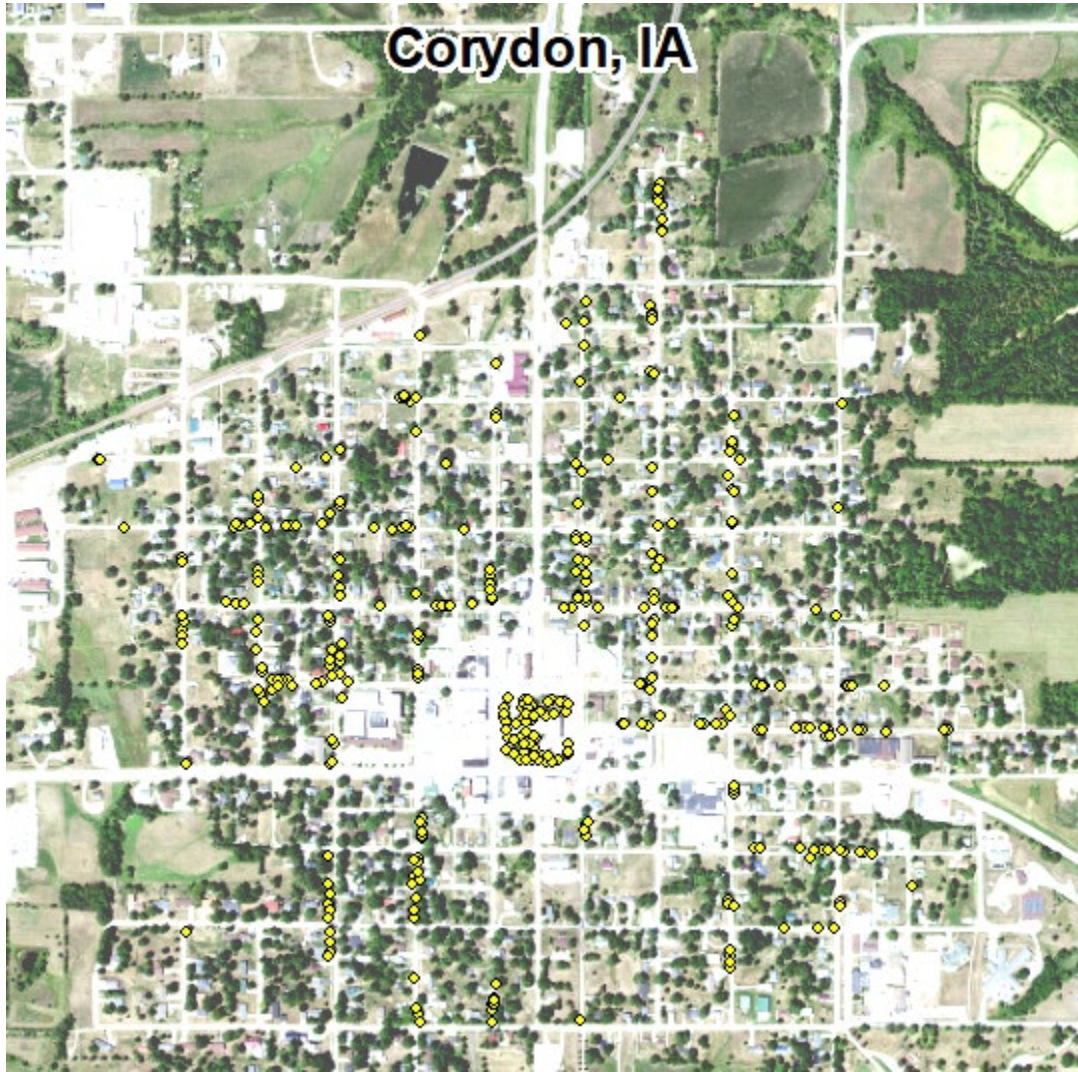


Corydon, IA



2020 Urban Forest Management Plan
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Executive Summary

Overview

This plan was developed to assist the City of Corydon 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 20% of Corydon'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 2019, 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 359 trees inventoried.

- Corydon's trees provide \$30,873 of benefits annually, an average of \$86 per tree
- There are over 40 species of trees
- The top four genera are: Maple 39%, Ash 20%, and Crabapples 8%
- 39% of trees are in need of some type of management
- 89 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 89 trees needing removal, 40 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*](#)
- 70 of the 73 ash trees have one or more symptoms 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
- To remove all ash trees within 6 years the budget would need to be increased to \$10,950 a year. If the budget were increased to \$16,425 a year all ash could be removed in 4 years
Suggestion: request a budget increase to \$10,950 annually and apply for grants to plant replacement trees

Introduction

This plan was developed to assist Corydon 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 Corydon, these costs can be extended over years and public safety issues from dead and dying ash trees mitigated.

