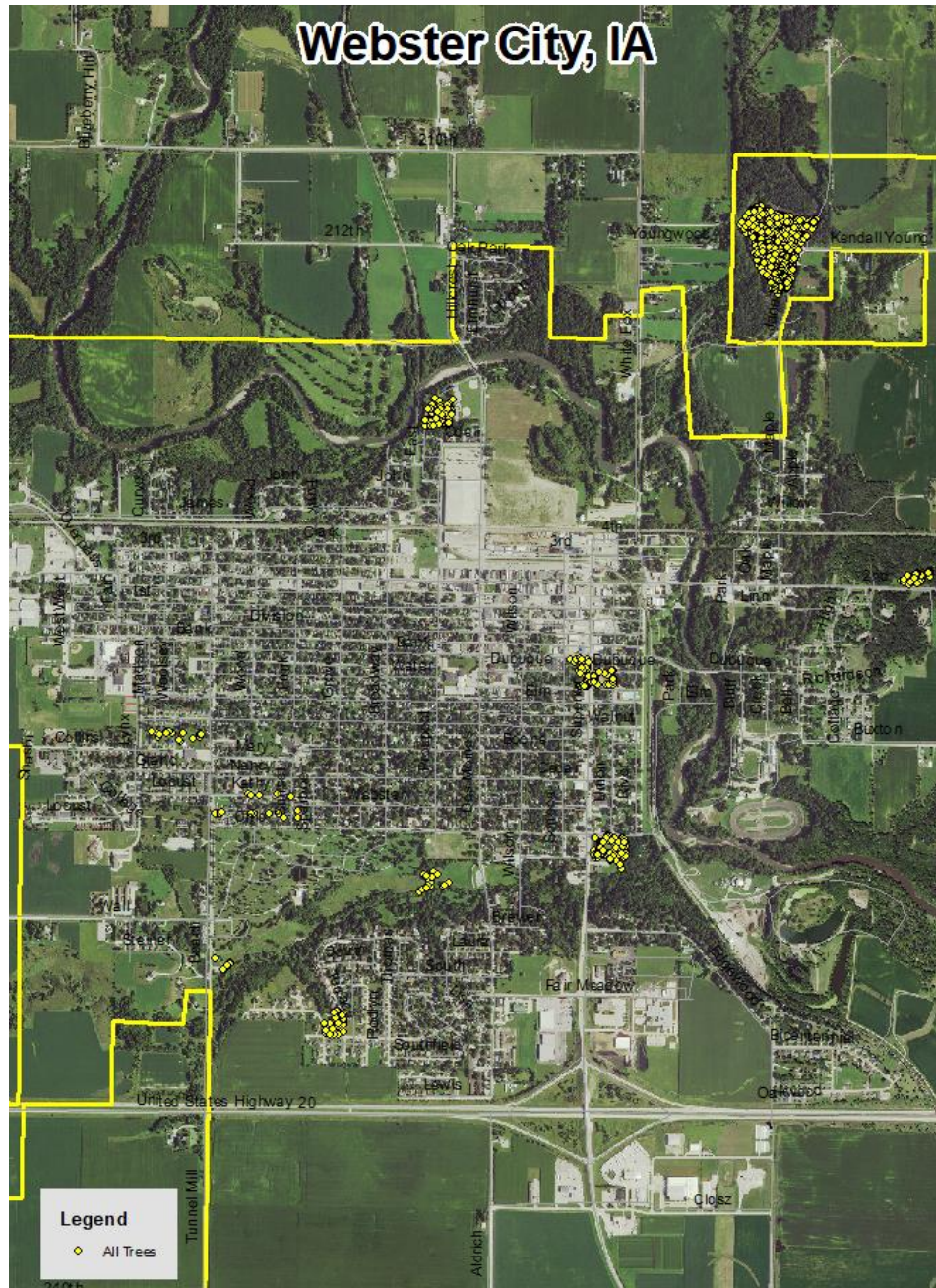# Webster City, IA

2018 Urban Forest Management Plan
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Executive Summary

Overview

This plan was developed to assist the City of Webster City 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 4% of Webster City's city owned park 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 2016 and 2017, a tree inventory was conducted using Global Positioning System (GPS) data collectors. The inventory was a complete inventory of park trees. Below are some key findings of the 869 trees inventoried.

- Webster City's park trees provide $162,760 of benefits annually, an average of $187 a tree
- There are over 41 species of trees
- The top three genera are: Oak 10%, Maple 10%, and Hackberry 5%
- 12% of trees are in need of some type of management
- 37 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 37 trees needing removal, 3 are critical concerns *City ownership of the trees recommended for removal should be verified prior to any removal*
- 10 of the 34 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

Introduction

This plan was developed to assist Webster City 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 anticipated 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 or treatment and replacement planting. With proper planning and management of the current canopy in Webster City, these costs can be extended over years and public safety issues from dead and dying ash trees mitigated.

Trees are an important component of Webster City'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 Webster City 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 Webster City's urban forestry goals.

Inventory

In 2016 and 2017, a tree inventory was conducted that included 100% of the city owned park trees. 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 869 city trees was entered into the USDA Forest service program Street Tree Resource Analysis Tool for Urban forestry Management as 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. Webster City's trees reduce energy related costs by approximately $44,566 annually (Appendix A, Table 1). These savings are both in Electricity (211.9 MWh) and in Natural Gas (29,062.3 Therms).

Annual Stormwater Benefits

Webster City's trees intercept about 2,239,367 gallons of rainfall or snow melt a year (Appendix A, Table 2). This interception provides $60,687 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 Webster City, it is estimated that trees remove 1,622 lbs of air pollution (ozone (O_3), particulate matter less than 10 microns (PM10), carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2)) per year with a net value of $7,601 (Appendix A, Table 3).

Annual Carbon Benefits

Carbon sequestration and storage reduce the amount of carbon in the atmosphere, mitigating climate change. In Webster City, trees sequester about 475,172 lbs of carbon a year with an associated value of $5,922 (Appendix A, Table 5). In addition, the trees store 8,085,760 lbs of carbon, with a yearly benefit of $60,643 (Appendix A, Table 4).

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. Webster City receives $43,984 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, Webster City's trees provide $162,760 of benefits annually. Benefits of individual trees vary based on size, species, health and location, but on average each of the 869 trees in Webster City provide approximately $187 annually (Appendix A, Table 7).

Forest Structure

Species Distribution

Webster City has over 41 different tree species along city streets and parks (Appendix A, Figure 1). The distribution of trees by genera is as follows:

Oak	523	60%

Maple	88	10%
Hackberry	40	5%
Ash	34	4%
Honeylocust	26	3%
Walnut	24	3%
Cedar	18	2%
Spruce	17	2%
Linden	16	2%
Cottonwood/poplar	15	2%
Willow	14	2%
Hickory	13	1%
Apple (crabapple)	10	1%
Buckeye	7	1%
Arborvitae	5	1%
Birch	4	0%
Other	4	0%
Mulberry	4	0%
Lilac	2	0%
Dogwood	1	0%
Ginkgo	1	0%
Pine	1	0%
Sycamore	1	0%
Elm	1	0%

Age Class

Most of Webster City's trees (47%) are between 18 and 30 inches in diameter at 4.5 ft (Appendix A, Figure 2). For age, it is preferred that the highest amounts of trees are in the smallest size category (a downward slope) to prepare for natural mortality and to maintain canopy cover. Webster City's size curve is in the middle, indicating middle-aged stand.

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 Webster City indicate that 35% of the trees are in good health, with only 4% of the foliage in poor health, dead or dying (Appendix A, Figure 3 & Appendix B, Figure 3). Similarly, 52% of Webster City'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	54	6%
Crown Raising	9	1%
Tree Staking	11	1%

Tree Removal	37	4%
Crown Reduction	0	0%

Canopy Cover

The total canopy with both private and public trees is 22%, 1224 acres. The canopy cover included in the Webster City inventory includes approximately 23 acres (Appendix A, Figure 4). The City's Canopy goal is to increase canopy by 3%, in 30 years. To achieve this goal it is estimated that 415 trees need to be planted annually on private and public lands.

Land Use and Location

The majority of Webster City's city and park trees are in planting strips 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	23%
Park/vacant/other	846%
Industrial/Large commercial	0%
Small commercial	0%
Multifamily residential	0%

Location

Planting strip	3%
Other maintained locations	0%
Cutout (surrounded by pavement)	0%
Front yard	97%

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

Webster City has 5 critical concern trees and 3 of those that need immediate removal. These trees can be seen on the Location of Trees with Recommended Maintenance map (Appendix B, Figure 4). It is recommended to start with the large diameter critical concern trees first. There are 8 trees over 24 inches in diameter at 4.5 ft that should be addressed immediately. Please refer to the six year maintenance plan at the end of this section. After all of the critical concern trees are addressed, there should be follow up on the trees marked as needing maintenance. There are a total of 100 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 37 removals, 4 are ash trees. There are a total of 34 ash trees, and 10 of those have signs and symptoms that have been associated with EAB. In addition, there are 12 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 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 number of trees helps ensure continuation of the benefits of the existing forest in Webster City.

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 20% of the urban forest and a single species (i.e. silver maple, sugar maple, white oak, bur oak) not make up more than 10% of the total urban forest. Presently, the forest is heavily planted with oak (60%) (Appendix A, Figure 1). Oaks, especially bur oaks 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. All trees planted must meet the restrictions in city ordinance.

Continual Monitoring
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.

