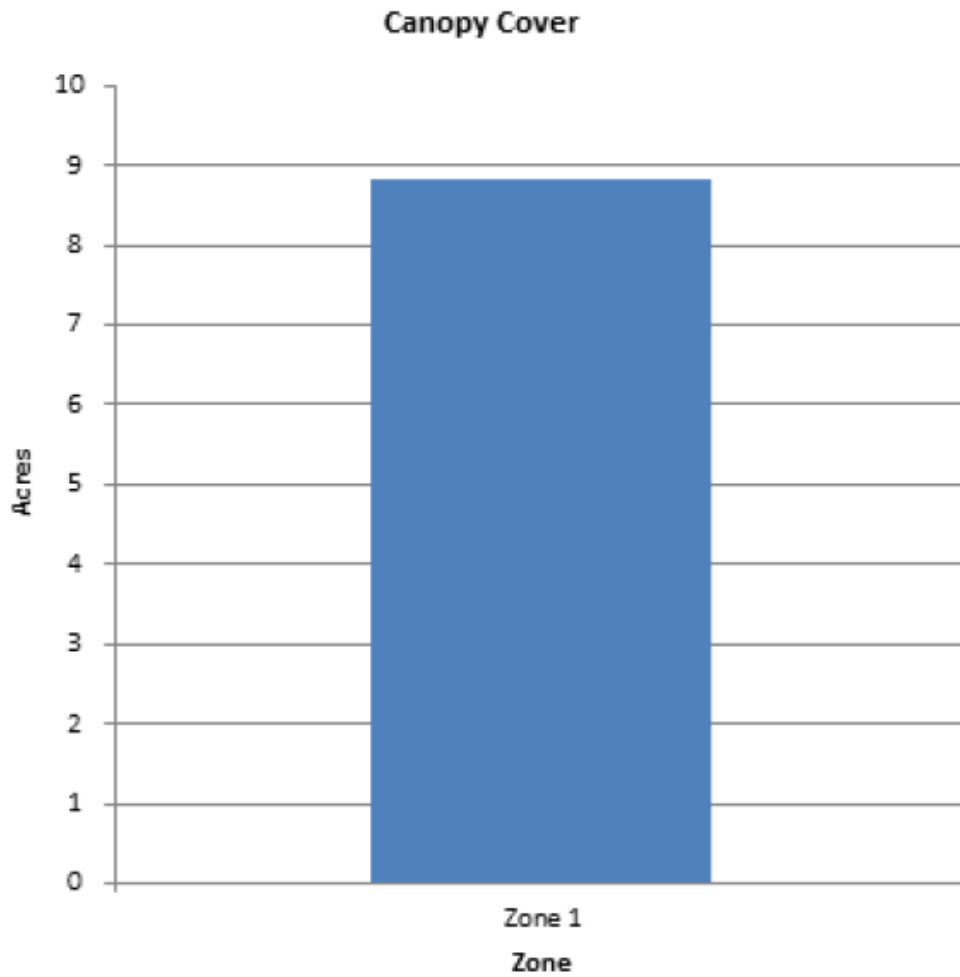


Figure 4: Wood Condition

Canopy Cover of Public Trees (Acres)