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

Inventory

In 2019, 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 359 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. Corydon's trees reduce energy related costs by approximately \$8,418 annually (Appendix A, Table 1). These savings are both in Electricity (40.0 MWh) and in Natural Gas (5,491.2 Therms).

Annual Stormwater Benefits

Corydon's trees intercept about 441,145 gallons of rainfall or snowmelt a year (Appendix A, Table 2). This interception provides \$11,955 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 Corydon, it is estimated that trees remove 531 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 \$1,501 (Appendix A, Table 3).

Annual Carbon Benefits

Carbon sequestration and storage reduce the amount of carbon in the atmosphere, mitigating climate change. In Corydon, trees sequester about 147,964 lbs. of carbon a year with an associated value of 1,110 (Appendix A, Table 5). In addition, the trees store 1,805,249 lbs. of carbon, with a yearly benefit of \$13,539 (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. Corydon receives \$7,889 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, Corydon's trees provide \$30,873 of benefits annually. Benefits of individual trees vary based on size, species, health and location, but on average each of the 359 trees in Corydon provide approximately \$86 annually (Appendix A, Table 7).

Forest Structure

Species Distribution

Corydon has over 40 different tree species along city streets and parks (Appendix A, Figure 1). This should be commended and is good diversity. The town square is a remarkable demonstration of species diversity. This is certainly no accident and required many years of planning and execution.

Pests commonly attract trees within a genus. A good guideline for healthy, diverse urban forests is to have $\leq 20\%$ of a genus and $\leq 10\%$ of any one species. The distribution of trees by genera is as follows:

Maples	139	39%
Ashes	73	20%
Apples (Crab)	27	8%
Hackberry	23	6%
Oaks	19	5%
Linden/Basswoods	13	4%
Elms	11	3%
Walnuts	9	3%
Sycamores	8	2%
All other genera	34	9%

Age Class

Most of Corydon's trees (57%) are greater than 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. Corydon's size curve is on the larger side, indicating an older than average stand. Trees between 6 and 18" diameter include 32% of the inventory.

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 Corydon indicate that 81% of the trees are in good/fair health, with 23% of the foliage in poor health, dead or dying (Appendix A, Figure 3 & Appendix B, Figure 3). Similarly, 71% of Corydon's trees are in good/fair health for wood condition (appendix A, Figure 4 & Appendix B, Figure 3). Wood condition that is in poor health, dead or dying is about 29% of the population.

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).

Tree Removal	89	25%
Crown Cleaning	26	7%
Crown Raising	17	5%
Treat pests	5	1%
Tree Staking/train	2	<1%

Canopy Cover

The total canopy with both private and public trees is 25%, 224 acres. The canopy cover included in the Corydon inventory includes approximately 4.59 acres (Appendix A, Figure 4). The Iowa Urban Tree Council recommends 3% canopy cover goals for all Iowa communities. The City's Canopy goal should be to increase canopy to 3%, in 30 years. To achieve this goal it is estimated that 65 trees need to be planted *annually* on public and private lands. Comparatively, to increase the City's canopy just 1% means planting 22 trees annually for 30 years.

Land Use and Location

The majority of Corydon's city and park trees are in planting strips in single family residential neighborhoods (Appendix A, Figure 6 & Appendix A, Figure 7). The following describes the land use and locations for the street and park trees.

Land Use

Single family residential	56%
Park/vacant/other	43%
Industrial/Large commercial	<1%
Small commercial	0%
Multifamily residential	0%

Location

Planting strip	91%
Front yard	9%
Other maintained locations	0%
Cutout (surrounded by pavement)	0%

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

Corydon 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). 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 immediate maintenance. There are a total of 29 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 89 removals, 73 are ash trees. There are a total of 73 ash trees, and 70 of those have signs and symptoms that have been associated with EAB. In

addition, there are many 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. Cost estimated used for budget purposed will be \$75 per tree.

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 Corydon. Cost estimate used for budget includes \$100 per planting and \$25 annual maintenance.

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 (39%) (Appendix A, Figure 1). Maples should not be planted until this percentage can be lowered below 20%. Also, ash trees have not been recommended since 2002, due to the threat of EAB. Section 12.16.041.B of Corydon's city ordinance specifies cotton-bearing trees are prohibited. Other species to avoid include: poplar, box elder, Chinese (Siberian) elm, evergreen, willow or black walnut, as outlined in (Appendix C). All trees planted must meet the restrictions in city ordinance 12.16.041 (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.