Six Year Maintenance Plan
Year 1
    Removal: 13 trees- 3 critical concern trees and 10 of the largest trees marked for immediate removal
    Planting and Replacement: 16 trees to be planted in open locations
    Young Tree Pruning & Maintenance: 3 trees marked as critical concern
    Visual Survey for signs and symptoms of EAB

Year 2
    Removal: 10
    Planting and Replacement: 12 trees in open locations from year one removals
    Young Tree Pruning & Maintenance:
    Routine trimming: Contract to trim 1/3 of the Park Trees
    Visual Survey for signs and symptoms of EAB

Year 3
    Removal: 13 trees
    Planting and Replacement: 16 trees to be planted in open locations and locations from previous removals
    Young Tree Pruning & Maintenance
    Visual Survey for signs and symptoms of EAB

Year 4
    Removal: 10 trees - removal of any new critical concern trees and ash in poor health
    *Or saving for ash tree treatment and/or future ash removal
    Planting and Replacement: 12 trees in open locations from year one removals
    Young Tree Pruning & Maintenance:
    Routine trimming: Contract to trim 1/3 of the Park Trees
    Visual Survey for signs and symptoms of EAB

Year 5
    Removal: 13 trees - removal of any new critical concern trees and ash in poor health
    *Or saving for ash tree treatment and/or future ash removal
    Planting and Replacement: 16 trees to be planted in open locations and locations from previous removals
    Young Tree Pruning & Maintenance
    Visual Survey for signs and symptoms of EAB

Year 6
    Removal: 10 trees - removal of any new critical concern trees and ash in poor health *Or saving for ash tree treatment and/or future ash removal
    Planting and Replacement: 12 trees in open locations from previous removals
    Routine trimming: Contract to trim 1/3 of the city trees
    Young Tree Pruning & Maintenance:
    Visual Survey for signs and symptoms of EAB

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 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 for your county.

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? Once your county is under quarantine for EAB, contact USDA-APHIS-PPQ at 515-251-4083 or visit the website http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/regulatory.shtml. Wood waste can be disposed of as you normally would if your county is not part of a quarantine.

Canopy Replacement

As budget permits, all removed trees will be replaced. All trees will meet the restrictions in city ordinance. 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 if preventative treatments are not being used. City Code 142.02 states "All trees which, by reason of their, size, age, condition disease or location, may endanger public life or safety, or the safety of property, are hereby declared to be dangerous trees and are also declared to be a nuisance which should be removed and abated. If there is a danger that all or a substantial portion of such tree or trees might fall on any public alley, street or other public property or any private property, such condition is also hereby declared to be sufficient evidence that such tree or trees constitute a nuisance."

Budget

Purposed Treatment of Ash
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 instance, in this treatment scenario, the average ash diameter is 20 inches and at $15 per inch, about 4 trees could be treated per year (every other year treatment). This would be 8 trees selected for treatment, and Webster City would still need to find $24,000 for removal. Alternatively, if there are 15 treatable trees, it would cost approximately $2,250 a year for treatment and leave $15,200 for removal. 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 Webster City. 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

Webster City

Annual Energy Benefits of Public Trees

4/3/2018

Species	Total Electricity (MWh)	Electricity ($)	Total Natural Gas (Therms)	Natural Gas ($)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Bur oak	136.4	10,354	18,659.4	18,286	28,641	(N/A)	55.2	64.3	59.79
Northern hackberry	12.3	934	1,741.9	1,707	2,641	(N/A)	4.6	5.9	66.02
Green ash	6.0	454	810.3	794	1,248	(N/A)	3.6	2.8	40.25
Northern red oak	5.4	414	767.4	752	1,166	(N/A)	3.5	2.6	38.85
Silver maple	7.4	562	955.1	936	1,498	(N/A)	3.2	3.4	53.51
Honeylocust	6.7	505	865.8	849	1,354	(N/A)	3.0	3.0	52.06
Black walnut	6.1	463	834.1	817	1,280	(N/A)	2.6	2.9	55.67
Eastern red cedar	1.4	109	214.5	210	319	(N/A)	2.1	0.7	17.73
Black spruce	1.7	130	212.8	209	339	(N/A)	1.7	0.8	22.57
Willow	3.7	281	552.8	542	823	(N/A)	1.6	1.8	58.77
Black maple	4.0	300	548.7	538	838	(N/A)	1.6	1.9	59.85
Quaking aspen	0.0	3	6.5	6	9	(N/A)	1.6	0.0	0.66
Hickory	3.2	243	434.3	426	669	(N/A)	1.5	1.5	51.44
Norway maple	2.4	183	344.4	338	521	(N/A)	1.5	1.2	40.06
American basswood	2.9	219	406.3	398	617	(N/A)	1.4	1.4	51.40
Apple	0.3	23	52.4	51	74	(N/A)	1.2	0.2	7.43
Sugar maple	2.1	158	288.8	283	441	(N/A)	1.2	1.0	44.14
Red maple	1.0	73	130.0	127	200	(N/A)	1.0	0.4	22.23
Ohio buckeye	1.0	74	149.9	147	221	(N/A)	0.8	0.5	31.56
Amur maple	0.5	36	68.3	67	103	(N/A)	0.8	0.2	14.75
Swamp white oak	0.1	10	20.9	21	30	(N/A)	0.7	0.1	5.04
Northern white cedar	0.7	51	87.5	86	137	(N/A)	0.6	0.3	27.31
Maple	0.3	23	42.8	42	65	(N/A)	0.6	0.1	12.96
River birch	0.1	4	8.6	8	12	(N/A)	0.5	0.0	3.07
Conifer Evergreen Large	0.5	39	58.5	57	97	(N/A)	0.5	0.2	24.14
Mulberry	0.4	31	60.7	59	91	(N/A)	0.5	0.2	22.64
Littleleaf linden	0.6	48	81.7	80	128	(N/A)	0.3	0.3	42.58
White oak	1.0	77	134.3	132	208	(N/A)	0.3	0.5	69.42
Pin oak	1.1	84	149.6	147	231	(N/A)	0.3	0.5	77.01
Ash	0.3	24	50.6	50	73	(N/A)	0.3	0.2	24.47
Lilac	0.1	7	16.6	16	24	(N/A)	0.2	0.1	11.80
Oak	0.1	9	17.4	17	26	(N/A)	0.2	0.1	13.23
Boxelder	0.5	36	67.1	66	102	(N/A)	0.2	0.2	50.95
Norway spruce	0.0	3	7.9	8	11	(N/A)	0.2	0.0	5.61
Elm	0.4	29	53.7	53	82	(N/A)	0.1	0.2	82.02
Dogwood	0.0	0	0.6	1	1	(N/A)	0.1	0.0	0.87
Ginkgo	0.0	0	0.4	0	1	(N/A)	0.1	0.0	0.57
Austrian pine	0.1	11	19.5	19	30	(N/A)	0.1	0.1	29.65
Basswood	0.2	18	27.0	26	44	(N/A)	0.1	0.1	44.23
American sycamore	0.4	33	59.0	58	91	(N/A)	0.1	0.2	91.02
Cottonwood	0.4	29	53.7	53	82	(N/A)	0.1	0.2	82.02
Total	211.9	16,085	29,062.3	28,481	44,566	(N/A)	100.0	100.0	51.34

Table 2: Annual Stormwater Benefits

Webster City

Annual Stormwater Benefits of Public Trees

4/3/2018

Species	Total rainfall interception (Gal)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Bur oak	1,437,558	38,958	(N/A)	55.2	64.2	81.33
Northern hackberry	116,868	3,167	(N/A)	4.6	5.2	79.18
Green ash	58,608	1,588	(N/A)	3.6	2.6	51.23
Northern red oak	60,581	1,642	(N/A)	3.5	2.7	54.73
Silver maple	90,181	2,444	(N/A)	3.2	4.0	87.28
Honeylocust	77,552	2,102	(N/A)	3.0	3.5	80.83
Black walnut	65,505	1,775	(N/A)	2.6	2.9	77.18
Eastern red cedar	20,691	561	(N/A)	2.1	0.9	31.15
Black spruce	20,798	564	(N/A)	1.7	0.9	37.58
Willow	39,495	1,070	(N/A)	1.6	1.8	76.45
Black maple	38,875	1,054	(N/A)	1.6	1.7	75.25
Quaking aspen	250	7	(N/A)	1.6	0.0	0.48
Hickory	33,971	921	(N/A)	1.5	1.5	70.82
Norway maple	17,910	485	(N/A)	1.5	0.8	37.33
American basswood	35,663	966	(N/A)	1.4	1.6	80.54
Apple	1,029	28	(N/A)	1.2	0.0	2.79
Sugar maple	18,728	508	(N/A)	1.2	0.8	50.75
Red maple	8,022	217	(N/A)	1.0	0.4	24.15
Ohio buckeye	8,327	226	(N/A)	0.8	0.4	32.24
Amur maple	1,676	45	(N/A)	0.8	0.1	6.49
Swamp white oak	525	14	(N/A)	0.7	0.0	2.37
Northern white cedar	13,930	377	(N/A)	0.6	0.6	75.50
Maple	2,914	79	(N/A)	0.6	0.1	15.79
River birch	199	5	(N/A)	0.5	0.0	1.35
Conifer Evergreen Large	6,154	167	(N/A)	0.5	0.3	41.70
Mulberry	1,917	52	(N/A)	0.5	0.1	12.99
Littleleaf linden	4,886	132	(N/A)	0.3	0.2	44.13
White oak	12,447	337	(N/A)	0.3	0.6	112.43
Pin oak	13,476	365	(N/A)	0.3	0.6	121.74
Ash	1,758	48	(N/A)	0.3	0.1	15.88
Lilac	333	9	(N/A)	0.2	0.0	4.51
Oak	779	21	(N/A)	0.2	0.0	10.56
Boxelder	5,323	144	(N/A)	0.2	0.2	72.12
Norway spruce	426	12	(N/A)	0.2	0.0	5.77
Elm	5,491	149	(N/A)	0.1	0.2	148.79
Dogwood	7	0	(N/A)	0.1	0.0	0.20
Ginkgo	7	0	(N/A)	0.1	0.0	0.19
Austrian pine	2,312	63	(N/A)	0.1	0.1	62.66
Basswood	1,466	40	(N/A)	0.1	0.1	39.72
American sycamore	7,239	196	(N/A)	0.1	0.3	196.17
Cottonwood	5,491	149	(N/A)	0.1	0.2	148.79
Citywide total	2,239,367	60,687	(N/A)	100.0	100.0	69.92