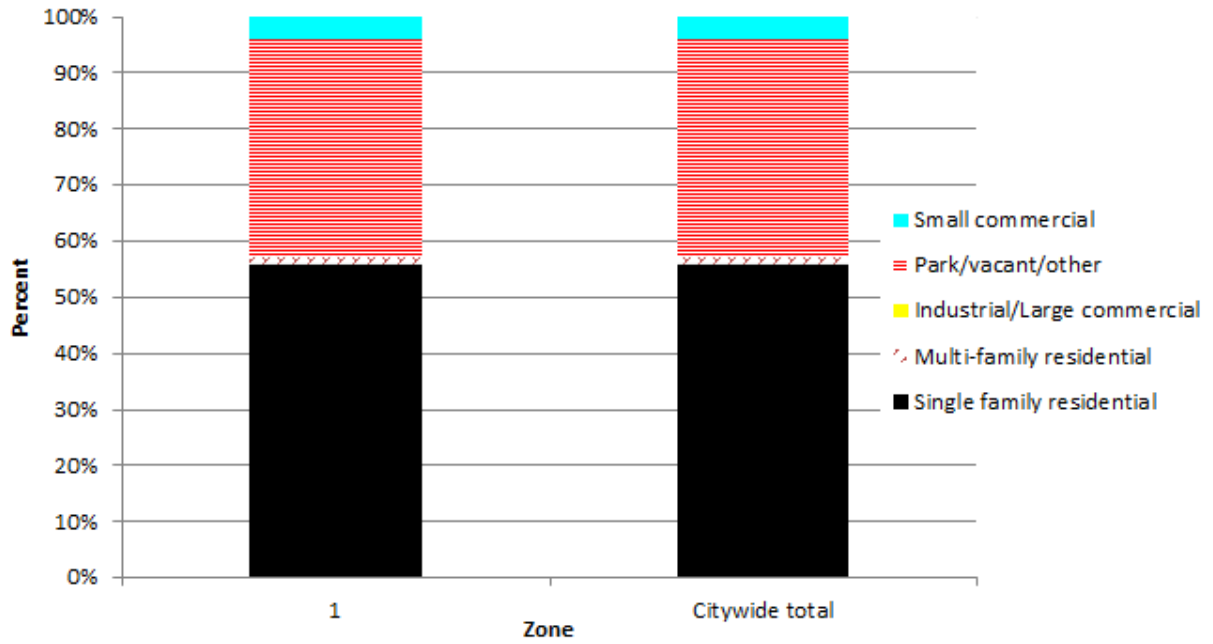
1/7/2016



Zone	Acres	% of Total Canopy Cover
Zone 1	9	100.0
Citywide total	9	100.0

Figure 5: Canopy Cover in Acres

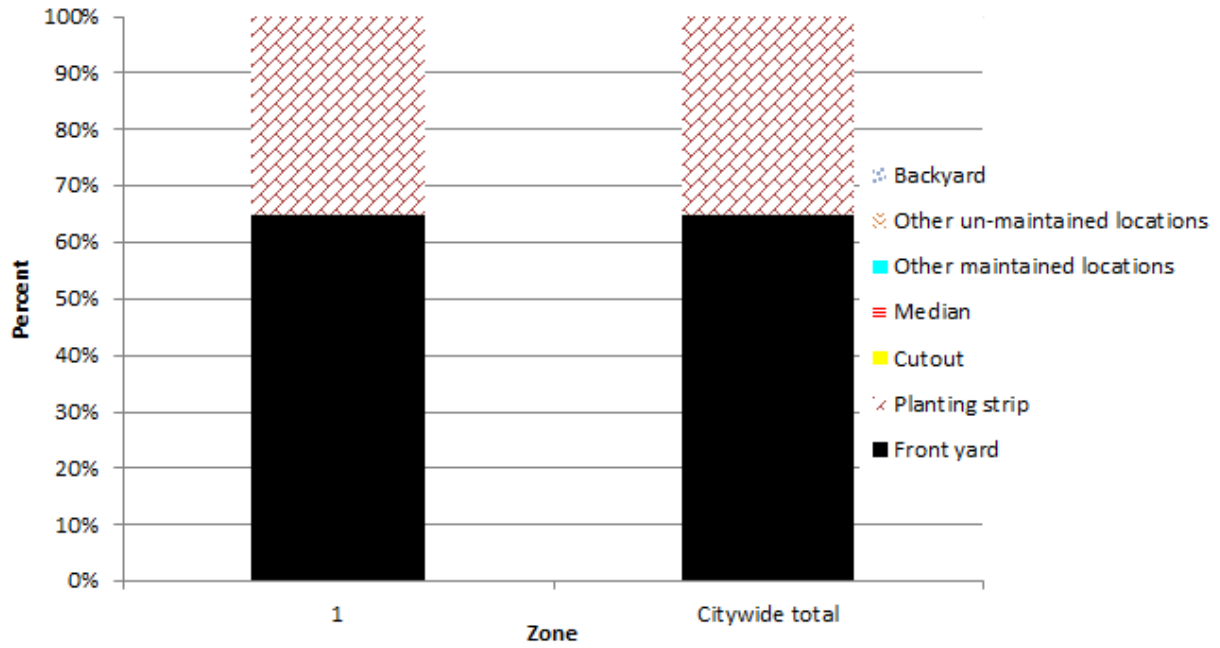
Land use Public Trees by Zone (%)



