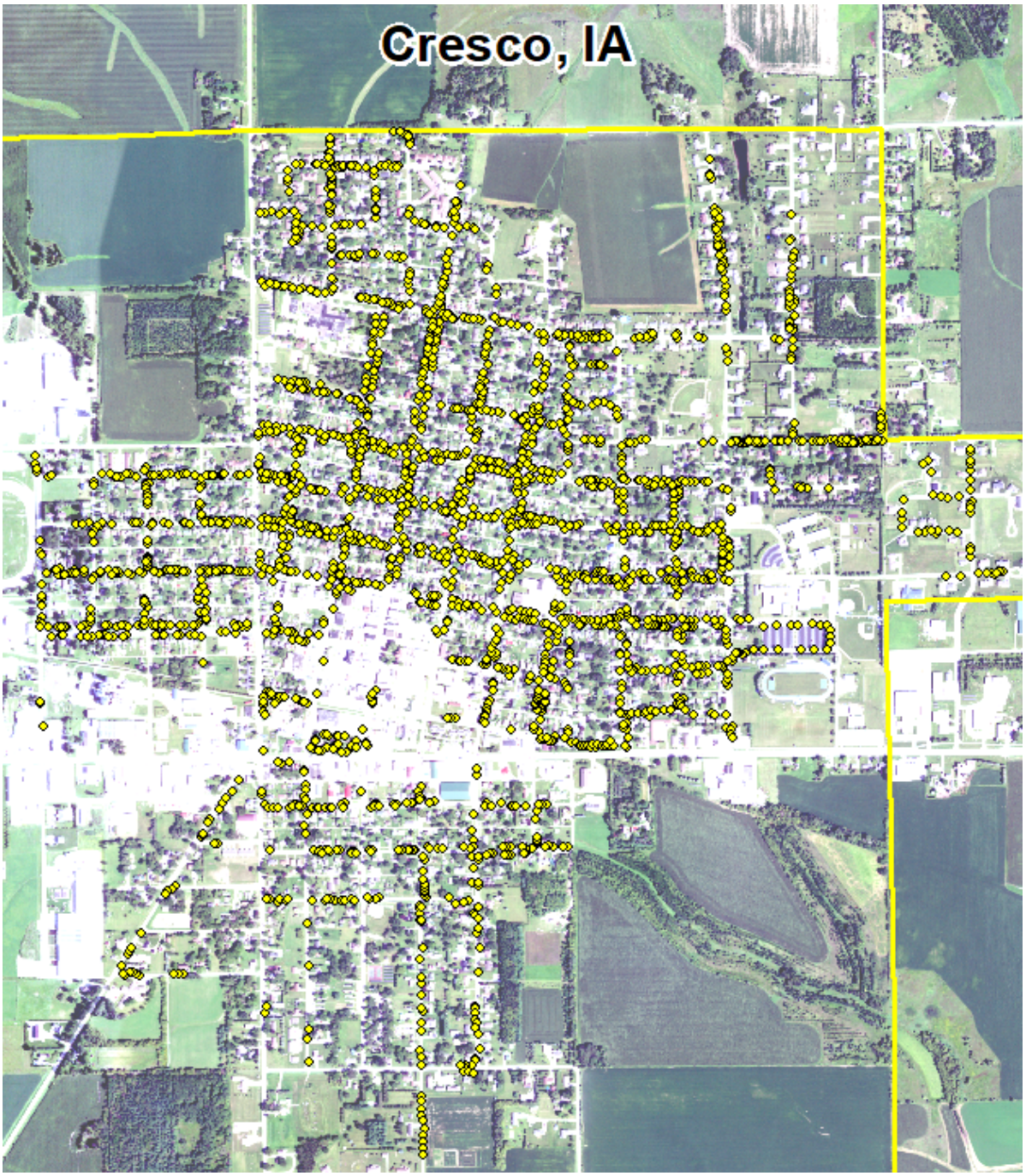
Cresco, IA



2023 Urban Forest Management Plan
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Executive Summary

Overview

This plan was developed to assist the City of Cresco 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 3% of Cresco'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 2022, a tree inventory was conducted 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 2,331 trees inventoried.

- Cresco's trees provide $271,957 of benefits annually, an average of $117 a tree
- There are over 44 species of trees
- The top three genera are: Maple 53%, Apple 7% and Basswood 6%
- 47 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.

- All ash trees should be carefully examined, as they may 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 Cresco 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 recovery from 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 Cresco, these costs can be extended over years and public safety issues from dead and dying ash trees mitigated.

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

Inventory

In 2022, a tree inventory was conducted 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 2,331 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. Cresco's trees reduce energy related costs by approximately $83,503 annually (Appendix A, Table 1). These savings are both in Electricity (394.9 MWh) and in Natural Gas (54,624.5 Therms).

Annual Stormwater Benefits

Cresco's trees intercept about 3,333,014 gallons of rainfall or snow melt a year (Appendix A, Table 2). This interception provides $90,325 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 Cresco, it is estimated that trees remove 5,078 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 $14,304 (Appendix A, Table 3).

Annual Carbon Benefits

Carbon sequestration and storage reduce the amount of carbon in the atmosphere, mitigating climate change. In Cresco, trees sequester about 587,252 lbs of carbon a year with an associated value of $9,032 (Appendix A, Table 5). In addition, the trees store 8,604,672 lbs of carbon, with a yearly benefit of $64,535 (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. Cresco receives $74,793 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, Cresco's trees provide $271,957 of benefits annually. Benefits of individual trees vary based on size, species, health and location, but on average each of the 2,331 trees in Cresco provide approximately $117 annually (Appendix A, Table 7).

Forest Structure

Species Distribution

Cresco has over 44 different tree species along city streets and parks (Appendix A, Figure 1).
The distribution of trees by genera is as follows:

Maple	1,238	53%
Apple	181	8%

Basswood	146	6%
Hackberry	133	6%
Oak	90	4%
Elm	71	3%
Ash	67	3%
Broadleaf Dec Med	60	3%
Northern White Cedar	49	2%
Spruce	45	2%
Other Species	251	11%

Age Class

Most of Cresco's trees (47%) are between 6 and 18 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. Cresco's size curve is on the smaller side, indicating a younger than average 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 Cresco indicate that 96% 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). Similarly, 90% of Cresco'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 5% of the population.

Canopy Cover

The total canopy with both private and public trees is 40.88 acres.

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

Cresco has 2 critical concern trees 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 13 trees over 24 inches in diameter at 4.5 ft that should be addressed immediately.

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 47 removals, 9 are ash trees. *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 Cresco.

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 maple (53%) (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 section 151.02 of the city ordinance (Appendix C). All trees planted must meet the restrictions in city ordinance 151.02 (Appendix C).

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.

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 151.02 (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 if preventative treatments are not being used. City Code 151.06 states "If it is determined with reasonable certainty that any such condition exists (trees or shrubs in the City reported or suspected to be infected with or damaged by any disease or insect or disease pests) on private property and that the danger to other trees or to adjoining property or passing motorists or pedestrians is imminent, the Council shall notify by certified mail the owner, occupant or person in charge of such property to correct such condition by treatment or removal within fourteen (14) days of said notification. If such owner, occupant or person in charge of said property fails to comply within 14 days of receipt of notice, the Council may cause the condition to be corrected and the cost assessed against the property."

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Appendix A: i-Tree Data

Table 1: Annual Energy Benefits

Cresco

Annual Energy Benefits of Public Trees

2/1/2023

Species	Total Electricity (MWh)	Electricity ($)	Total Natural Gas (Therms)	Natural Gas ($)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Maple	281.6	21,376	38,165.0	37,402	58,778	(N/A)	53.1	70.4	47.48
Apple	9.4	714	1,596.5	1,565	2,278	(N/A)	7.8	2.7	12.59
American basswood	17.2	1,306	2,506.7	2,457	3,762	(N/A)	6.3	4.5	25.77
Northern hackberry	16.3	1,238	2,421.7	2,373	3,612	(N/A)	5.7	4.3	27.16
Oak	9.4	711	1,290.4	1,265	1,976	(N/A)	3.9	2.4	21.95
Elm	5.4	413	735.0	720	1,133	(N/A)	3.0	1.4	15.96
Ash	15.3	1,158	2,196.8	2,153	3,310	(N/A)	2.9	4.0	49.41
Broadleaf Deciduous Mediu	3.5	262	548.4	537	800	(N/A)	2.6	1.0	13.33
Northern white cedar	4.0	302	578.0	566	868	(N/A)	2.1	1.0	17.72
Spruce	4.6	351	627.2	615	966	(N/A)	1.9	1.2	21.47
American elm	3.3	248	423.5	415	663	(N/A)	1.8	0.8	15.42
Amur maple	2.9	217	487.5	478	695	(N/A)	1.8	0.8	16.54
Eastern white pine	3.6	274	489.0	479	753	(N/A)	1.2	0.9	27.90
American sycamore	0.9	65	115.5	113	178	(N/A)	0.9	0.2	8.48
Eastern hophornbeam	0.4	27	62.1	61	88	(N/A)	0.8	0.1	4.64
Black walnut	3.8	286	496.4	486	773	(N/A)	0.6	0.9	55.20
Birch	2.2	170	307.0	301	471	(N/A)	0.6	0.6	36.21
Boxelder	1.9	142	258.5	253	395	(N/A)	0.3	0.5	49.42
Japanese tree lilac	0.5	39	89.8	88	127	(N/A)	0.3	0.2	18.19
Kentucky coffeetree	0.6	43	82.4	81	124	(N/A)	0.3	0.1	20.64
Honeylocust	1.4	107	182.9	179	286	(N/A)	0.3	0.3	47.67
Cottonwood	0.9	69	128.6	126	195	(N/A)	0.3	0.2	32.46
Eastern redbud	0.0	4	8.2	8	12	(N/A)	0.1	0.0	3.89
Conifer Evergreen Small	0.1	11	23.8	23	34	(N/A)	0.1	0.0	11.47
Ohio buckeye	0.9	67	124.3	122	188	(N/A)	0.1	0.2	62.82
Broadleaf Deciduous Large	0.9	70	131.8	129	199	(N/A)	0.1	0.2	66.38
Black cherry	0.3	20	37.5	37	56	(N/A)	0.1	0.1	28.16
Pear	0.1	11	25.7	25	36	(N/A)	0.1	0.0	18.19
Ginkgo	0.3	23	41.9	41	64	(N/A)	0.1	0.1	32.00
Northern red oak	0.4	31	53.9	53	84	(N/A)	0.1	0.1	42.00
Catalpa	0.5	38	65.1	64	102	(N/A)	0.1	0.1	50.77
Willow	0.0	1	1.6	2	2	(N/A)	0.1	0.0	1.10
Mountain ash	0.1	11	25.7	25	36	(N/A)	0.1	0.0	18.19
Mulberry	0.2	16	28.5	28	44	(N/A)	0.1	0.1	21.77
Eastern cottonwood	0.9	66	118.0	116	182	(N/A)	0.1	0.2	91.02
Littleleaf linden	0.1	6	12.5	12	18	(N/A)	0.0	0.0	18.25
Basswood	0.1	7	13.7	13	21	(N/A)	0.0	0.0	20.64
Black locust	0.2	18	29.5	29	47	(N/A)	0.0	0.1	46.78
Callery pear	0.1	8	16.9	17	24	(N/A)	0.0	0.0	24.47
Conifer Evergreen Medium	0.0	2	4.9	5	7	(N/A)	0.0	0.0	6.94
Broadleaf Deciduous Small	0.1	6	12.8	13	18	(N/A)	0.0	0.0	18.19
Southern magnolia	0.0	3	5.6	5	8	(N/A)	0.0	0.0	8.11
Hickory	0.2	18	27.0	26	44	(N/A)	0.0	0.1	44.23
Quaking aspen	0.2	18	27.0	26	44	(N/A)	0.0	0.1	44.23
Total	394.9	29,971	54,624.5	53,532	83,503	(N/A)	100.0	100.0	35.82