Table 3: Annual Air Quality Benefits

Webster City

4/3/2018

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							
Bur oak	169.1	27.0	82.3	7.6	905	651.3	94.8	90.4	618.3	4,057	0.0	0	1,741.0	4,962 (N/A)	55.2	10.36
Northern hackberry	18.5	3.2	9.4	0.8	101	59.3	8.6	8.2	55.8	368	0.0	0	163.9	469 (N/A)	4.6	11.73
Green ash	6.5	1.0	3.2	0.3	35	28.5	4.1	4.0	27.1	177	0.0	0	74.7	212 (N/A)	3.6	6.85
Northern red oak	13.2	2.3	6.3	0.6	71	26.2	3.8	3.6	24.7	163	-19.0	-71	61.6	162 (N/A)	3.5	5.40
Silver maple	13.6	2.3	6.9	0.6	74	34.8	5.1	4.9	33.5	218	-7.4	-28	94.3	264 (N/A)	3.2	9.44
Honeylocust	15.3	2.5	6.9	0.7	81	31.3	4.6	4.4	30.1	196	-12.1	-45	83.7	231 (N/A)	3.0	8.90
Black walnut	7.8	1.2	3.8	0.4	42	29.1	4.2	4.0	27.6	181	0.0	0	78.2	223 (N/A)	2.6	9.70
Eastern red cedar	4.0	0.8	3.2	0.5	26	7.0	1.0	1.0	6.5	43	-11.3	-43	12.6	27 (N/A)	2.1	1.48
Black spruce	2.5	0.5	2.1	0.3	17	8.0	1.2	1.1	7.8	50	-7.4	-28	16.1	39 (N/A)	1.7	2.62
Willow	8.6	1.5	4.1	0.4	46	18.1	2.6	2.5	16.8	112	-2.0	-7	52.6	151 (N/A)	1.6	10.75
Black maple	10.1	1.7	4.6	0.4	53	18.9	2.8	2.6	17.9	118	-3.3	-12	55.8	159 (N/A)	1.6	11.34
Quaking aspen	0.0	0.0	0.0	0.0	0	0.2	0.0	0.0	0.2	1	0.0	0	0.4	1 (N/A)	1.6	0.08
Hickory	4.1	0.6	2.0	0.2	22	15.3	2.2	2.1	14.5	95	0.0	0	41.0	117 (N/A)	1.5	8.98
Norway maple	3.1	0.5	1.6	0.1	17	11.7	1.7	1.6	11.0	72	-0.8	-3	30.5	86 (N/A)	1.5	6.64
American basswood	5.2	0.9	2.5	0.2	28	13.9	2.0	1.9	13.1	86	-4.4	-16	35.4	98 (N/A)	1.4	8.16
Apple	0.1	0.0	0.1	0.0	1	1.5	0.2	0.2	1.4	9	0.0	0	3.6	10 (N/A)	1.2	1.02
Sugar maple	2.1	0.4	1.1	0.1	12	10.0	1.5	1.4	9.5	62	-1.7	-7	24.3	67 (N/A)	1.2	6.74
Red maple	1.9	0.3	0.9	0.1	10	4.6	0.7	0.6	4.3	28	-0.6	-2	12.7	36 (N/A)	1.0	4.01
Ohio buckeye	1.5	0.3	0.8	0.1	8	4.8	0.7	0.7	4.4	30	-0.4	-1	12.9	37 (N/A)	0.8	5.22
Amur maple	0.4	0.1	0.2	0.0	2	2.3	0.3	0.3	2.2	14	0.0	0	5.9	17 (N/A)	0.8	2.38
Swamp white oak	0.0	0.0	0.0	0.0	0	0.6	0.1	0.1	0.6	4	0.0	0	1.4	4 (N/A)	0.7	0.67
Northern white cedar	1.7	0.3	1.3	0.2	11	3.2	0.5	0.4	3.0	20	-7.7	-29	2.9	2 (N/A)	0.6	0.33
Maple	0.7	0.1	0.3	0.0	4	1.4	0.2	0.2	1.4	9	-0.2	-1	4.2	12 (N/A)	0.6	2.41
River birch	0.0	0.0	0.0	0.0	0	0.3	0.0	0.0	0.2	2	0.0	0	0.6	2 (N/A)	0.5	0.41
Conifer Evergreen Large	0.7	0.1	0.6	0.1	5	2.4	0.4	0.3	2.3	15	-2.2	-8	4.7	11 (N/A)	0.5	2.82
Mulberry	0.6	0.1	0.3	0.0	3	2.0	0.3	0.3	1.9	12	0.0	0	5.5	16 (N/A)	0.5	3.93
Littleleaf linden	0.7	0.1	0.4	0.0	4	3.0	0.4	0.4	2.9	19	-0.4	-1	7.5	21 (N/A)	0.3	7.03
White oak	1.7	0.3	0.8	0.1	9	4.8	0.7	0.7	4.6	30	0.0	0	13.6	39 (N/A)	0.3	12.95
Pin oak	2.5	0.4	1.3	0.1	13	5.3	0.8	0.7	5.0	33	-4.5	-17	11.6	29 (N/A)	0.3	9.81
Ash	0.2	0.0	0.1	0.0	1	1.6	0.2	0.2	1.4	10	-0.1	0	3.7	10 (N/A)	0.3	3.47
Lilac	0.0	0.0	0.0	0.0	0	0.5	0.1	0.1	0.4	3	0.0	0	1.1	3 (N/A)	0.2	1.63
Oak	0.0	0.0	0.0	0.0	0	0.6	0.1	0.1	0.6	4	0.0	0	1.4	4 (N/A)	0.2	1.93
Boxelder	0.7	0.1	0.3	0.0	4	2.3	0.3	0.3	2.2	14	-0.3	-1	6.0	17 (N/A)	0.2	8.42
Norway spruce	0.0	0.0	0.0	0.0	0	0.2	0.0	0.0	0.2	1	-0.1	0	0.4	1 (N/A)	0.2	0.56
Elm	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)	0.1	15.71
Dogwood	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)	0.1	0.11
Ginkgo	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)	0.1	0.07
Austrian pine	0.4	0.1	0.3	0.0	2	0.7	0.1	0.1	0.6	4	-0.9	-3	1.3	3 (N/A)	0.1	3.10
Basswood	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)	0.1	7.42
American sycamore	1.2	0.2	0.5	0.1	6	2.1	0.3	0.3	2.0	13	0.0	0	6.6	19 (N/A)	0.1	19.04
Cottonwood	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)	0.1	15.71
Citywide total	300.5	49.5	149.4	14.2	1,622	1,012.2	147.3	140.5	960.4	6,304	-86.8	-326	2,687.2	7,601 (N/A)	100.0	8.76

Table 4: Annual Carbon Stored

Webster City

Stored CO2 Benefits of Public Trees

4/3/2018

Species	Total Stored CO2 (lbs)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Bur oak	5,467,698	41,008	(N/A)	55.2	67.6	85.61
Northern hackberry	279,953	2,100	(N/A)	4.6	3.5	52.49
Green ash	216,201	1,622	(N/A)	3.6	2.7	52.31
Northern red oak	295,141	2,214	(N/A)	3.5	3.7	73.79
Silver maple	295,331	2,215	(N/A)	3.2	3.7	79.11
Honeylocust	197,827	1,484	(N/A)	3.0	2.4	57.07
Black walnut	253,437	1,901	(N/A)	2.6	3.1	82.64
Eastern red cedar	13,126	98	(N/A)	2.1	0.2	5.47
Black spruce	14,271	107	(N/A)	1.7	0.2	7.14
Willow	141,007	1,058	(N/A)	1.6	1.7	75.54
Black maple	106,913	802	(N/A)	1.6	1.3	57.27
Quaking aspen	170	1	(N/A)	1.6	0.0	0.09
Hickory	132,245	992	(N/A)	1.5	1.6	76.30
Norway maple	50,697	380	(N/A)	1.5	0.6	29.25
American basswood	200,068	1,501	(N/A)	1.4	2.5	125.04
Apple	3,312	25	(N/A)	1.2	0.0	2.48
Sugar maple	60,051	450	(N/A)	1.2	0.7	45.04
Red maple	20,700	155	(N/A)	1.0	0.3	17.25
Ohio buckeye	25,964	195	(N/A)	0.8	0.3	27.82
Amur maple	6,963	52	(N/A)	0.8	0.1	7.46
Swamp white oak	706	5	(N/A)	0.7	0.0	0.88
Northern white cedar	19,532	146	(N/A)	0.6	0.2	29.30
Maple	8,013	60	(N/A)	0.6	0.1	12.02
River birch	269	2	(N/A)	0.5	0.0	0.50
Conifer Evergreen La	4,681	35	(N/A)	0.5	0.1	8.78
Mulberry	9,971	75	(N/A)	0.5	0.1	18.70
Littleleaf linden	15,408	116	(N/A)	0.3	0.2	38.52
White oak	55,558	417	(N/A)	0.3	0.7	138.90
Pin oak	65,142	489	(N/A)	0.3	0.8	162.86
Ash	3,302	25	(N/A)	0.3	0.0	8.26
Lilac	1,086	8	(N/A)	0.2	0.0	4.07
Oak	1,220	9	(N/A)	0.2	0.0	4.57
Boxelder	22,225	167	(N/A)	0.2	0.3	83.35
Norway spruce	76	1	(N/A)	0.2	0.0	0.29
Elm	25,943	195	(N/A)	0.1	0.3	194.57
Dogwood	14	0	(N/A)	0.1	0.0	0.10
Ginkgo	5	0	(N/A)	0.1	0.0	0.03
Austrian pine	2,661	20	(N/A)	0.1	0.0	19.96
Basswood	3,672	28	(N/A)	0.1	0.0	27.54
American sycamore	39,259	294	(N/A)	0.1	0.5	294.44
Cottonwood	25,943	195	(N/A)	0.1	0.3	194.57
Citywide total	8,085,760	60,643	(N/A)	100.0	100.0	69.87