Zone	Single family residential	Multi-family residential	Industrial/Large commercial	Park/vacant/other	Small commercial
1	55.85	1.19	0.00	38.90	4.06
Citywide total	55.85	1.19	0.00	38.90	4.06

Figure 6: Land Use of city/park trees

Location Public Trees by Zone (%)



Zone	Front yard	Planting strip	Cutout	Median	Other maintained locations	Other un-maintained locations	Backyard
1	64.68	35.32	0.00	0.00	0.00	0.00	0.00
Citywide total	64.68	35.32	0.00	0.00	0.00	0.00	0.00

Figure 7: Location of city/park trees

Appendix B: ArcGIS Mapping



Figure 1: Location of Ash Trees

Coulter, Iowa



Figure 2: Location of EAB symptoms

Coulter, Iowa

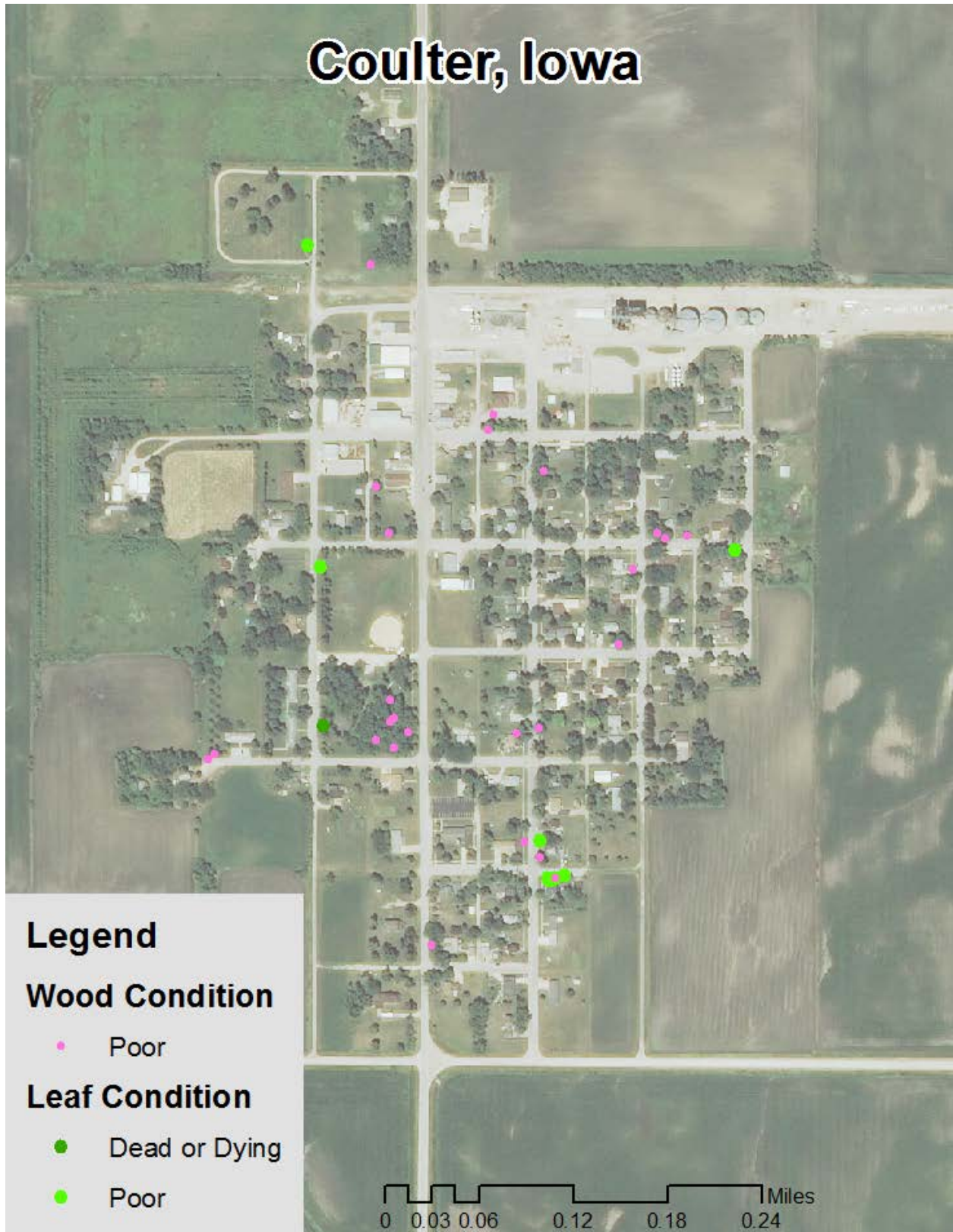


Figure 3: Location of Poor Condition Trees

Coulter, Iowa



Figure 4: Location of Trees with Recommended Maintenance

Coulter, Iowa

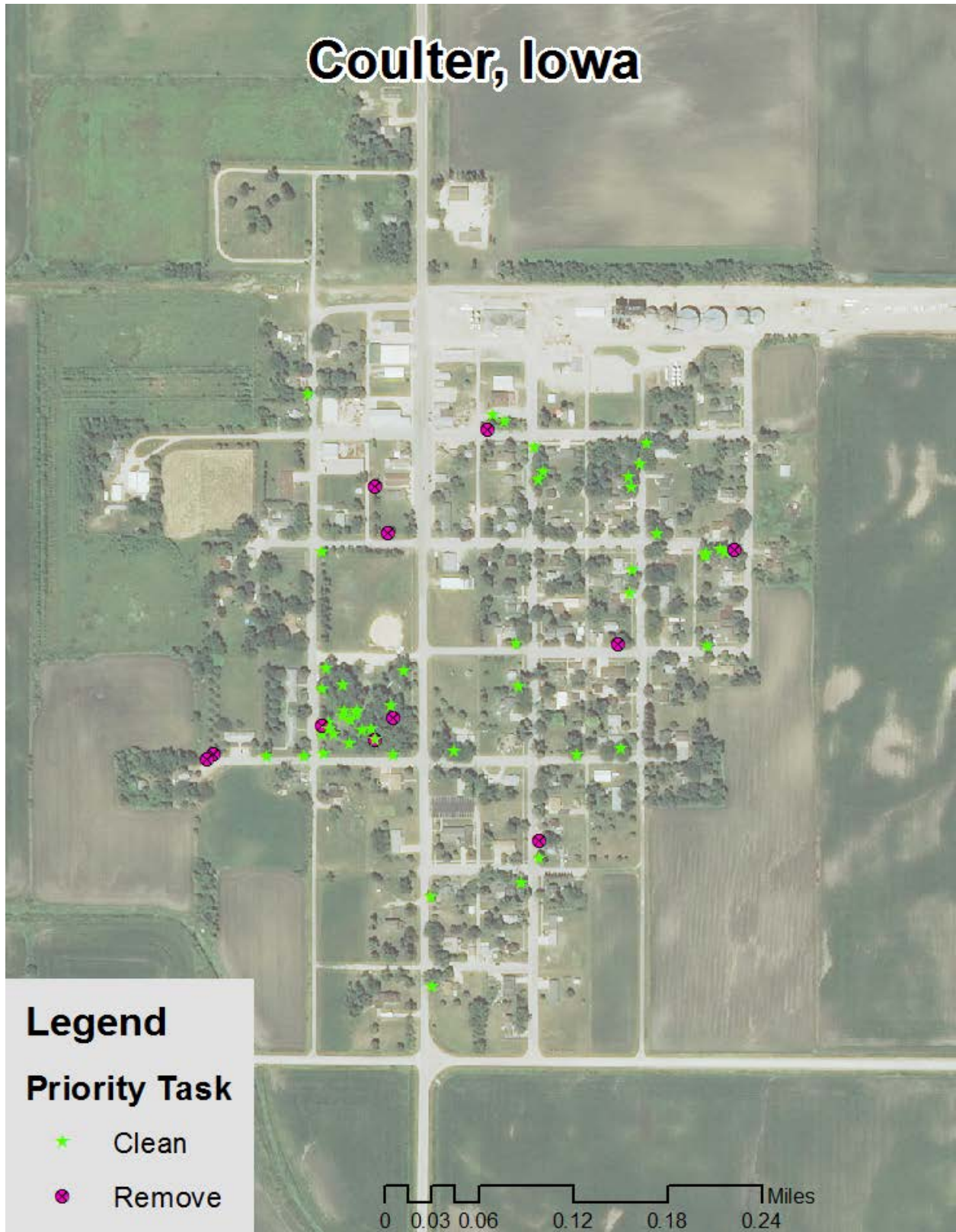


Figure 5: Maintenance Tasks *City ownership of the trees recommended for removal should be verified prior to any removal*

Appendix C: Coulter Tree Ordinances

q. "Junk" means all old or scrap copper, brass, lead or any other non-ferrous metal; old or discarded rope, rags, batteries, paper, trash, rubber, debris, waste or used lumber, or salvaged wood; dismantled vehicles, machinery and appliances or parts of such vehicles, machinery or appliances; iron, steel or other old or scrap ferrous materials; old discarded glass, tinwares, plastic or old or discarded household goods or hardware. Neatly stacked firewood located on a side yard or a rear yard is not considered junk.