Table 2: Annual Stormwater Benefits

Cresco

Annual Stormwater Benefits of Public Trees

2/1/2023

Species	Total rainfall interception (Gal)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Maple	2,406,723	65,222	(N/A)	53.1	72.2	52.68
Apple	33,365	904	(N/A)	7.8	1.0	5.00
American basswood	121,512	3,293	(N/A)	6.3	3.6	22.55
Northern hackberry	109,847	2,977	(N/A)	5.7	3.3	22.38
Oak	83,010	2,250	(N/A)	3.9	2.5	25.00
Elm	37,099	1,005	(N/A)	3.0	1.1	14.16
Ash	130,876	3,547	(N/A)	2.9	3.9	52.94
Broadleaf Deciduous Medium	17,941	486	(N/A)	2.6	0.5	8.10
Northern white cedar	53,341	1,446	(N/A)	2.1	1.6	29.50
Spruce	74,381	2,016	(N/A)	1.9	2.2	44.79
American elm	21,390	580	(N/A)	1.8	0.6	13.48
Amur maple	10,140	275	(N/A)	1.8	0.3	6.54
Eastern white pine	74,877	2,029	(N/A)	1.2	2.2	75.15
American sycamore	6,152	167	(N/A)	0.9	0.2	7.94
Eastern hophornbeam	1,133	31	(N/A)	0.8	0.0	1.62
Black walnut	37,789	1,024	(N/A)	0.6	1.1	73.15
Birch	14,026	380	(N/A)	0.6	0.4	29.24
Boxelder	20,756	562	(N/A)	0.3	0.6	70.31
Japanese tree lilac	1,851	50	(N/A)	0.3	0.1	7.17
Kentucky coffeetree	3,647	99	(N/A)	0.3	0.1	16.47
Honeylocust	8,830	239	(N/A)	0.3	0.3	39.88
Cottonwood	9,445	256	(N/A)	0.3	0.3	42.66
Eastern redbud	145	4	(N/A)	0.1	0.0	1.31
Conifer Evergreen Small	1,978	54	(N/A)	0.1	0.1	17.86
Ohio buckeye	8,938	242	(N/A)	0.1	0.3	80.74
Broadleaf Deciduous Large	10,477	284	(N/A)	0.1	0.3	94.64
Black cherry	931	25	(N/A)	0.1	0.0	12.62
Pear	529	14	(N/A)	0.1	0.0	7.17
Ginkgo	2,159	59	(N/A)	0.1	0.1	29.25
Northern red oak	3,232	88	(N/A)	0.1	0.1	43.80
Catalpa	4,056	110	(N/A)	0.1	0.1	54.96
Willow	24	1	(N/A)	0.1	0.0	0.33
Mountain ash	529	14	(N/A)	0.1	0.0	7.17
Mulberry	735	20	(N/A)	0.1	0.0	9.96
Eastern cottonwood	14,478	392	(N/A)	0.1	0.4	196.17
Littleleaf linden	461	12	(N/A)	0.0	0.0	12.48
Basswood	608	16	(N/A)	0.0	0.0	16.47
Black locust	1,409	38	(N/A)	0.0	0.0	38.19
Callery pear	586	16	(N/A)	0.0	0.0	15.88
Conifer Evergreen Medium	256	7	(N/A)	0.0	0.0	6.95
Broadleaf Deciduous Small	264	7	(N/A)	0.0	0.0	7.17
Southern magnolia	155	4	(N/A)	0.0	0.0	4.21
Hickory	1,466	40	(N/A)	0.0	0.0	39.72
Quaking aspen	1,466	40	(N/A)	0.0	0.0	39.72
Citywide total	3,333,014	90,325	(N/A)	100.0	100.0	38.75

Table 3: Annual Air Quality Benefits

Cresco

Annual Air Quality Benefits of Public Trees

2/1/2023

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							
Maple	574.6	97.9	268.5	25.5	3,061	1,339.4	195.4	186.3	1,275.7	8,355	-193.2	-725	3,770.1	10,692 (N/A)	53.1	8.64
Apple	5.8	1.0	3.4	0.3	33	47.6	6.7	6.4	42.6	290	0.0	0	113.7	322 (N/A)	7.8	1.78
American basswood	11.2	1.9	6.6	0.5	64	83.7	12.1	11.5	78.1	518	-11.3	-42	194.2	539 (N/A)	6.3	3.69
Northern hackberry	11.9	2.1	7.1	0.5	68	79.7	11.5	10.9	74.0	492	0.0	0	197.7	560 (N/A)	5.7	4.21
Oak	7.9	1.3	4.2	0.4	43	44.8	6.5	6.2	42.4	279	0.0	0	113.6	322 (N/A)	3.9	3.58
Elm	2.2	0.3	1.5	0.1	13	25.8	3.8	3.6	24.6	161	0.0	0	61.9	174 (N/A)	3.0	2.45
Ash	25.2	4.3	12.6	1.1	137	73.9	10.7	10.2	69.2	458	-6.0	-23	201.1	572 (N/A)	2.9	8.54
Broadleaf Deciduous Medium	1.6	0.3	1.1	0.1	9	17.2	2.5	2.3	15.7	105	-0.6	-2	40.1	113 (N/A)	2.6	1.88
Northern white cedar	5.5	1.1	5.0	0.7	38	19.2	2.8	2.6	18.0	119	-19.7	-74	35.2	83 (N/A)	2.1	1.69
Spruce	8.3	1.6	7.0	1.0	55	22.0	3.2	3.1	21.0	137	-32.8	-123	34.4	69 (N/A)	1.9	1.54
American elm	1.3	0.2	0.9	0.1	8	15.4	2.3	2.2	14.8	96	0.0	0	37.1	104 (N/A)	1.8	2.42
Amur maple	1.8	0.3	1.0	0.1	10	14.5	2.0	1.9	12.9	88	0.0	0	34.6	98 (N/A)	1.8	2.34
Eastern white pine	8.9	1.8	7.2	1.1	58	17.2	2.5	2.4	16.4	107	-41.4	-155	16.0	10 (N/A)	1.2	0.38
American sycamore	0.3	0.1	0.2	0.0	2	4.1	0.6	0.6	3.9	25	0.0	0	9.7	27 (N/A)	0.9	1.30
Eastern hophornbeam	0.1	0.0	0.1	0.0	1	1.8	0.3	0.2	1.6	11	0.0	0	4.2	12 (N/A)	0.8	0.62
Black walnut	4.4	0.7	2.2	0.2	24	17.8	2.6	2.5	17.1	112	0.0	0	47.5	135 (N/A)	0.6	9.66
Birch	2.1	0.4	1.1	0.1	12	10.7	1.6	1.5	10.2	67	-0.6	-2	27.0	76 (N/A)	0.6	5.86
Boxelder	2.8	0.4	1.3	0.1	15	8.9	1.3	1.2	8.5	56	-1.0	-4	23.5	66 (N/A)	0.3	8.30
Japanese tree lilac	0.3	0.1	0.2	0.0	2	2.6	0.4	0.4	2.3	16	0.0	0	6.3	18 (N/A)	0.3	2.55
Kentucky coffeetree	0.1	0.0	0.1	0.0	1	2.7	0.4	0.4	2.6	17	0.0	0	6.4	18 (N/A)	0.3	2.99
Honeylocust	1.5	0.2	0.7	0.1	8	6.6	1.0	0.9	6.4	41	-0.9	-3	16.5	46 (N/A)	0.3	7.65
Cottonwood	1.0	0.2	0.5	0.0	6	4.4	0.6	0.6	4.1	27	0.0	0	11.5	33 (N/A)	0.3	5.45
Eastern redbud	0.0	0.0	0.0	0.0	0	0.2	0.0	0.0	0.2	1	0.0	0	0.5	2 (N/A)	0.1	0.51
Conifer Evergreen Small	0.2	0.0	0.2	0.0	1	0.7	0.1	0.1	0.7	4	-1.0	-4	1.0	2 (N/A)	0.1	0.62
Ohio buckeye	1.9	0.3	0.9	0.1	10	4.2	0.6	0.6	4.0	26	-0.4	-2	12.3	35 (N/A)	0.1	11.69
Broadleaf Deciduous Large	1.3	0.2	0.6	0.1	7	4.5	0.6	0.6	4.2	28	0.0	0	12.0	34 (N/A)	0.1	11.43
Black cherry	0.3	0.0	0.1	0.0	1	1.3	0.2	0.2	1.2	8	0.0	0	3.2	9 (N/A)	0.1	4.55
Pear	0.1	0.0	0.1	0.0	1	0.8	0.1	0.1	0.7	5	0.0	0	1.8	5 (N/A)	0.1	2.55
Ginkgo	0.6	0.1	0.3	0.0	3	1.4	0.2	0.2	1.4	9	-0.2	-1	4.0	11 (N/A)	0.1	5.71
Northern red oak	0.6	0.1	0.3	0.0	3	1.9	0.3	0.3	1.9	12	-0.9	-3	4.6	12 (N/A)	0.1	6.14
Catalpa	0.4	0.1	0.2	0.0	2	2.3	0.3	0.3	2.3	15	0.0	0	5.9	17 (N/A)	0.1	8.38
Willow	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)	0.1	0.14
Mountain ash	0.1	0.0	0.1	0.0	1	0.8	0.1	0.1	0.7	5	0.0	0	1.8	5 (N/A)	0.1	2.55
Mulberry	0.2	0.0	0.1	0.0	1	1.0	0.1	0.1	0.9	6	0.0	0	2.6	7 (N/A)	0.1	3.63
Eastern cottonwood	2.3	0.4	1.0	0.1	12	4.2	0.6	0.6	4.0	26	0.0	0	13.1	38 (N/A)	0.1	19.04
Littleleaf linden	0.0	0.0	0.0	0.0	0	0.4	0.1	0.1	0.4	2	0.0	0	0.9	3 (N/A)	0.0	2.55
Basswood	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)	0.0	2.99
Black locust	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)	0.0	7.92
Callery pear	0.1	0.0	0.0	0.0	0	0.5	0.1	0.1	0.5	3	0.0	0	1.2	3 (N/A)	0.0	3.47
Conifer Evergreen Medium	0.0	0.0	0.0	0.0	0	0.1	0.0	0.0	0.1	1	-0.1	0	0.3	1 (N/A)	0.0	0.75
Broadleaf Deciduous Small	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)	0.0	2.55
Southern magnolia	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)	0.0	1.05
Hickory	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)	0.0	7.42
Quaking aspen	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)	0.0	7.42
Citywide total	687.3	117.6	336.8	32.3	3,711	1,888.7	274.7	261.9	1,789.2	11,756	-310.3	-1,164	5,078.2	14,304 (N/A)	100.0	6.14