Table 5: Annual Carbon Sequestered

Annual CO₂ Benefits of Public Trees

4/3/2018

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
Bur oak	326,523	2,449	-26,245	-1,391	-207	228,830	1,716	527,717	3,958 (N/A)	55.2	66.8	8.26
Northern hackberry	15,301	115	-1,344	-116	-11	20,633	155	34,475	259 (N/A)	4.6	4.4	6.46
Green ash	13,653	102	-1,038	-64	-8	10,024	75	22,576	169 (N/A)	3.6	2.9	5.46
Northern red oak	3,509	26	-1,417	-74	-11	9,140	69	11,159	84 (N/A)	3.5	1.4	2.79
Silver maple	25,664	192	-1,418	-75	-11	12,426	93	36,597	274 (N/A)	3.2	4.6	9.80
Honeylocust	14,233	107	-950	-52	-8	11,160	84	24,392	183 (N/A)	3.0	3.1	7.04
Black walnut	14,609	110	-1,216	-63	-10	10,230	77	23,559	177 (N/A)	2.6	3.0	7.68
Eastern red cedar	473	4	-63	-27	-1	2,407	18	2,789	21 (N/A)	2.1	0.4	1.16
Black spruce	1,204	9	-69	-27	-1	2,873	22	3,982	30 (N/A)	1.7	0.5	1.99
Willow	4,519	34	-678	-42	-5	6,211	47	10,011	75 (N/A)	1.6	1.3	5.36
Black maple	4,177	31	-513	-37	-4	6,631	50	10,257	77 (N/A)	1.6	1.3	5.50
Quaking aspen	36	0	-1	-3	0	62	0	94	1 (N/A)	1.6	0.0	0.05
Hickory	7,542	57	-635	-33	-5	5,371	40	12,246	92 (N/A)	1.5	1.6	7.06
Norway maple	4,325	32	-243	-24	-2	4,051	30	8,108	61 (N/A)	1.5	1.0	4.68
American basswood	10,852	81	-960	-35	-7	4,832	36	14,690	110 (N/A)	1.4	1.9	9.18
Apple	490	4	-16	-6	0	506	4	975	7 (N/A)	1.2	0.1	0.73
Sugar maple	4,045	30	-289	-22	-2	3,501	26	7,235	54 (N/A)	1.2	0.9	5.43
Red maple	2,509	19	-100	-10	-1	1,604	12	4,004	30 (N/A)	1.0	0.5	3.34
Ohio buckeye	1,703	13	-126	-11	-1	1,635	12	3,201	24 (N/A)	0.8	0.4	3.43
Amur maple	725	5	-33	-7	0	803	6	1,488	11 (N/A)	0.8	0.2	1.59
Swamp white oak	303	2	-6	-2	0	215	2	510	4 (N/A)	0.7	0.1	0.64
Northern white cedar	577	4	-94	-13	-1	1,123	8	1,593	12 (N/A)	0.6	0.2	2.39
Maple	935	7	-39	-4	0	504	4	1,397	10 (N/A)	0.6	0.2	2.09
River birch	112	1	-2	-1	0	86	1	195	1 (N/A)	0.5	0.0	0.36
Conifer Evergreen Large	462	3	-22	-8	0	866	6	1,298	10 (N/A)	0.5	0.2	2.43
Mulberry	314	2	-48	-6	0	686	5	946	7 (N/A)	0.5	0.1	1.77
Littleleaf linden	1,818	14	-74	-7	-1	1,054	8	2,791	21 (N/A)	0.3	0.4	6.98
White oak	2,365	18	-267	-11	-2	1,693	13	3,780	28 (N/A)	0.3	0.5	9.45
Pin oak	5,882	44	-313	-12	-2	1,866	14	7,423	56 (N/A)	0.3	0.9	18.56
Ash	672	5	-16	-4	0	528	4	1,180	9 (N/A)	0.3	0.1	2.95
Lilac	152	1	-5	-2	0	161	1	306	2 (N/A)	0.2	0.0	1.15
Oak	283	2	-6	-2	0	207	2	483	4 (N/A)	0.2	0.1	1.81
Boxelder	1,733	13	-107	-6	-1	799	6	2,419	18 (N/A)	0.2	0.3	9.07
Norway spruce	36	0	0	-1	0	76	1	110	1 (N/A)	0.2	0.0	0.41
Elm	960	7	-125	-4	-1	650	5	1,481	11 (N/A)	0.1	0.2	11.11
Dogwood	9	0	0	0	0	6	0	14	0 (N/A)	0.1	0.0	0.10
Ginkgo	2	0	0	0	0	4	0	6	0 (N/A)	0.1	0.0	0.04
Austrian pine	147	1	-13	-3	0	233	2	364	3 (N/A)	0.1	0.0	2.73
Basswood	445	3	-18	-2	0	393	3	819	6 (N/A)	0.1	0.1	6.14
American sycamore	912	7	-188	-5	-1	734	6	1,453	11 (N/A)	0.1	0.2	10.90
Cottonwood	960	7	-125	-4	-1	650	5	1,481	11 (N/A)	0.1	0.2	11.11
Citywide total	475,172	3,564	-38,821	-2,214	-308	355,464	2,666	789,602	5,922 (N/A)	100.0	100.0	6.82

Table 6: Annual Social and Aesthetic Benefits

Webster City

Annual Aesthetic/Other Benefits of Public Trees

4/3/2018

Species	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Bur oak	27,235	(N/A)	55.2	61.9	56.86
Northern hackberry	2,071	(N/A)	4.6	4.7	51.78
Green ash	1,295	(N/A)	3.6	2.9	41.79
Northern red oak	259	(N/A)	3.5	0.6	8.62
Silver maple	2,215	(N/A)	3.2	5.0	79.12
Honeylocust	3,514	(N/A)	3.0	8.0	135.16
Black walnut	1,225	(N/A)	2.6	2.8	53.28
Eastern red cedar	213	(N/A)	2.1	0.5	11.85
Black spruce	366	(N/A)	1.7	0.8	24.40
Willow	412	(N/A)	1.6	0.9	29.41
Black maple	502	(N/A)	1.6	1.1	35.87
Quaking aspen	74	(N/A)	1.6	0.2	5.26
Hickory	648	(N/A)	1.5	1.5	49.84
Norway maple	436	(N/A)	1.5	1.0	33.57
American basswood	742	(N/A)	1.4	1.7	61.85
Apple	26	(N/A)	1.2	0.1	2.55
Sugar maple	459	(N/A)	1.2	1.0	45.88
Red maple	314	(N/A)	1.0	0.7	34.90
Ohio buckeye	179	(N/A)	0.8	0.4	25.56
Amur maple	41	(N/A)	0.8	0.1	5.89
Swamp white oak	47	(N/A)	0.7	0.1	7.81
Northern white cedar	112	(N/A)	0.6	0.3	22.50
Maple	109	(N/A)	0.6	0.2	21.84
River birch	21	(N/A)	0.5	0.0	5.27
Conifer Evergreen Large	129	(N/A)	0.5	0.3	32.32
Mulberry	18	(N/A)	0.5	0.0	4.39
Littleleaf linden	192	(N/A)	0.3	0.4	63.89
White oak	179	(N/A)	0.3	0.4	59.68
Pin oak	430	(N/A)	0.3	1.0	143.47
Ash	79	(N/A)	0.3	0.2	26.22
Lilac	8	(N/A)	0.2	0.0	4.23
Oak	43	(N/A)	0.2	0.1	21.64
Boxelder	117	(N/A)	0.2	0.3	58.53
Norway spruce	14	(N/A)	0.2	0.0	6.83
Elm	67	(N/A)	0.1	0.2	66.60
Dogwood	0	(N/A)	0.1	0.0	0.03
Ginkgo	0	(N/A)	0.1	0.0	0.37
Austrian pine	20	(N/A)	0.1	0.0	19.97
Basswood	46	(N/A)	0.1	0.1	45.86
American sycamore	58	(N/A)	0.1	0.1	58.34
Cottonwood	67	(N/A)	0.1	0.2	66.60
Citywide total	43,984	(N/A)	100.0	100.0	50.67

Table 7: Summary of Benefits in Dollars

Webster City

Total Annual Benefits of Public Trees by Species ($)

4/3/2018

Species	Energy	CO_2	Air Quality	Stormwater	Aesthetic/Other	Total ($)	Standard Error	% of Total $
Bur oak	28,641	3,958	4,962	38,958	27,235	103,754	(N/A)	63.7
Northern hackberry	2,641	259	469	3,167	2,071	8,607	(N/A)	5.3
Green ash	1,248	169	212	1,588	1,295	4,513	(N/A)	2.8
Northern red oak	1,166	84	162	1,642	259	3,312	(N/A)	2.0
Silver maple	1,498	274	264	2,444	2,215	6,696	(N/A)	4.1
Honeylocust	1,354	183	231	2,102	3,514	7,384	(N/A)	4.5
Black walnut	1,280	177	223	1,775	1,225	4,681	(N/A)	2.9
Eastern red cedar	319	21	27	561	213	1,141	(N/A)	0.7
Black spruce	339	30	39	564	366	1,337	(N/A)	0.8
Willow	823	75	151	1,070	412	2,530	(N/A)	1.6
Black maple	838	77	159	1,054	502	2,629	(N/A)	1.6
Quaking aspen	9	1	1	7	74	91	(N/A)	0.1
Hickory	669	92	117	921	648	2,446	(N/A)	1.5
Norway maple	521	61	86	485	436	1,590	(N/A)	1.0
American basswood	617	110	98	966	742	2,534	(N/A)	1.6
Apple	74	7	10	28	26	145	(N/A)	0.1
Sugar maple	441	54	67	508	459	1,529	(N/A)	0.9
Red maple	200	30	36	217	314	798	(N/A)	0.5
Ohio buckeye	221	24	37	226	179	686	(N/A)	0.4
Amur maple	103	11	17	45	41	218	(N/A)	0.1
Swamp white oak	30	4	4	14	47	99	(N/A)	0.1
Northern white cedar	137	12	2	377	112	640	(N/A)	0.4
Maple	65	10	12	79	109	276	(N/A)	0.2
River birch	12	1	2	5	21	42	(N/A)	0.0
Conifer Evergreen Large	97	10	11	167	129	414	(N/A)	0.3
Mulberry	91	7	16	52	18	183	(N/A)	0.1
Littleleaf linden	128	21	21	132	192	494	(N/A)	0.3
White oak	208	28	39	337	179	792	(N/A)	0.5
Pin oak	231	56	29	365	430	1,112	(N/A)	0.7
Ash	73	9	10	48	79	219	(N/A)	0.1
Lilac	24	2	3	9	8	47	(N/A)	0.0
Oak	26	4	4	21	43	98	(N/A)	0.1
Boxelder	102	18	17	144	117	398	(N/A)	0.2
Norway spruce	11	1	1	12	14	38	(N/A)	0.0
Elm	82	11	16	149	67	324	(N/A)	0.2
Dogwood	1	0	0	0	0	1	(N/A)	0.0
Ginkgo	1	0	0	0	0	1	(N/A)	0.0
Austrian pine	30	3	3	63	20	118	(N/A)	0.1
Basswood	44	6	7	40	46	143	(N/A)	0.1
American sycamore	91	11	19	196	58	375	(N/A)	0.2
Cottonwood	82	11	16	149	67	324	(N/A)	0.2
Citywide Total	44,566	5,922	7,601	60,687	43,984	162,760	(N/A)	100.0