Six Year Maintenance Plan

Year 1

Removal: 2 critical concern trees and 13 immediate removals
Planting and Replacement: 18 trees to be planted in open locations
Young Tree Pruning & Maintenance: 18 trees planted year 1
Visual Survey for signs and symptoms of EAB

Year 2

Removal: 13 immediate removals + 2 routine removals
Planting and Replacement: 18 trees in open locations from year one removals
Young Tree Pruning & Maintenance: 18 trees planted year 2
Routine trimming: Contract to trim 1/3 of the city trees
Visual Survey for signs and symptoms of EAB

Year 3

Removal: 15 routine trees and/or removal of any new critical concern trees
Planting and Replacement: 18 trees to be planted in open locations and from previous removals
Young Tree Pruning & Maintenance: 18 trees planted year 3
Visual Survey for signs and symptoms of EAB

Year 4

Removal: 15 routine trees and/or removal of any new critical concern trees
Planting and Replacement: 18 trees in open locations from previous removals
Routine trimming: Contract to trim 1/3 of the city trees
Young Tree Pruning & Maintenance: 18 trees planted year 4
Visual Survey for signs and symptoms of EAB

Year 5

Removal: 15 routine trees and/or removal of any new critical concern trees
Planting and Replacement: 18 trees to be planted in open locations and from previous removals
Young Tree Pruning & Maintenance: 18 trees planted year 5
Visual Survey for signs and symptoms of EAB

Year 6

Removal: 14 routine trees and/or removal of any new critical concern trees
Planting and Replacement: 18 trees in open locations from previous removals
Routine trimming: Contract to trim 1/3 of the city trees
Young Tree Pruning & Maintenance: 18 trees planted year 6
Visual Survey for signs and symptoms of EAB

* To remove all ash trees within 6 years: 73 ash trees removed (approximately 100% of ash). It will take approximately \$65,700 to remove only ash. EAB could potentially kill all ash within 1 to 5 years.

**To remove all ash trees within 6 years, the budget would need to be increased to \$10,950 a year. If the budget were increased to \$16,425 a year all ash could be removed in 4 years.

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

EAB has been established in Allerton so treatments are not feasible unless they were started for preventative measures. 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 Chapter 12.16 (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 if preventative treatments are not being used for EAB.

Suggested language for City Code includes the following:

“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.”

Budget

Total \$98,250 over 6 years (\$16,375/year)

Year 1 Budget

Removal of 15 trees	\$13,500
Planting of 18 trees	\$1,800
Watering & Maintenance	\$450
Subtotal	\$15,750

Year 2 Budget

Removal of 15 trees	\$13,500
Planting of 18 trees	\$1,800
Watering & Maintenance	\$450
Routine trimming	\$1,250
Subtotal	\$17,000

Year 3 Budget

Removal of 15 trees	\$13,500
Planting of 18 trees	\$1,800
Watering & Maintenance	\$450
Subtotal	\$15,750

Year 4 Budget

Removal of 15 trees	\$13,500
Planting of 18 trees	\$1,800
Watering & Maintenance	\$450
Routine trimming	\$1,250
Subtotal	\$17,000

Year 5 Budget

Removal of 15 trees	\$13,500
Planting of 18 trees	\$1,800
Watering & Maintenance	\$450
Subtotal	\$15,750

Year 6 Budget

Removal of 15 trees	\$13,500
Planting of 18 trees	\$1,800
Watering & Maintenance	\$450
Routine trimming	\$1,250
Subtotal	\$17,000

*Removal of ash over 6 years: approximately 73 ash trees removed (approximately 100% of ash). It will take approximately \$65,700 to remove only ash.

Purposed Budget Increase

EAB could potentially kill all ash trees in Corydon within the next 1-5 years. To remove all ash trees within 6 years the budget would need to be increased to \$10,950 a year. If the budget were increased to \$16,425 a year all ash could be removed in 4 years. Additionally, it is recommended that Corydon 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. Treatments must have already been started for preventative purposes in Corydon. Trunk injection is administered every two years for the life of the tree. If treatment is discontinued, the tree dies.

Works Cited

Census Bureau. 2010. <http://censtats.census.gov/data/IA/1601964290.pdf> (April, 2013)

USDA Forest Service, et al. 2006. i-Tree Software Suite v1.0 User's Manual. Pp. 27-40.