Table 4: Annual Carbon Stored

Cresco

Stored CO2 Benefits of Public Trees

2/1/2023

Species	Total Stored CO2 (lbs)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Maple	6,241,032	46,808	(N/A)	53.1	72.5	37.81
Apple	116,427	873	(N/A)	7.8	1.4	4.82
American basswood	419,403	3,146	(N/A)	6.3	4.9	21.54
Northern hackberry	169,325	1,270	(N/A)	5.7	2.0	9.55
Oak	262,377	1,968	(N/A)	3.9	3.0	21.86
Elm	80,662	605	(N/A)	3.0	0.9	8.52
Ash	414,351	3,108	(N/A)	2.9	4.8	46.38
Broadleaf Deciduous	32,419	243	(N/A)	2.6	0.4	4.05
Northern white cedar	41,489	311	(N/A)	2.1	0.5	6.35
Spruce	76,775	576	(N/A)	1.9	0.9	12.80
American elm	48,576	364	(N/A)	1.8	0.6	8.47
Amur maple	35,151	264	(N/A)	1.8	0.4	6.28
Eastern white pine	104,671	785	(N/A)	1.2	1.2	29.08
American sycamore	12,669	95	(N/A)	0.9	0.1	4.52
Eastern hophornbeam	3,124	23	(N/A)	0.8	0.0	1.23
Black walnut	145,186	1,089	(N/A)	0.6	1.7	77.78
Birch	35,412	266	(N/A)	0.6	0.4	20.43
Boxelder	91,305	685	(N/A)	0.3	1.1	85.60
Japanese tree lilac	6,355	48	(N/A)	0.3	0.1	6.81
Kentucky coffeetree	6,207	47	(N/A)	0.3	0.1	7.76
Honeylocust	17,670	133	(N/A)	0.3	0.2	22.09
Cottonwood	33,986	255	(N/A)	0.3	0.4	42.48
Eastern redbud	369	3	(N/A)	0.1	0.0	0.92
Conifer Evergreen Sm	831	6	(N/A)	0.1	0.0	2.08
Ohio buckeye	32,184	241	(N/A)	0.1	0.4	80.46
Broadleaf Deciduous	40,003	300	(N/A)	0.1	0.5	100.01
Black cherry	3,945	30	(N/A)	0.1	0.0	14.79
Pear	1,816	14	(N/A)	0.1	0.0	6.81
Ginkgo	8,274	62	(N/A)	0.1	0.1	31.03
Northern red oak	11,813	89	(N/A)	0.1	0.1	44.30
Catalpa	12,130	91	(N/A)	0.1	0.1	45.49
Willow	34	0	(N/A)	0.1	0.0	0.13
Mountain ash	1,816	14	(N/A)	0.1	0.0	6.81
Mulberry	3,215	24	(N/A)	0.1	0.0	12.06
Eastern cottonwood	78,517	589	(N/A)	0.1	0.9	294.44
Littleleaf linden	1,025	8	(N/A)	0.0	0.0	7.68
Basswood	1,035	8	(N/A)	0.0	0.0	7.76
Black locust	3,624	27	(N/A)	0.0	0.0	27.18
Callery pear	1,101	8	(N/A)	0.0	0.0	8.26
Conifer Evergreen Me	43	0	(N/A)	0.0	0.0	0.32
Broadleaf Deciduous	908	7	(N/A)	0.0	0.0	6.81
Southern magnolia	73	1	(N/A)	0.0	0.0	0.55
Hickory	3,672	28	(N/A)	0.0	0.0	27.54
Quaking aspen	3,672	28	(N/A)	0.0	0.0	27.54
Citywide total	8,604,672	64,535	(N/A)	100.0	100.0	27.69

Table 5: Annual Carbon Sequestered

Cresco

Annual CO Benefits of Public Trees

2/1/2023

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
Maple	397,170	2,979	-29,957	-2,602	-244	472,407	3,543	837,018	6,278 (N/A)	53.1	69.5	5.07
Apple	14,884	112	-560	-162	-5	15,776	118	29,939	225 (N/A)	7.8	2.5	1.24
American basswood	32,999	247	-2,014	-206	-17	28,857	216	59,636	447 (N/A)	6.3	5.0	3.06
Northern hackberry	14,768	111	-823	-160	-7	27,370	205	41,156	309 (N/A)	5.7	3.4	2.32
Oak	21,837	164	-1,260	-109	-10	15,712	118	36,180	271 (N/A)	3.9	3.0	3.02
Elm	11,978	90	-388	-67	-3	9,122	68	20,645	155 (N/A)	3.0	1.7	2.18
Ash	24,416	183	-1,990	-154	-16	25,583	192	47,855	359 (N/A)	2.9	4.0	5.36
Broadleaf Deciduous Medi	7,550	57	-174	-44	-2	5,795	43	13,127	98 (N/A)	2.6	1.1	1.64
Northern white cedar	4,025	30	-199	-74	-2	6,667	50	10,418	78 (N/A)	2.1	0.9	1.59
Spruce	5,069	38	-369	-84	-3	7,768	58	12,384	93 (N/A)	1.9	1.0	2.06
American elm	4,207	32	-242	-43	-2	5,481	41	9,403	71 (N/A)	1.8	0.8	1.64
Amur maple	4,405	33	-169	-46	-2	4,790	36	8,980	67 (N/A)	1.8	0.7	1.60
Eastern white pine	4,265	32	-502	-68	-4	6,057	45	9,752	73 (N/A)	1.2	0.8	2.71
American sycamore	2,135	16	-61	-14	-1	1,436	11	3,495	26 (N/A)	0.9	0.3	1.25
Eastern hophornbeam	621	5	-15	-9	0	604	5	1,201	9 (N/A)	0.8	0.1	0.47
Black walnut	8,445	63	-697	-37	-6	6,329	47	14,040	105 (N/A)	0.6	1.2	7.52
Birch	4,001	30	-171	-21	-1	3,754	28	7,563	57 (N/A)	0.6	0.6	4.36
Boxelder	6,801	51	-438	-24	-3	3,139	24	9,478	71 (N/A)	0.3	0.8	8.89
Japanese tree lilac	797	6	-31	-8	0	869	7	1,627	12 (N/A)	0.3	0.1	1.74
Kentucky coffeetree	1,253	9	-30	-7	0	953	7	2,168	16 (N/A)	0.3	0.2	2.71
Honeylocust	2,762	21	-85	-11	-1	2,359	18	5,026	38 (N/A)	0.3	0.4	6.28
Cottonwood	2,280	17	-163	-11	-1	1,519	11	3,625	27 (N/A)	0.3	0.3	4.53
Eastern redbud	85	1	-2	-1	0	80	1	161	1 (N/A)	0.1	0.0	0.40
Conifer Evergreen Small	120	1	-4	-4	0	246	2	358	3 (N/A)	0.1	0.0	0.89
Ohio buckeye	1,126	8	-154	-9	-1	1,472	11	2,435	18 (N/A)	0.1	0.2	6.09
Broadleaf Deciduous Largı	2,373	18	-192	-10	-2	1,546	12	3,718	28 (N/A)	0.1	0.3	9.29
Black cherry	382	3	-19	-3	0	433	3	792	6 (N/A)	0.1	0.1	2.97
Pear	228	2	-9	-2	0	248	2	465	3 (N/A)	0.1	0.0	1.74
Ginkgo	58	0	-40	-5	0	507	4	521	4 (N/A)	0.1	0.0	1.95
Northern red oak	663	5	-57	-5	0	689	5	1,290	10 (N/A)	0.1	0.1	4.84
Catalpa	1,105	8	-58	-5	0	834	6	1,876	14 (N/A)	0.1	0.2	7.04
Willow	11	0	0	0	0	14	0	25	0 (N/A)	0.1	0.0	0.09
Mountain ash	228	2	-9	-2	0	248	2	465	3 (N/A)	0.1	0.0	1.74
Mulberry	306	2	-15	-3	0	346	3	633	5 (N/A)	0.1	0.1	2.37
Eastern cottonwood	1,824	14	-377	-10	-3	1,469	11	2,906	22 (N/A)	0.1	0.2	10.90
Littleleaf linden	223	2	-5	-1	0	134	1	351	3 (N/A)	0.0	0.0	2.63
Basswood	209	2	-5	-1	0	159	1	361	3 (N/A)	0.0	0.0	2.71
Black locust	386	3	-17	-2	0	395	3	762	6 (N/A)	0.0	0.1	5.71
Callery pear	224	2	-5	-1	0	176	1	393	3 (N/A)	0.0	0.0	2.95
Conifer Evergreen Mediun	12	0	0	-1	0	48	0	60	0 (N/A)	0.0	0.0	0.45
Broadleaf Deciduous Smal	114	1	-4	-1	0	124	1	232	2 (N/A)	0.0	0.0	1.74
Southern magnolia	16	0	0	-1	0	59	0	74	1 (N/A)	0.0	0.0	0.55
Hickory	445	3	-18	-2	0	393	3	819	6 (N/A)	0.0	0.1	6.14
Quaking aspen	445	3	-18	-2	0	393	3	819	6 (N/A)	0.0	0.1	6.14
Citywide total	587,252	4,404	-41,344	-4,032	-340	662,358	4,968	1,204,233	9,032 (N/A)	100.0	100.0	3.87