Legend:
- Bur oak — 55.12
- Northern hackberry — 4.60
- Green ash — 3.57
- Northern red oak — 3.45
- Silver maple — 3.22
- Honeylocust — 2.99
- Black walnut — 2.76
- Eastern red cedar — 2.07
- Black spruce — 1.73
- Willow — 1.61
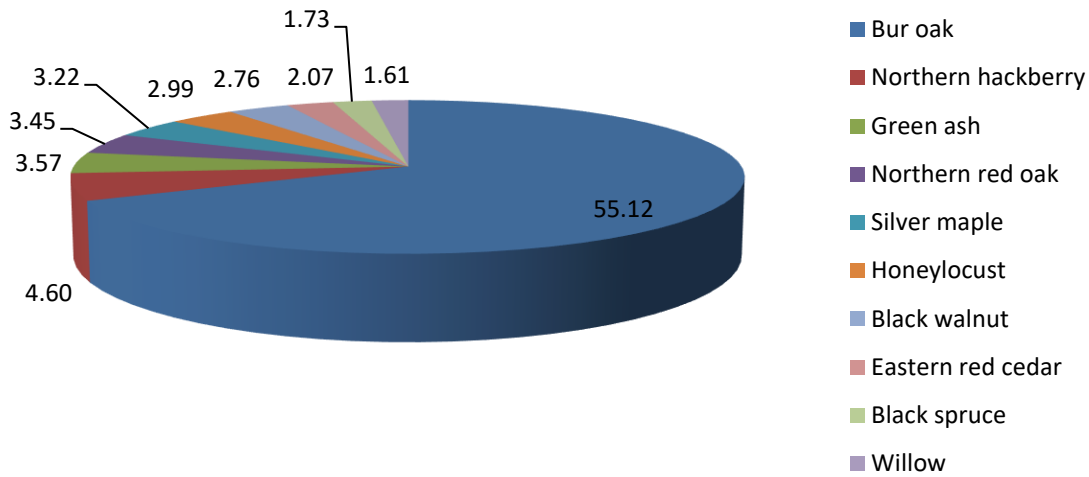
Figure 1: Species Distribution

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

DBH Class

Legend:
- Bur oak
- Northern hackberry
- Green ash
- Northern red oak
- Silver maple
- Honeylocust
- Black walnut
- Eastern red cedar
- Black spruce
- Willow
- Citywide Total
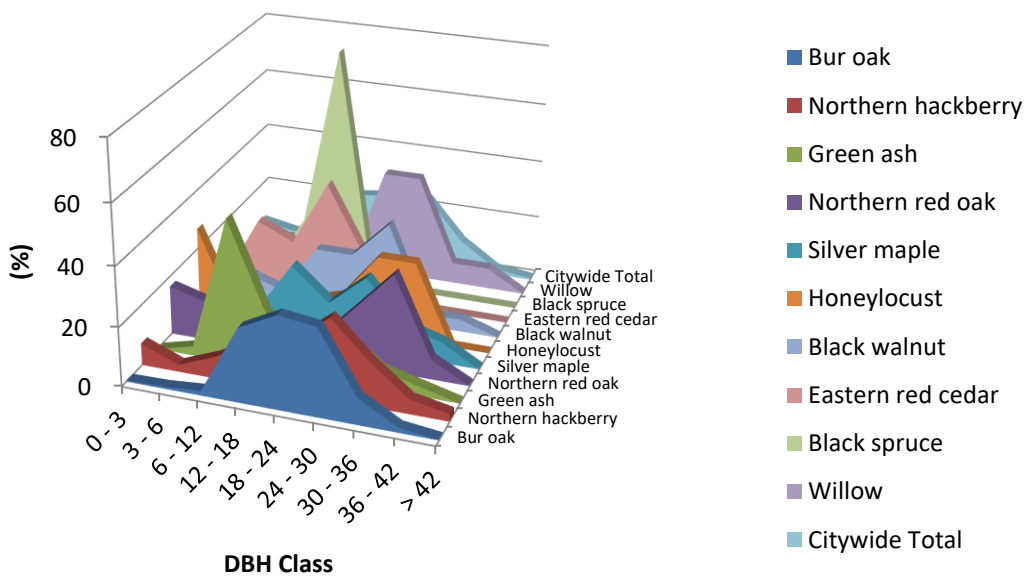
Figure 2: Relative Age Class
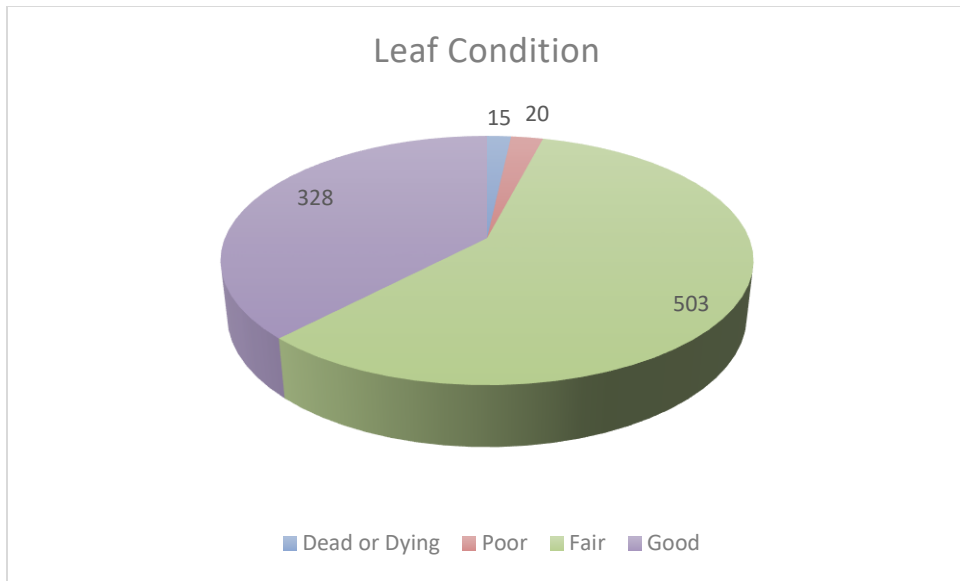
Figure 3: Foliage Condition
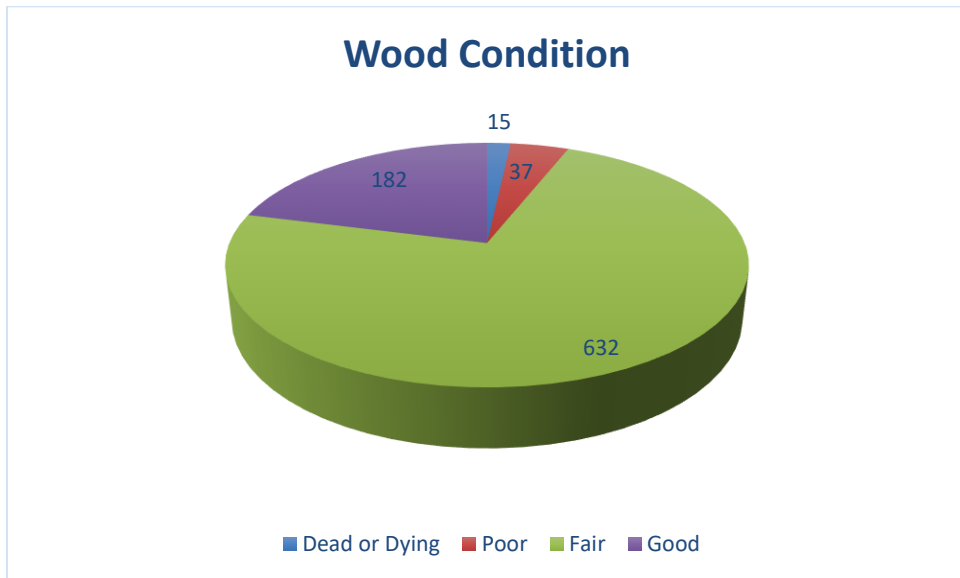
Figure 4: Wood Condition