McPherson EG, Simpson JR, Peper PJ, Gardner SL, Vargas KE, Ho J, Maco S, Xiao Q. 2005b. City of Charleston, South Carolina, municipal forest resource analysis. Internal Tech Rep. Davis, CA: U.S. Department of Agriculture, Center for Urban Forest Research. p. 57

Nowak, DJ and JF Dwyer. 2007. Understanding the benefits and costs of urban forest ecosystems. In: Kuser, J. (ed.) Urban and Community Forestry in the Northeast. New York: Springer. Pp. 25-46.

Peper, Paula J; McPherson, E Gregory; Simpson, James R; Vargas, Kelaine E; Xiao, Qingfu 2009. Lower Midwest community tree guide: benefits, costs, and strategic planting. Gen. Tech. Rep. PSW-GTR-219. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. p.115

Appendix A: i-Tree Data

Table 1: Annual Energy Benefits

Corydon

Annual Energy Benefits of Public Trees

3/27/2020

Species	Total Electricity (MWh)	Electricity (\$)	Total Natural Gas (Therms)	Natural Gas (\$)	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Silver maple	10.7	813	1,396.4	1,368	2,181	(N/A)	16.7	25.9	70.36
Ash	6.8	519	970.2	951	1,470	(N/A)	13.4	17.5	58.81
Black cherry	3.2	247	467.9	458	705	(N/A)	11.3	8.4	33.58
Eastern red cedar	1.2	88	184.1	180	269	(N/A)	10.8	3.2	13.44
Northern pin oak	3.5	266	497.3	487	754	(N/A)	6.5	9.0	62.82
Black walnut	2.0	155	267.2	262	417	(N/A)	5.9	4.9	37.87
Mulberry	1.1	86	161.0	158	244	(N/A)	5.9	2.9	22.19
Siberian elm	2.3	173	301.4	295	468	(N/A)	3.8	5.6	66.93
Eastern redbud	0.0	3	6.9	7	10	(N/A)	3.2	0.1	1.62
American sycamore	1.6	123	219.2	215	338	(N/A)	2.2	4.0	84.50
Honeylocust	1.3	100	170.5	167	267	(N/A)	2.2	3.2	66.78
Northern hackberry	0.9	69	120.8	118	187	(N/A)	1.6	2.2	62.43
Plum	0.0	4	8.2	8	12	(N/A)	1.6	0.1	3.89
American elm	0.4	29	55.4	54	84	(N/A)	1.6	1.0	27.88
Scotch pine	0.2	13	28.5	28	41	(N/A)	1.6	0.5	13.58
Broadleaf Deciduous Large	0.1	8	14.7	14	22	(N/A)	1.6	0.3	7.32
Apple	0.3	20	37.5	37	56	(N/A)	1.1	0.7	28.16
American basswood	0.7	50	96.2	94	144	(N/A)	1.1	1.7	71.99
Catalpa	0.8	62	110.0	108	170	(N/A)	1.1	2.0	84.77
Ohio buckeye	0.1	11	23.0	23	33	(N/A)	1.1	0.4	16.73
Red maple	0.5	41	70.0	69	110	(N/A)	1.1	1.3	54.82
White oak	0.4	27	51.8	51	78	(N/A)	1.1	0.9	38.98
Cottonwood	0.5	37	63.1	62	99	(N/A)	0.5	1.2	98.63
Bowelder	0.1	8	14.9	15	22	(N/A)	0.5	0.3	22.45
Willow	0.3	24	47.4	46	71	(N/A)	0.5	0.8	70.84
Swamp white oak	0.1	8	16.9	17	24	(N/A)	0.5	0.3	24.47
Norway spruce	0.1	11	19.7	19	30	(N/A)	0.5	0.4	30.47
Bur oak	0.2	18	27.0	26	44	(N/A)	0.5	0.5	44.23
Sugar maple	0.3	24	44.2	43	68	(N/A)	0.5	0.8	67.52
Total	40.0	3,037	5,491.2	5,381	8,418	(N/A)	100.0	100.0	45.26