Table 6: Annual Social and Aesthetic Benefits

Cresco

Annual Aesthetic/Other Benefits of Public Trees

2/1/2023

Species	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Maple	52,640	(N/A)	53.1	70.4	42.52
Apple	827	(N/A)	7.8	1.1	4.57
American basswood	2,940	(N/A)	6.3	3.9	20.14
Northern hackberry	3,101	(N/A)	5.7	4.1	23.31
Oak	2,404	(N/A)	3.9	3.2	26.71
Elm	1,623	(N/A)	3.0	2.2	22.86
Ash	2,370	(N/A)	2.9	3.2	35.37
Broadleaf Deciduous Medium	948	(N/A)	2.6	1.3	15.79
Northern white cedar	1,112	(N/A)	2.1	1.5	22.70
Spruce	1,242	(N/A)	1.9	1.7	27.61
American elm	676	(N/A)	1.8	0.9	15.72
Amur maple	248	(N/A)	1.8	0.3	5.89
Eastern white pine	718	(N/A)	1.2	1.0	26.60
American sycamore	347	(N/A)	0.9	0.5	16.54
Eastern hophornbeam	31	(N/A)	0.8	0.0	1.65
Black walnut	733	(N/A)	0.6	1.0	52.35
Birch	422	(N/A)	0.6	0.6	32.46
Boxelder	458	(N/A)	0.3	0.6	57.29
Japanese tree lilac	45	(N/A)	0.3	0.1	6.40
Kentucky coffeetree	171	(N/A)	0.3	0.2	28.56
Honeylocust	566	(N/A)	0.3	0.8	94.28
Cottonwood	218	(N/A)	0.3	0.3	36.29
Eastern redbud	4	(N/A)	0.1	0.0	1.38
Conifer Evergreen Small	64	(N/A)	0.1	0.1	21.34
Ohio buckeye	102	(N/A)	0.1	0.1	34.03
Broadleaf Deciduous Large	189	(N/A)	0.1	0.3	62.96
Black cherry	22	(N/A)	0.1	0.0	10.94
Pear	13	(N/A)	0.1	0.0	6.40
Ginkgo	7	(N/A)	0.1	0.0	3.39
Northern red oak	52	(N/A)	0.1	0.1	25.78
Catalpa	104	(N/A)	0.1	0.1	51.77
Willow	5	(N/A)	0.1	0.0	2.74
Mountain ash	13	(N/A)	0.1	0.0	6.40
Mulberry	18	(N/A)	0.1	0.0	8.77
Eastern cottonwood	117	(N/A)	0.1	0.2	58.34
Littleleaf linden	31	(N/A)	0.0	0.0	31.20
Basswood	29	(N/A)	0.0	0.0	28.56
Black locust	39	(N/A)	0.0	0.1	39.16
Callery pear	26	(N/A)	0.0	0.0	26.22
Conifer Evergreen Medium	12	(N/A)	0.0	0.0	12.31
Broadleaf Deciduous Small	6	(N/A)	0.0	0.0	6.40
Southern magnolia	9	(N/A)	0.0	0.0	9.46
Hickory	46	(N/A)	0.0	0.1	45.86
Quaking aspen	46	(N/A)	0.0	0.1	45.86
Citywide total	74,793	(N/A)	100.0	100.0	32.09

Table 7: Summary of Benefits in Dollars

Cresco

Total Annual Benefits of Public Trees by Species ($)

2/1/2023

Species	Energy	CO_2	Air Quality	Stormwater	Aesthetic/Other	Total ($)	Standard Error	% of Total $
Maple	58,778	6,278	10,692	65,222	52,640	193,609	(N/A)	71.2
Apple	2,278	225	322	904	827	4,557	(N/A)	1.7
American basswood	3,762	447	539	3,293	2,940	10,981	(N/A)	4.0
Northern hackberry	3,612	309	560	2,977	3,101	10,558	(N/A)	3.9
Oak	1,976	271	322	2,250	2,404	7,222	(N/A)	2.7
Elm	1,133	155	174	1,005	1,623	4,091	(N/A)	1.5
Ash	3,310	359	572	3,547	2,370	10,158	(N/A)	3.7
Broadleaf Deciduous M	800	98	113	486	948	2,445	(N/A)	0.9
Northern white cedar	868	78	83	1,446	1,112	3,587	(N/A)	1.3
Spruce	966	93	69	2,016	1,242	4,386	(N/A)	1.6
American elm	663	71	104	580	676	2,094	(N/A)	0.8
Amur maple	695	67	98	275	248	1,382	(N/A)	0.5
Eastern white pine	753	73	10	2,029	718	3,584	(N/A)	1.3
American sycamore	178	26	27	167	347	746	(N/A)	0.3
Eastern hophornbeam	88	9	12	31	31	171	(N/A)	0.1
Black walnut	773	105	135	1,024	733	2,770	(N/A)	1.0
Birch	471	57	76	380	422	1,406	(N/A)	0.5
Boxelder	395	71	66	562	458	1,554	(N/A)	0.6
Japanese tree lilac	127	12	18	50	45	252	(N/A)	0.1
Kentucky coffeetree	124	16	18	99	171	428	(N/A)	0.2
Honeylocust	286	38	46	239	566	1,175	(N/A)	0.4
Cottonwood	195	27	33	256	218	728	(N/A)	0.3
Eastern redbud	12	1	2	4	4	22	(N/A)	0.0
Conifer Evergreen Smal	34	3	2	54	64	157	(N/A)	0.1
Ohio buckeye	188	18	35	242	102	586	(N/A)	0.2
Broadleaf Deciduous La	199	28	34	284	189	734	(N/A)	0.3
Black cherry	56	6	9	25	22	118	(N/A)	0.0
Pear	36	3	5	14	13	72	(N/A)	0.0
Ginkgo	64	4	11	59	7	145	(N/A)	0.1
Northern red oak	84	10	12	88	52	245	(N/A)	0.1
Catalpa	102	14	17	110	104	346	(N/A)	0.1
Willow	2	0	0	1	5	9	(N/A)	0.0
Mountain ash	36	3	5	14	13	72	(N/A)	0.0
Mulberry	44	5	7	20	18	93	(N/A)	0.0
Eastern cottonwood	182	22	38	392	117	751	(N/A)	0.3
Littleleaf linden	18	3	3	12	31	67	(N/A)	0.0
Basswood	21	3	3	16	29	71	(N/A)	0.0
Black locust	47	6	8	38	39	138	(N/A)	0.1
Callery pear	24	3	3	16	26	73	(N/A)	0.0
Conifer Evergreen Medi	7	0	1	7	12	27	(N/A)	0.0
Broadleaf Deciduous Sn	18	2	3	7	6	36	(N/A)	0.0
Southern magnolia	8	1	1	4	9	23	(N/A)	0.0
Hickory	44	6	7	40	46	143	(N/A)	0.1
Quaking aspen	44	6	7	40	46	143	(N/A)	0.1
Citywide Total	83,503	9,032	14,304	90,325	74,793	271,957	(N/A)	100.0