Canopy Cover of Public Trees (Acres)
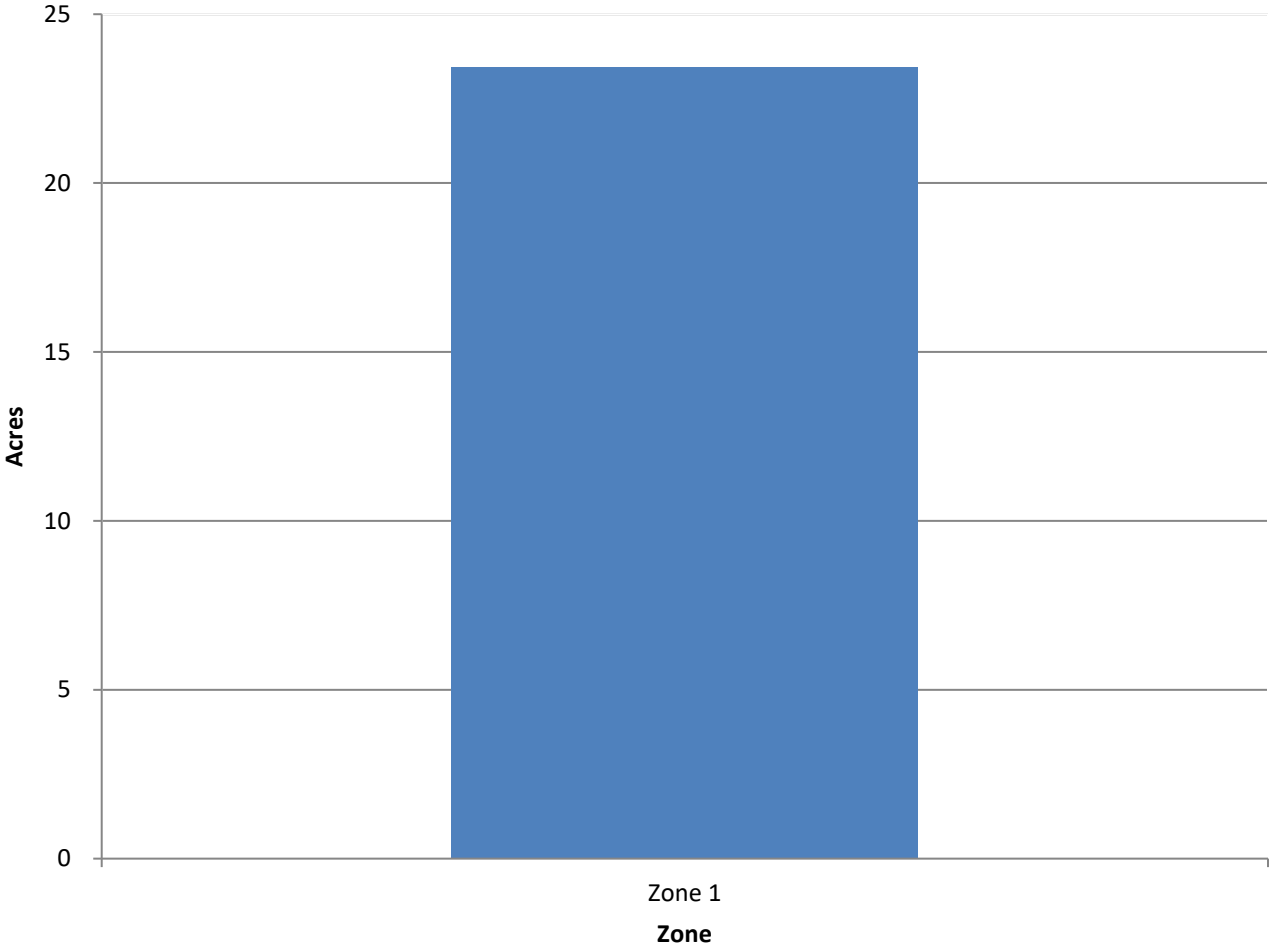
Figure 5: Canopy Cover in Acres
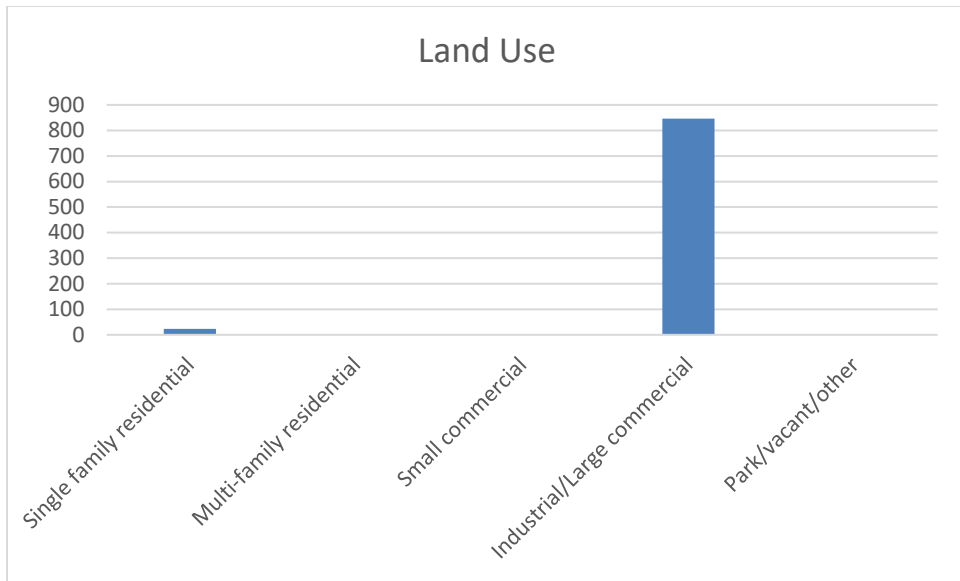
Figure 6: Land Use of city/park trees
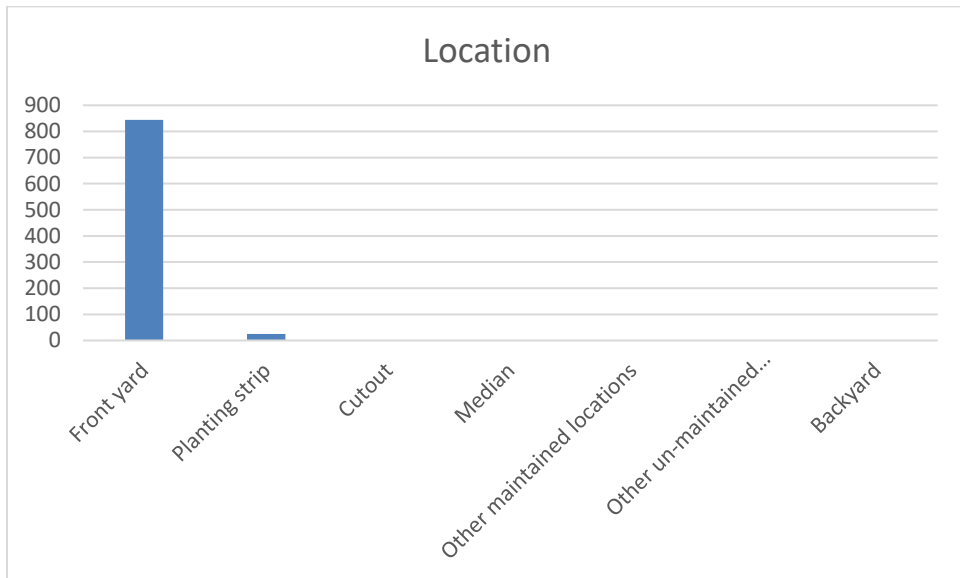
Figure 7: Location of city/park trees
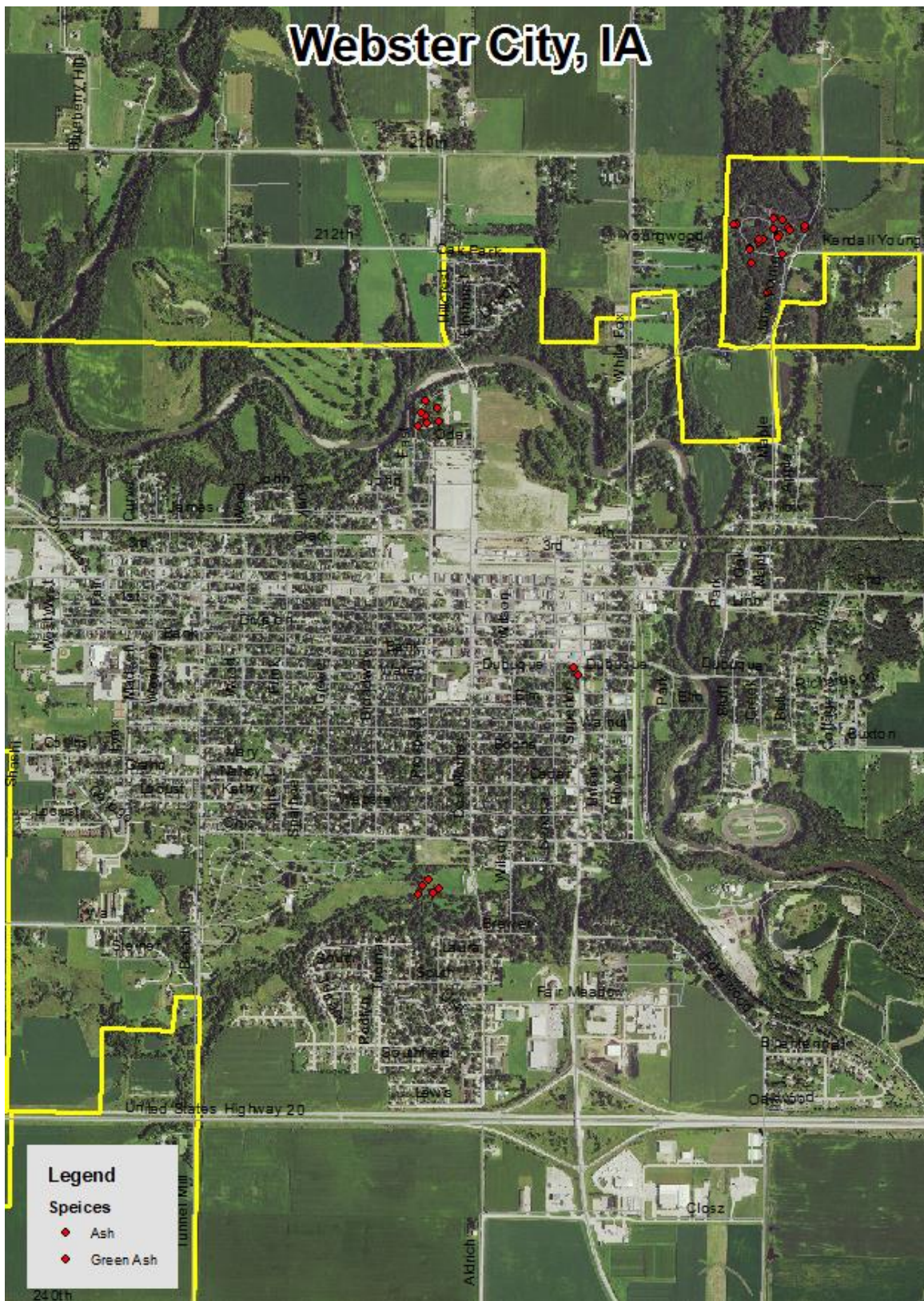
Figure 1: Location of Ash Trees
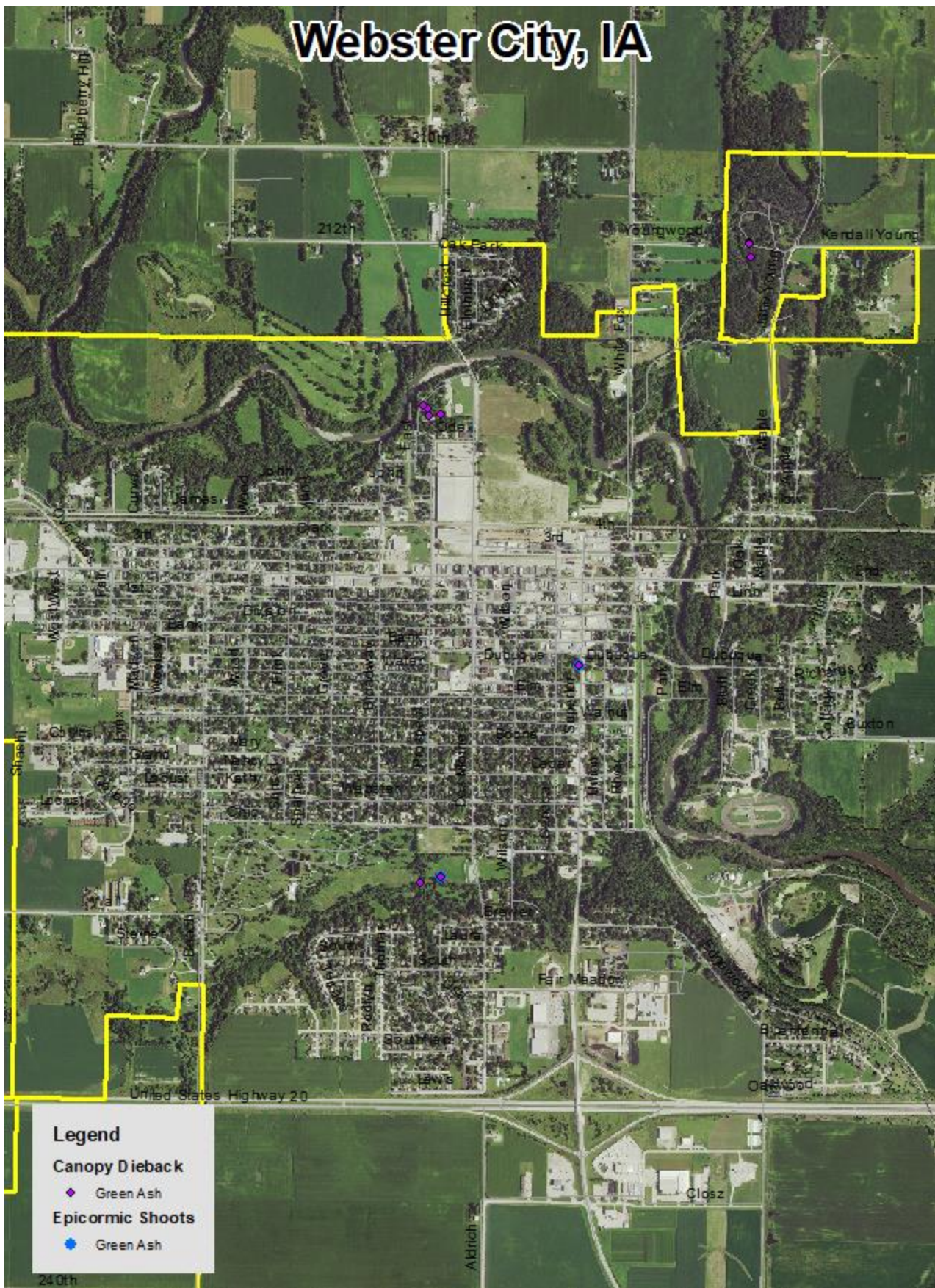