2. The term "property owner" means the contract purchaser if there is one of record, otherwise the record holder of legal title.

(Code of Iowa, Sec. 364.1)

3-2-2 NUISANCES PROHIBITED. The creation or maintenance of a nuisance is prohibited, and a nuisance, public or private, may be abated in the manner provided in this chapter.

(Code of Iowa, Sec. 657.3)

3-2-3 OTHER CONDITIONS REGULATED. The following actions are required and may also be abated in the manner provided in this Ordinance:

1. ~~The removal of diseased trees or dead wood, but not diseased trees and dead wood outside the lot~~ and property lines and inside the curb lines upon the public street. *city is responsible for*

(Code of Iowa, Sec. 364.12(3)(b))

2. The removal, repair, or dismantling of dangerous buildings or structures.

(Code of Iowa, Sec. 364.12(3)(c))

3. The numbering of buildings.

(Code of Iowa, Sec. 364.12(3)(d))

4. The connection to public drainage systems from abutting property when necessary for public health or safety.

(Code of Iowa, Sec. 364.12(3)(e))

5. The connection to public sewer systems from abutting property, and the installation of sanitary toilet facilities and removal of other toilet facilities on such property.

(Code of Iowa, Sec. 364.12(3)(f))

6. The cutting or destruction of weeds or other growth which constitutes a health, safety, or fire hazard.

(Code of Iowa, Sec. 364.12(3)(g))

7. The maintenance, by the property owner, of all property outside the lot and property lines and inside the curb lines upon public streets, including maintaining a fifteen (15) foot clearance above the street from trees extending over the streets (except as provided in Section 3-2-3(1)).

The State of Iowa is an Equal Opportunity Employer and provider of ADA services.

Federal law prohibits employment discrimination on the basis of race, color, age, religion, national origin, sex or disability. State law prohibits employment discrimination on the basis of race, color, creed, age, sex, sexual orientation, gender identity, national origin, religion, pregnancy, or disability. State law also prohibits public accommodation (such as access to services or physical facilities) discrimination on the basis of race, color, creed, religion, sex, sexual orientation, gender identity, religion, national origin, or disability. If you believe you have been discriminated against in any program, activity or facility as described above, or if you desire further information, please contact the Iowa Civil Rights Commission, 1-800-457-4416, or write to the Iowa Department of Natural Resources, Wallace State Office Bldg., 502 E. 9th St., Des Moines, IA 50319.

If you need accommodations because of disability to access the services of this Agency, please contact the Director at 515-725-8200.