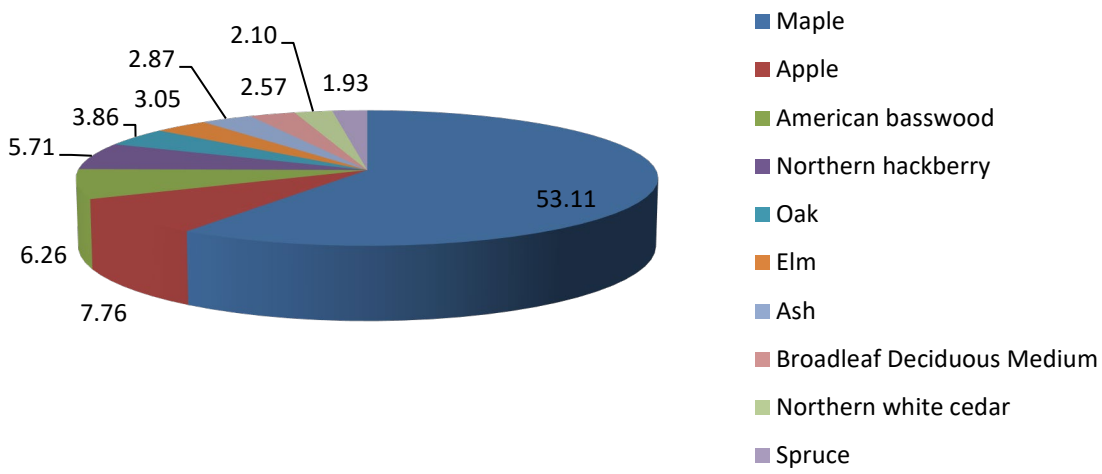

Figure 1: Species Distribution

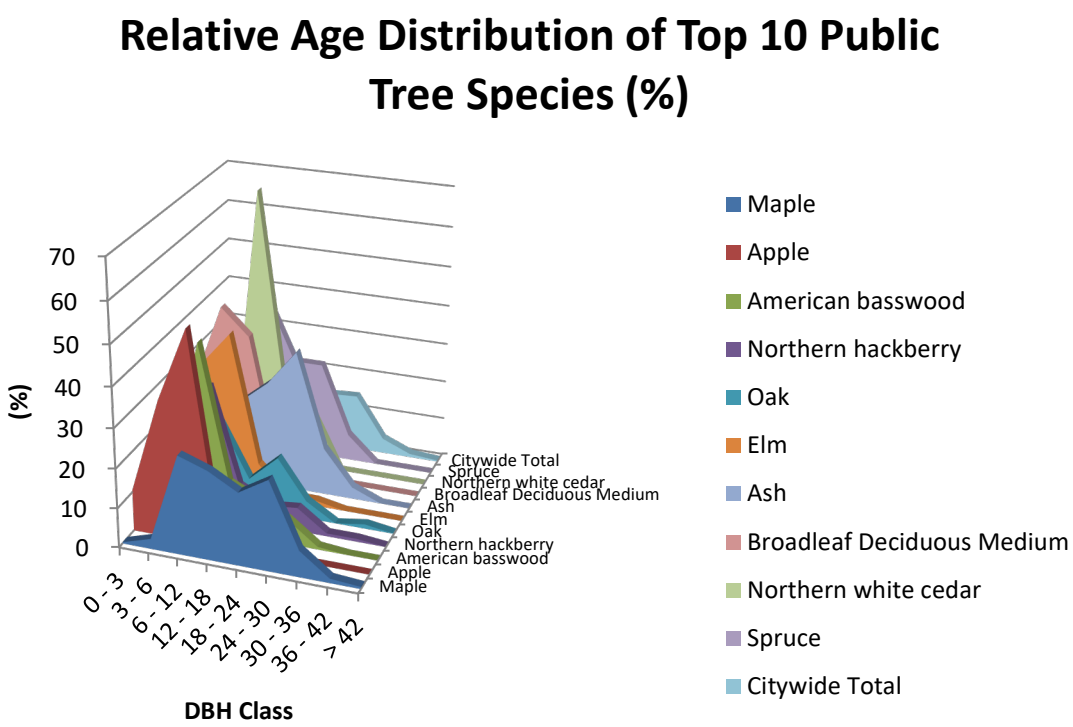

Figure 2: Relative Age Class

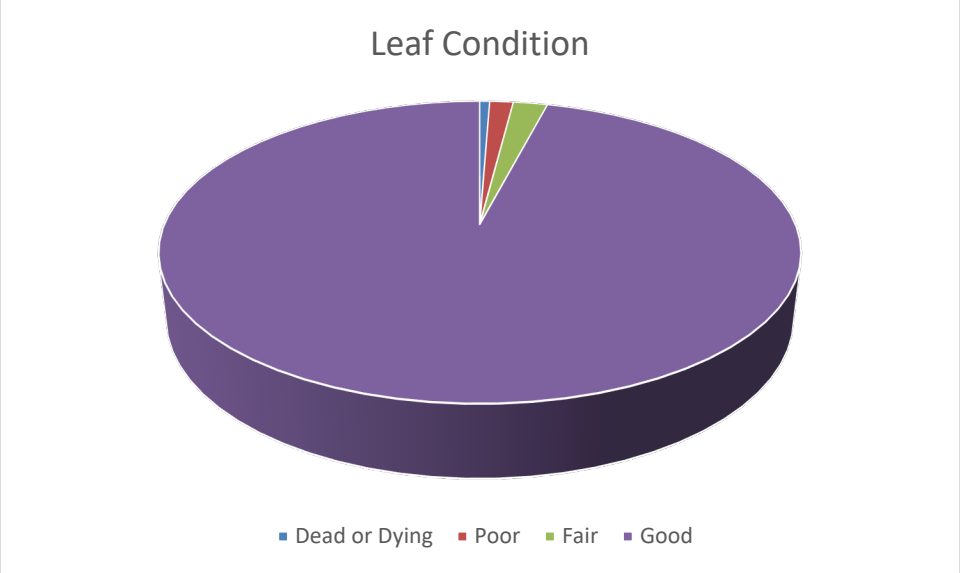

Figure 3: Foliage Condition

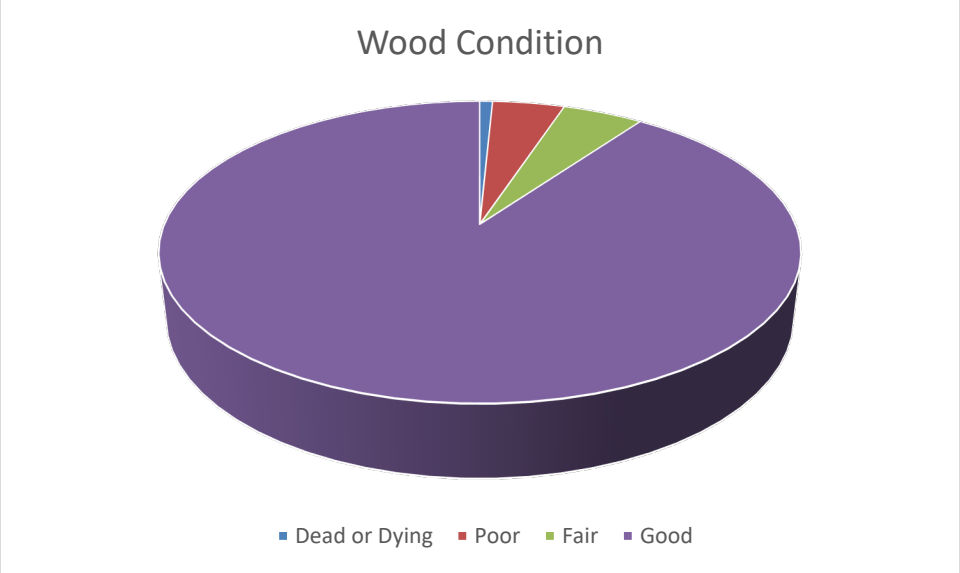

Figure 4: Wood Condition

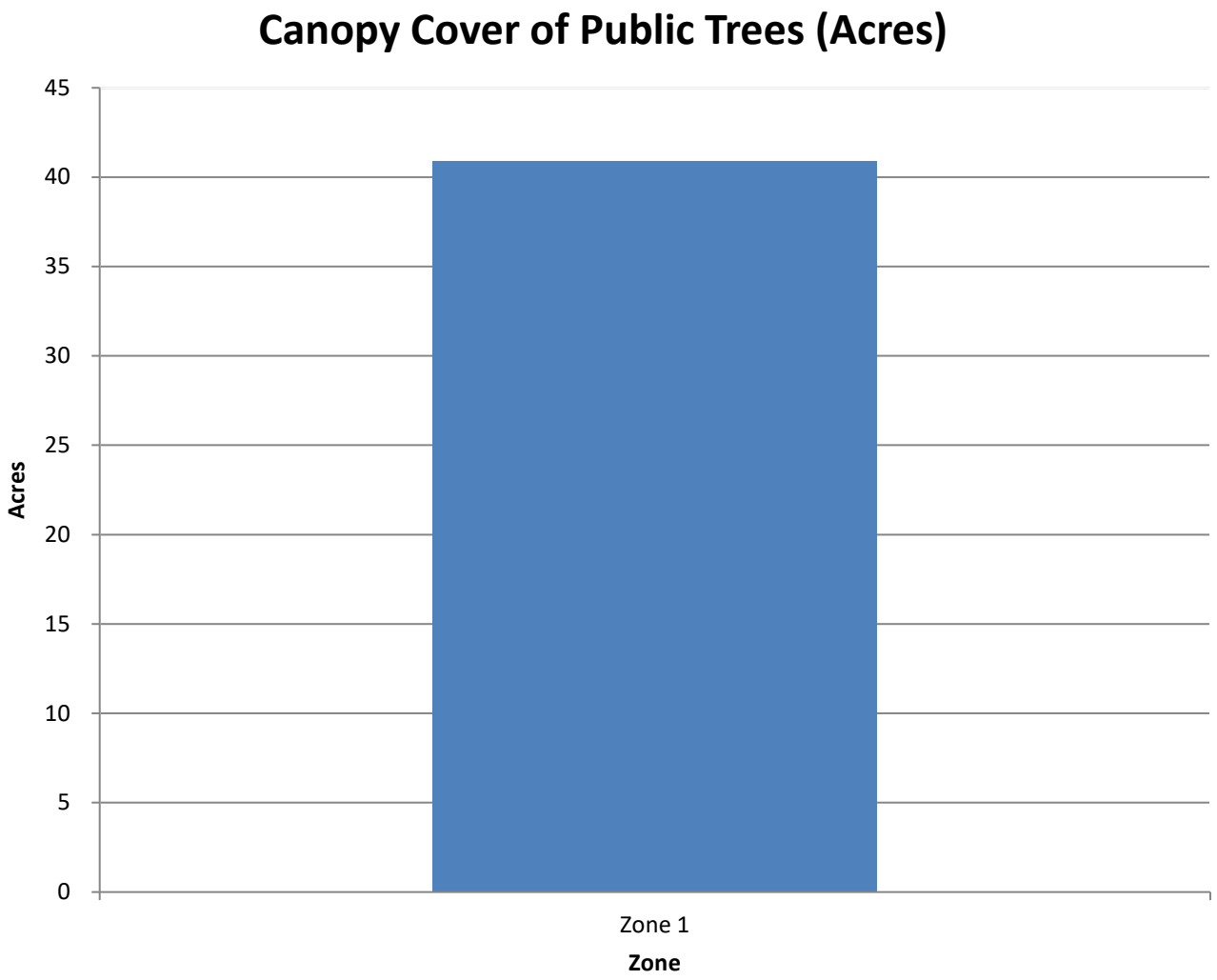

Figure 5: Canopy Cover in Acres

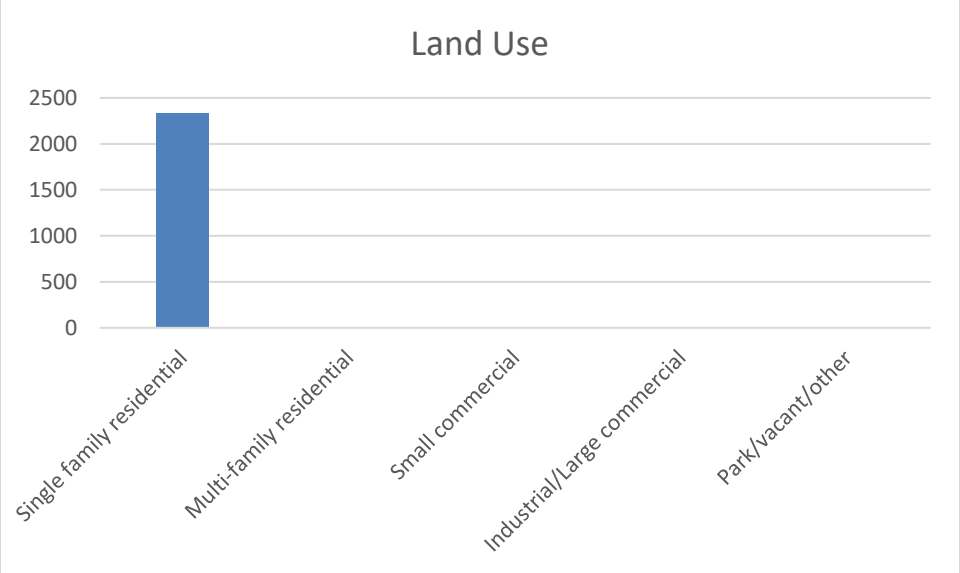

Figure 6: Land Use of city/park trees

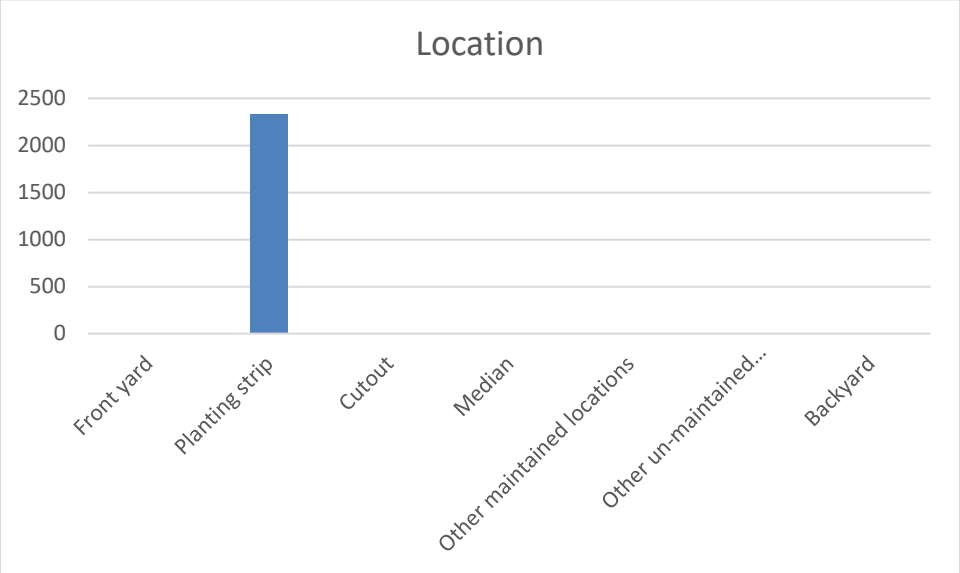

Figure 7: Location of city/park trees

Appendix B: ArcGIS Mapping

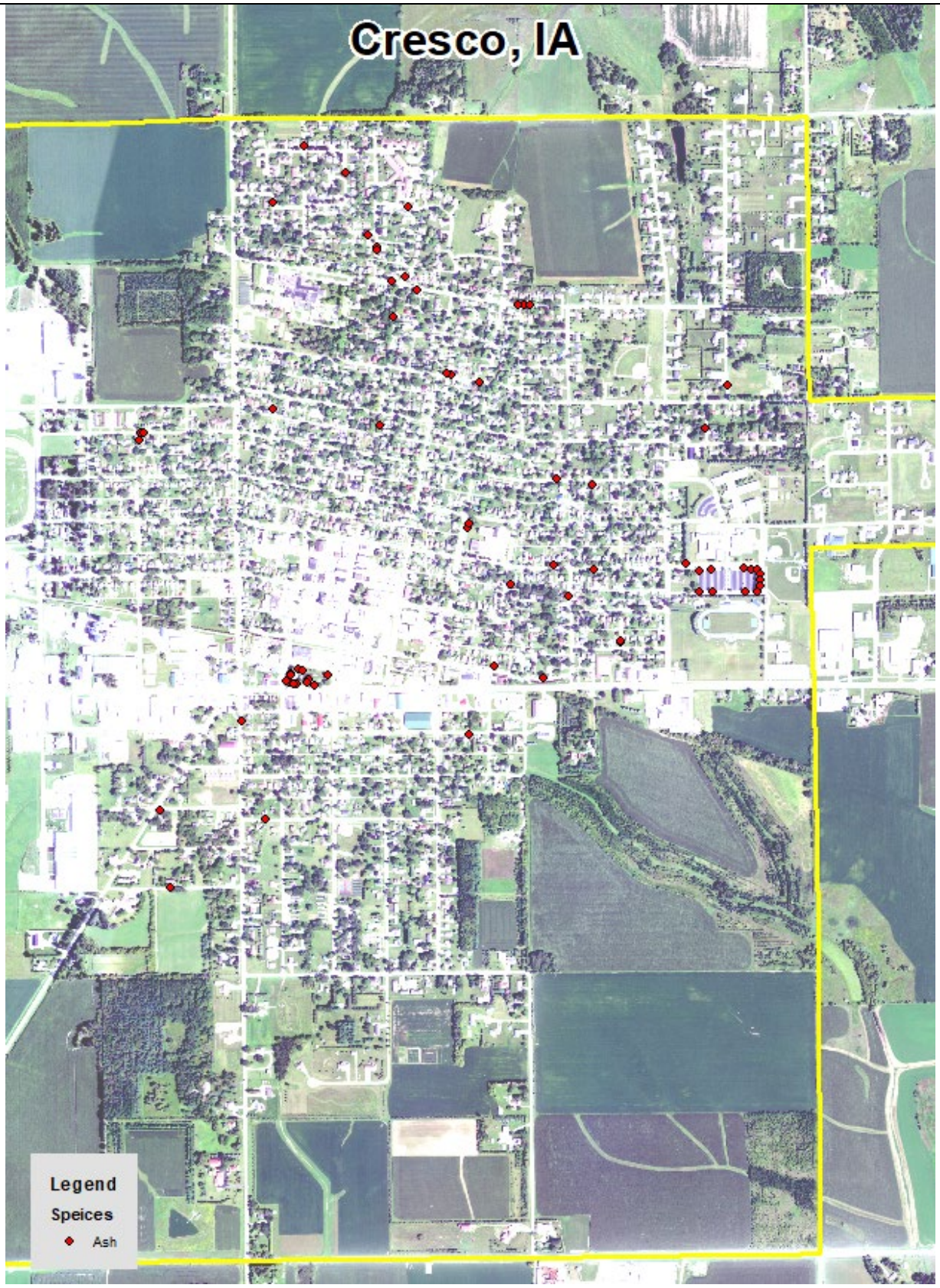

Figure 1: Location of Ash Trees

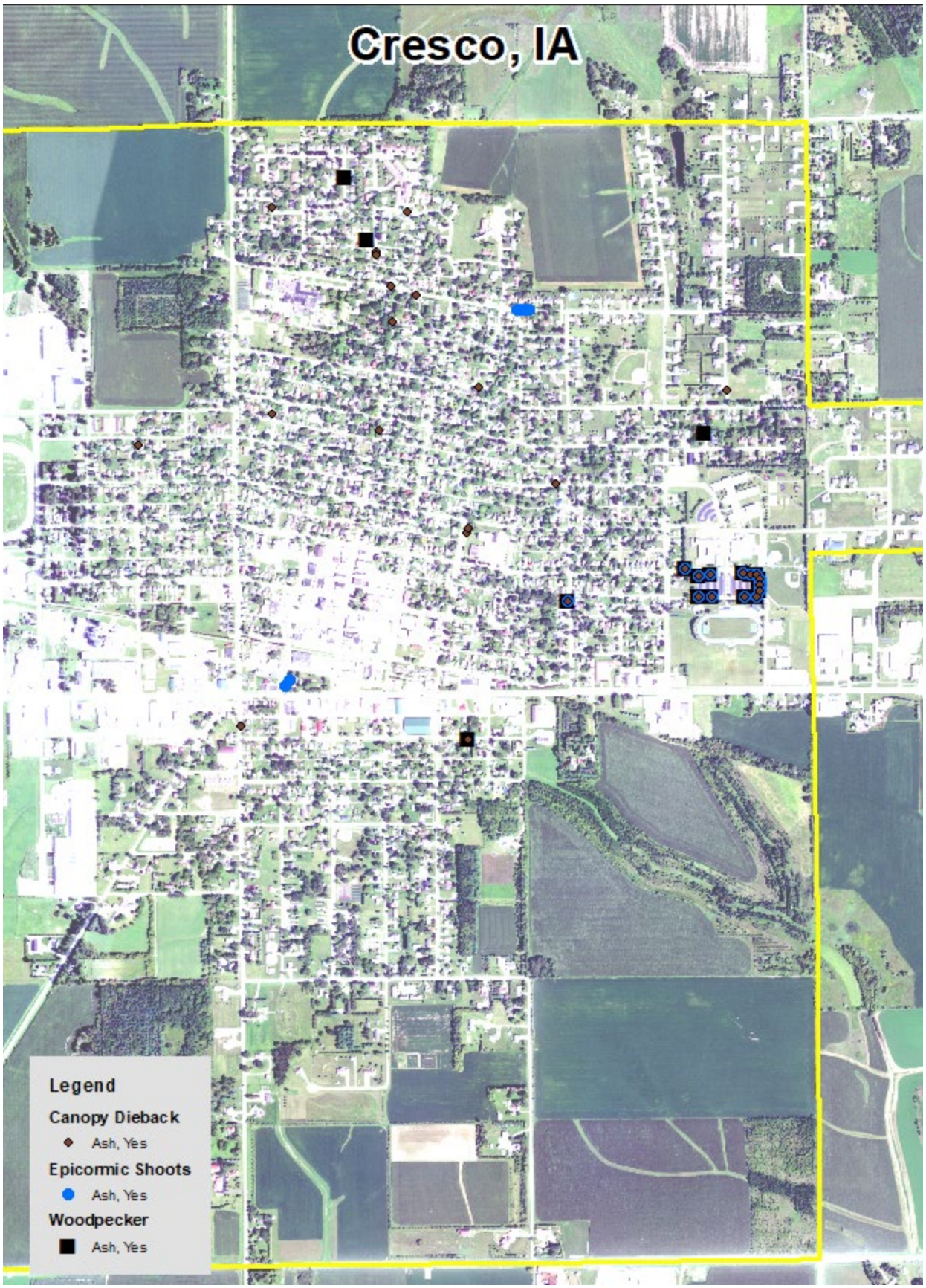

Figure 2: Location of EAB symptoms

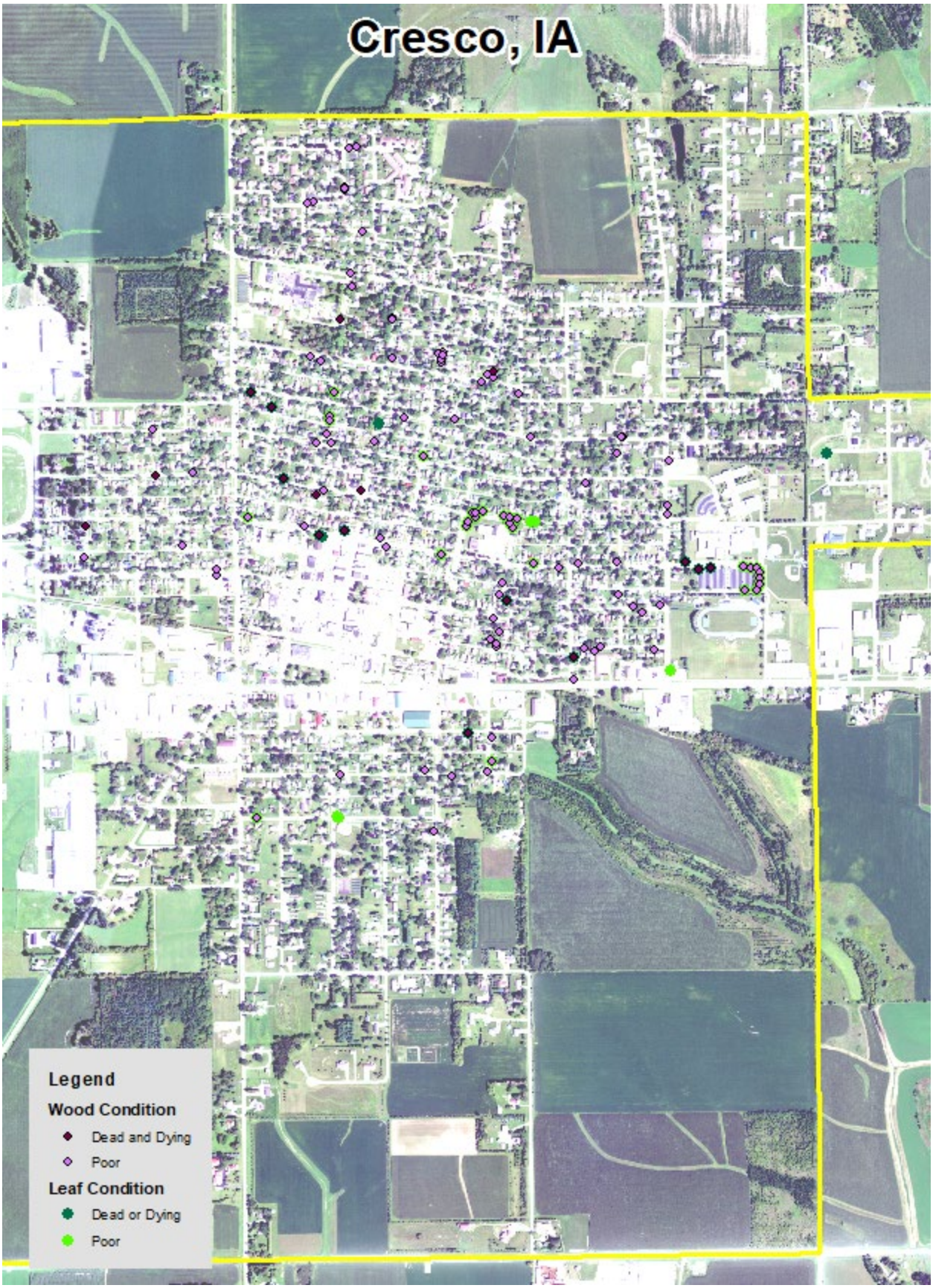

Figure 3: Location of Poor Condition Trees

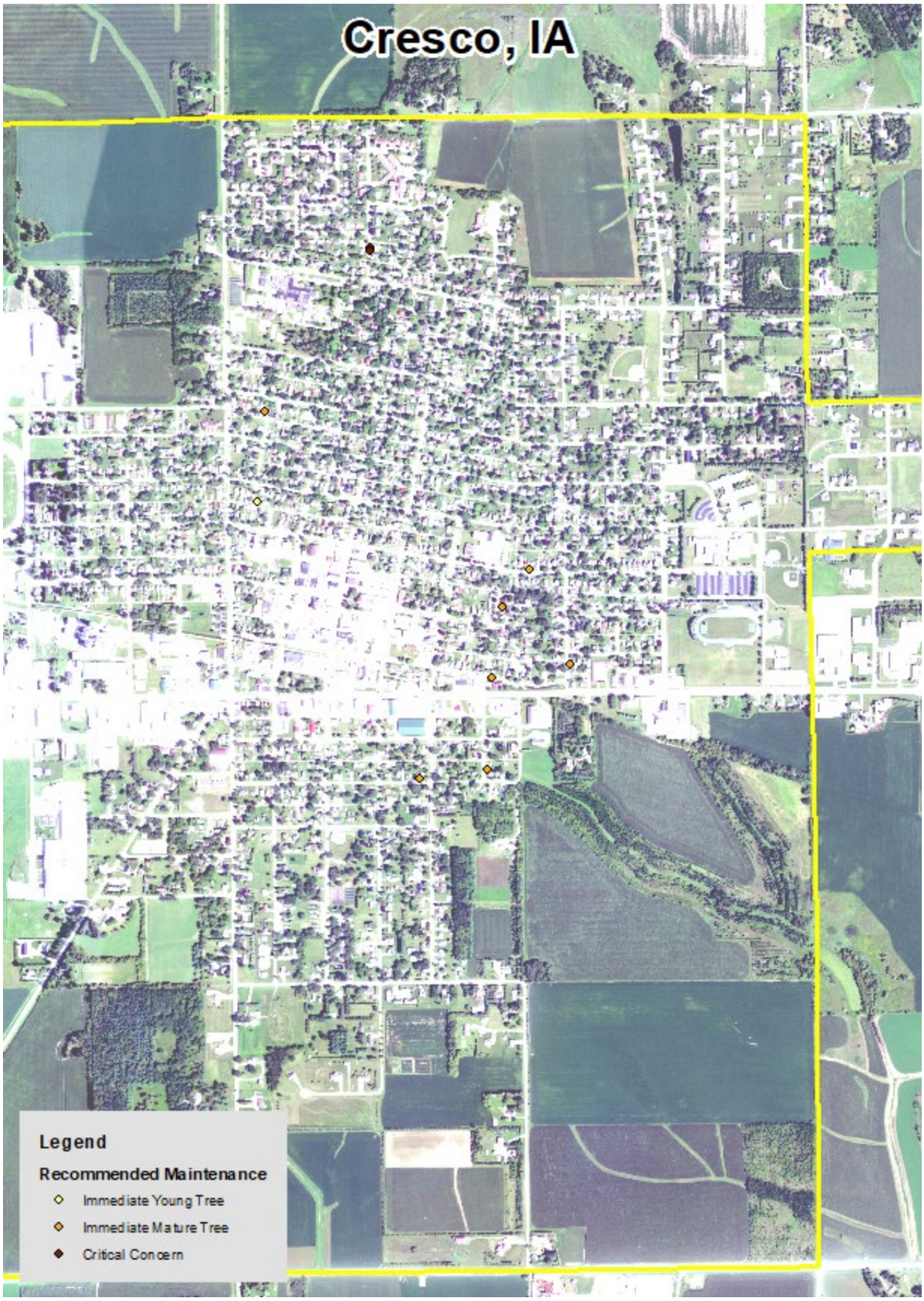

Figure 4: Location of Trees with Recommended Maintenance

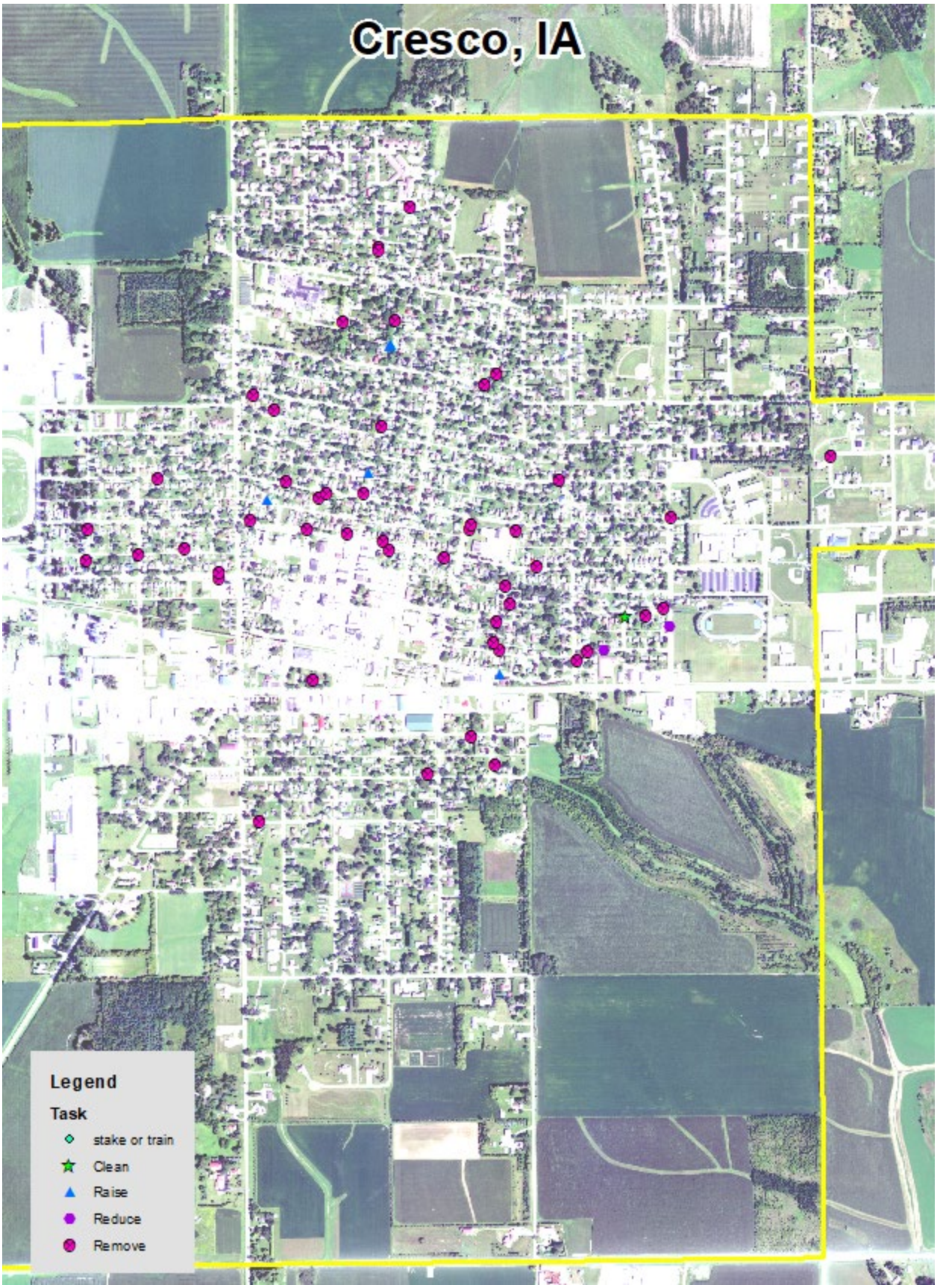

Figure 5: Maintenance Tasks ***City ownership of the trees recommended for removal should be verified prior to any removal***

Appendix C: Cresco Tree Ordinances

CHAPTER151

TREES

151.01 Definition
151.02 Permits for Planting Trees in Boulevards
151.03 Tree Trimming
151.04 Regulations for Planting Trees in Boulevards
151.05 Removal of Boulevard Trees
151.06 Removal of Trees on Private Property