Figure 2: Location of EAB symptoms
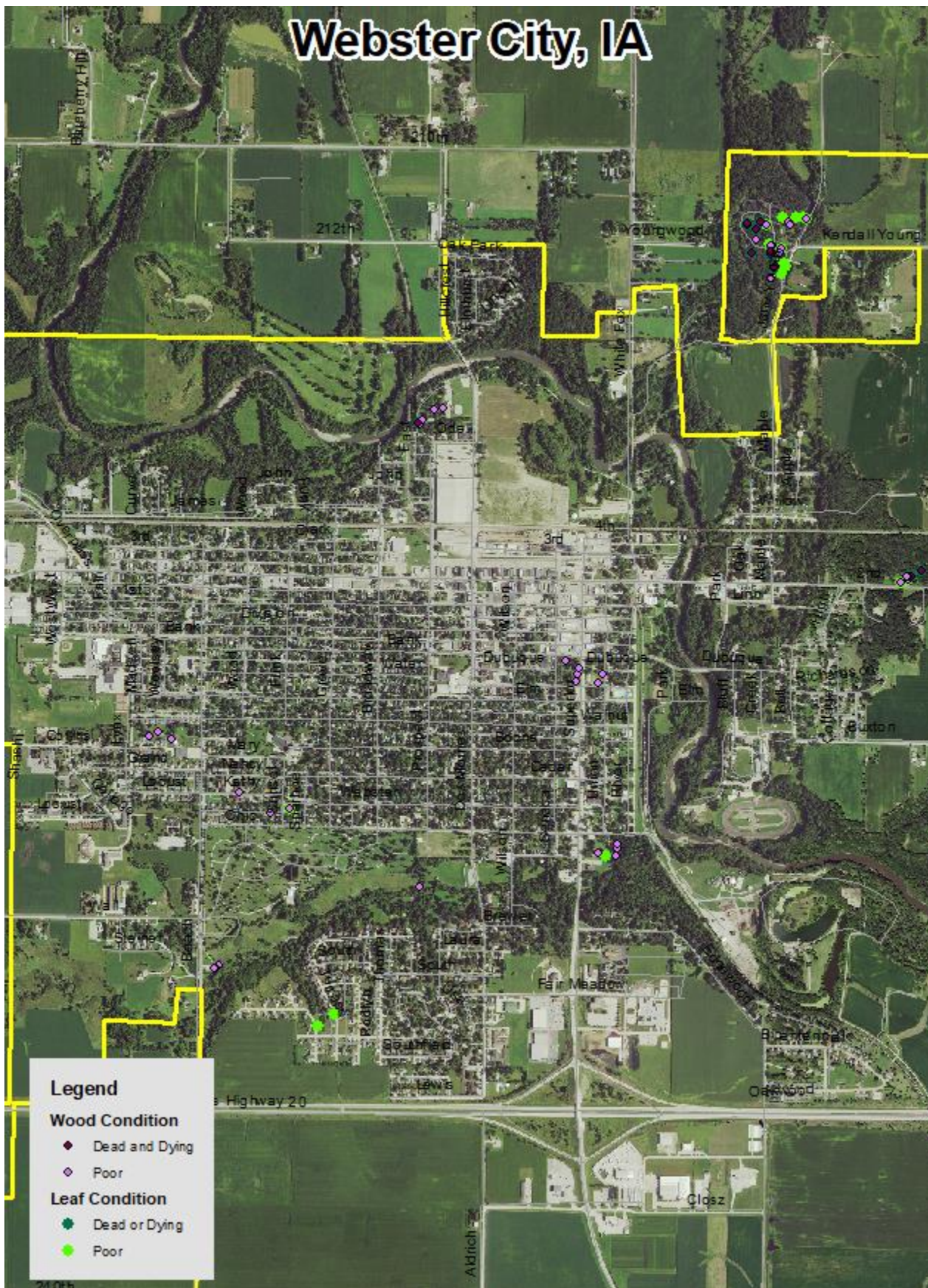
Figure 3: Location of Poor Condition Trees
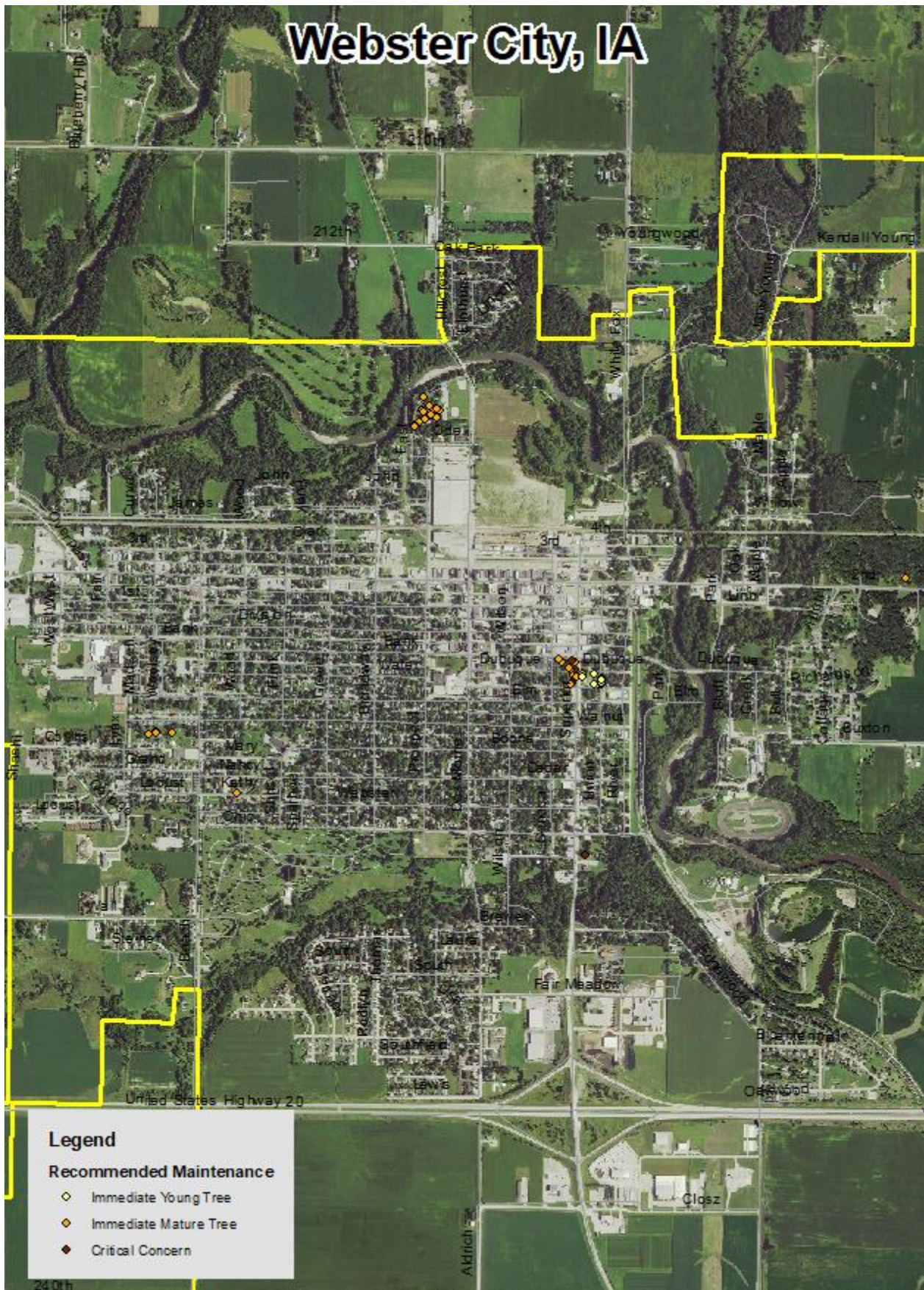
Figure 4: Location of Trees with Recommended Maintenance
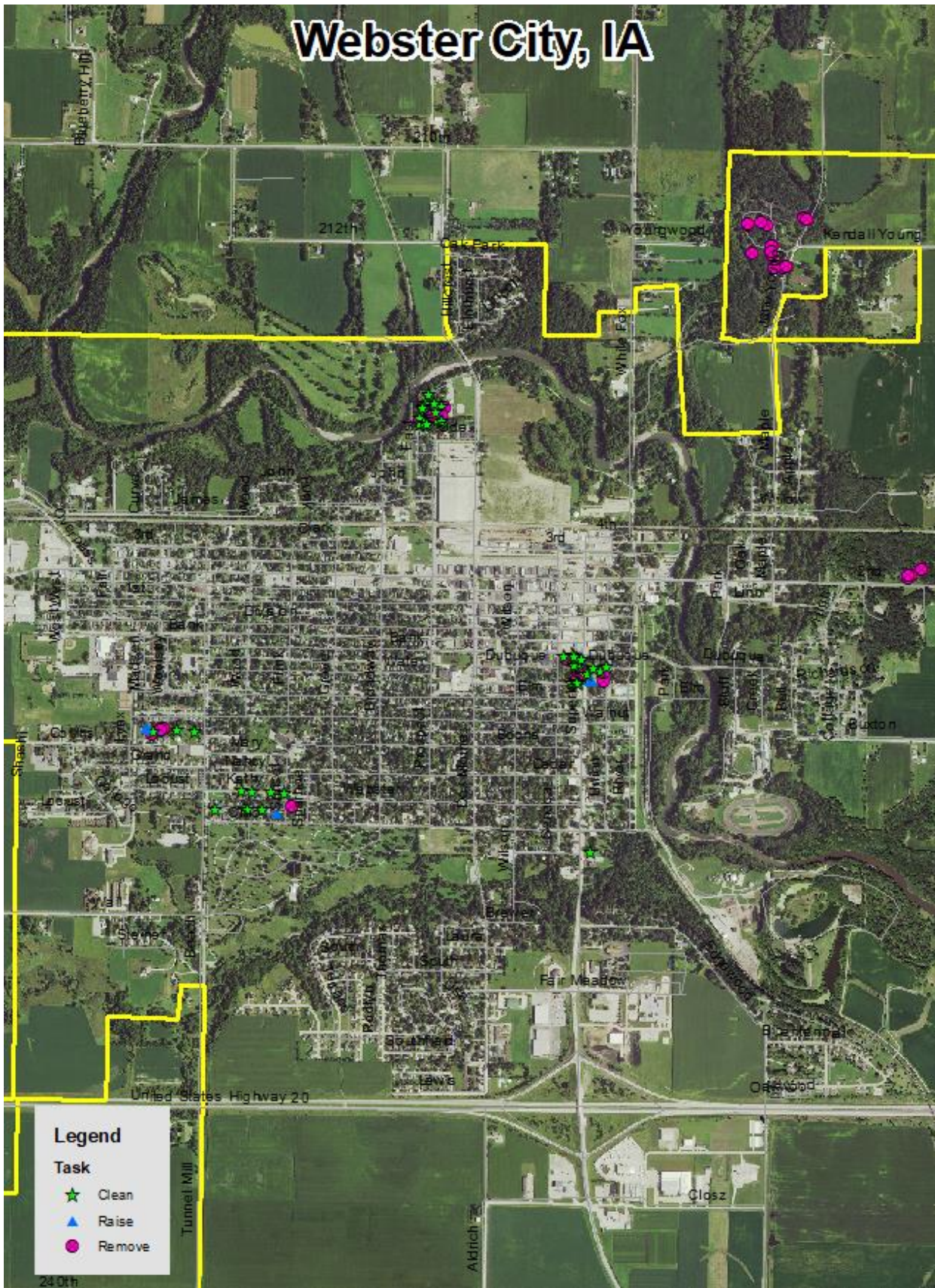
Figure 5: Maintenance Tasks *City ownership of the trees recommended for removal should be verified prior to any removal*

Appendix C: Webster City Tree Ordinances

WEBSTER CITY, IOWA

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CHAPTER 142

TITLE V – BUILDING AND PROPERTY REGULATIONS

CHAPTER 142
TREES AND SHRUBBERY

142.01 Purpose
142.02 Dangerous Trees Defined
142.03 City Forester
142.04 Duties of City Forester
142.05 Duties of Private Owners
142.06 Removal of Dangerous and Infected Trees

142.07 Removal by City
142.08 Multiple Owners
142.09 Shrubbery
142.10 Obstruction of Enforcement
142.11 Abuse or Mutilation of Trees
142.12 Continuing Violation

142.01 **PURPOSE.** The purpose of this chapter is to beautify and preserve trees and shrubs for the appearance of the City and to provide for the abatement of diseased and dangerous trees to promote public safety.

142.02 **DANGEROUS TREES DEFINED.** All trees which, by reason of their size, age, condition, disease or location, may endanger public life or safety, or the safety of property, are hereby declared to be dangerous trees and are also declared to be a nuisance which should be removed and abated. If there is a danger that all or a substantial portion of such tree or trees might fall on any public alley, street or other public property or any private property, such condition is also hereby declared to be sufficient evidence that such tree or trees constitute a nuisance.

142.03 **CITY FORESTER.** The City Manager shall designate a person to act as City Forester and such person shall have jurisdiction over all trees and other plantings on the streets within the City in order to provide orderly tree planting, to protect the health of all trees from disease, and to require trees and plantings to be maintained in a manner not dangerous to public safety.

142.04 **DUTIES OF CITY FORESTER.** The City Forester shall have the following authorities and duties:

1. Prevent the indiscriminate trimming or removal of trees or plants within streets.

2. Regulate new planting of trees or other plantings in streets in accordance with street tree planting regulations approved by the Council and on file in the office of the Clerk.

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142.06   REMOVAL OF DANGEROUS AND INFECTED TREES.   The owner, occupant or person in charge of any property shall remove at his or her own expense any tree, brush, wood or debris infected with Dutch Elm Disease or other crippling disease or in dangerous condition found thereon when so notified by the City Forester. The notice shall state that said owner may appear before the Council at an appointed time not less than fourteen (14) days from the date of mailing to show cause why said tree, brush, wood or debris should not be declared a public nuisance.   At said meeting the Council may resolve and declare the same to be a public nuisance and may order its removal by said owner.
(Code of Iowa, Sec. 364.12 [3b])

142.07   REMOVAL BY CITY.   In the event said owner fails to comply with the resolution and order of the Council to so remove said public nuisance, the City Forester shall cause said public nuisance to be removed and shall submit the costs incident to said service and removal to the Council, which shall certify the same to the County Treasurer for collection with and in the same manner as general property taxes.
(Code of Iowa, Sec. 364.12 [2d & 2e])

142.08   MULTIPLE OWNERS.   If such tree, brush, wood or debris is growing upon the property of two (2) different owners, and/or two (2) different occupants, notices shall be served upon both and the expense of removal shall be divided equally between them.

142.09   SHRUBBERY.   All shrubbery, bushes and other growth within the confines of the area between the outer line of the sidewalk and the curb, or if there be no curb, the surfaced portion of the street, shall be kept trimmed and pruned by the owner of the premises abutting so as not to impede or interfere with traffic or travel on the streets or sidewalks.

142.10   OBSTRUCTION OF ENFORCEMENT.   It shall be unlawful for any person to hinder, obstruct or otherwise interfere with the agents or employees of the city while engaged in carrying out the provision of Section 142.06 through 142.08 upon order of the Council made thereunder.

142.11   ABUSE OR MUTILATION OF TREES.   No person shall willfully damage, cut, carve, pick the seeds of, or injure the bark of any tree or plant on the streets or public places of the City.   Tree trimming shall be done in accordance with good practice and the regulations of the City.

142.12   CONTINUING VIOLATION.   Each day that any condition prohibited herein is maintained shall be considered a separate offense and may be punished accordingly.

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