151.07 Abuse or Mutilation of Trees
151.08 Disease Control

151.01 DEFINITIONS. For use in this chapter, the following terms are defined:
1. "Boulevard" means the area given between the proposed or existing sidewalk and curb on a public street.
2. "Director of Public Works" means the Director of Public Works of the City or a duly appointed representative.

151.02 PERMITS FOR PLANTING TREES IN **BOULEVARDS.** A permit must be secured at the office of the Director of Public Works before planting any tree in any boulevard within the corporate limits of the City. Trees are to be purchased and planted by the property owner of the land abutting the boulevard, or by a person retained by the property owner. Varieties of trees approved are those trees of the hard wood variety, having good appearance, adaptability to the climate, being long lived and generally free from injurious insects and diseases. Following are listed the approved varieties:
Crabapple
Japanese Lilac
Service berry
Oak (Red, White)
Hackberry
Linden
Elm (Disease Resistant)
Cork
London Plane
Ironwood Hornbeam
(Ord. 473 - Jun. 18 Supp.)

151.03 TREE TRIMMING. All property owners shall trim boulevard trees to a ground clearance of eight **(8)** feet. The City or City's agent will perform trimming of boulevard trees as deemed necessary. Public utilities may do such trimming as necessary to protect their utilities.

151.04 REGULATIONS FOR PLANTING TREES IN **BOULEVARDS.**
1. Trees must be of an approved variety and of nursery stock with a straight trunk.
2. No trees shall be placed so as to cause a traffic hazard, in the opinion of the Director of Public Works.
3. Trees shall be planted at least twenty-five (25) feet apart.
4. Trees shall not be planted closer than 25 feet from future or existing curb returns at intersections.
5. Trees shall be planted at least five (5) feet from driveways, visible or identifiable underground utility or light poles.
6. Except where a special permit is obtained from the Director of Public Works, no tree shall be planted on any boulevard where the distance between the nearest edge of the sidewalk and curb is less than four (4) feet.

7. All trees shall be planted equidistant from the nearest edge of the proposed or existing sidewalk and curb, except when the Director of Public Works directs otherwise.
8. The Director of Public Works may assist in staking out the location of the tree planting.
9. Trees shall be planted at least ten (10) feet from fire hydrants.

151.05 REMOVAL OF BOULEVARD TREES.

1. The City will remove trees that are determined by the Director of Public Works to be diseased, dangerous or a public nuisance.
2. Ordinary removal by the City will leave the stump in the ground, cut off at about boulevard level, then ground to below the surface of the boulevard.
3. Removal of any boulevard tree is to be approved by the Director of Public Works before starting removal.
4. Upon approval to remove a nuisance tree from the boulevard, the property owner may hire a licensed tree surgeon to remove this tree if the property owner takes full responsibility for the hauling, chipping, stump removal, replacement of the tree, and replacement of the lawn. Any income from the sale of the tree would then go to the property owner instead of the City.

(Ord. 452 - Jul. 14 Supp.)

151.06 REMOVAL OF TREES ON PRIVATE PROPERTY.

1. A property owner may remove a tree that is on personal property as long as the property owner does the actual work. Otherwise, the property owner must hire a licensed tree surgeon to remove the tree. ***(Ord. 452 - Jul. 14 Supp.)***

151.07 ABUSE OR MUTILATION OF TREES. No person shall willfully damage, injure, mar, deface or destroy any tree on any boulevard in the City. ***(Ord. 452 - Jul. 14 Supp.)***

151.08 DISEASE CONTROL. Any dead, diseased, or damaged tree or shrub that may harbor serious insect or disease pests or disease injurious to other trees is hereby declared to be a nuisance. ***(Ord. 452 - Jul 14 Supp.)***

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.