Table 2: Annual Stormwater Benefits

Corydon

Annual Stormwater Benefits of Public Trees

3/27/2020

Species	Total rainfall interception (Gal)	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Silver maple	163,196	4,423	(N/A)	16.7	37.0	142.66
Ash	68,487	1,856	(N/A)	13.4	15.5	74.24
Black cherry	13,107	355	(N/A)	11.3	3.0	16.91
Eastern red cedar	16,110	437	(N/A)	10.8	3.7	21.83
Northern pin oak	35,751	969	(N/A)	6.5	8.1	80.74
Black walnut	15,629	424	(N/A)	5.9	3.5	38.51
Mulberry	4,075	110	(N/A)	5.9	0.9	10.04
Siberian elm	25,223	684	(N/A)	3.8	5.7	97.65
Eastern redbud	106	3	(N/A)	3.2	0.0	0.48
American sycamore	24,307	659	(N/A)	2.2	5.5	164.68
Honeylocust	13,832	375	(N/A)	2.2	3.1	93.71
Northern hackberry	6,473	175	(N/A)	1.6	1.5	58.47
Plum	145	4	(N/A)	1.6	0.0	1.31
American elm	3,309	90	(N/A)	1.6	0.8	29.89
Scotch pine	1,787	48	(N/A)	1.6	0.4	16.14
Broadleaf Deciduous Large	644	17	(N/A)	1.6	0.1	5.81
Apple	931	25	(N/A)	1.1	0.2	12.62
American basswood	7,894	214	(N/A)	1.1	1.8	106.96
Catalpa	11,182	303	(N/A)	1.1	2.5	151.51
Ohio buckeye	749	20	(N/A)	1.1	0.2	10.14
Red maple	4,471	121	(N/A)	1.1	1.0	60.58
White oak	3,199	87	(N/A)	1.1	0.7	43.34
Cottonwood	7,239	196	(N/A)	0.5	1.6	196.17
Bowelder	720	20	(N/A)	0.5	0.2	19.51
Willow	3,764	102	(N/A)	0.5	0.9	102.01
Swamp white oak	586	16	(N/A)	0.5	0.1	15.88
Norway spruce	2,969	80	(N/A)	0.5	0.7	80.46
Bur oak	1,466	40	(N/A)	0.5	0.3	39.72
Sugar maple	3,796	103	(N/A)	0.5	0.9	102.86
Citywide total	441,145	11,955	(N/A)	100.0	100.0	64.27

Table 3: Annual Air Quality Benefits

Corydon

Annual Air Quality Benefits of Public Trees

3/27/2020

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								
Silver maple	30.3	5.1	14.7	1.3	163	50.4	7.4	7.1	48.4	316	-16.3	-61	148.4	417	(N/A)	16.7	13.46
Ash	14.8	2.5	7.2	0.7	80	33.0	4.8	4.6	31.0	205	-3.4	-13	95.2	272	(N/A)	13.4	10.87
Black cherry	4.1	0.7	1.9	0.2	22	15.7	2.3	2.2	14.7	97	0.0	0	41.7	119	(N/A)	11.3	5.67
Eastern red cedar	2.1	0.4	1.8	0.3	14	5.8	0.8	0.8	5.3	35	-8.6	-32	8.6	17	(N/A)	10.8	0.85
Northern pin oak	7.8	1.3	3.8	0.3	42	16.9	2.5	2.3	15.9	105	-1.8	-7	49.1	140	(N/A)	6.5	11.69
Black walnut	1.3	0.2	0.7	0.1	7	9.6	1.4	1.3	9.2	60	0.0	0	23.9	68	(N/A)	5.9	6.14
Mulberry	1.1	0.2	0.6	0.1	6	5.5	0.8	0.8	5.2	34	0.0	0	14.1	40	(N/A)	5.9	3.65
Siberian elm	4.5	0.8	2.2	0.2	24	10.8	1.6	1.5	10.3	67	0.0	0	31.8	91	(N/A)	3.8	13.06
Eastern redbud	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)	3.2	0.21
American sycamore	4.2	0.7	1.8	0.2	22	7.7	1.1	1.1	7.4	48	0.0	0	24.2	70	(N/A)	2.2	17.49
Honeylocust	2.7	0.4	1.2	0.1	14	6.2	0.9	0.9	6.0	39	-2.1	-8	16.3	45	(N/A)	2.2	11.31
Northern hackberry	0.8	0.1	0.5	0.0	5	4.3	0.6	0.6	4.1	27	0.0	0	11.1	32	(N/A)	1.6	10.51
Plum	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)	1.6	0.51
American elm	0.3	0.0	0.2	0.0	1	1.9	0.3	0.3	1.8	12	0.0	0	4.6	13	(N/A)	1.6	4.35
Scotch pine	0.2	0.0	0.2	0.0	1	0.9	0.1	0.1	0.8	5	-0.5	-2	1.7	4	(N/A)	1.6	1.48
Broadleaf Deciduous Large	0.0	0.0	0.0	0.0	0	0.5	0.1	0.1	0.5	3	0.0	0	1.1	3	(N/A)	1.6	1.05
Apple	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)	1.1	4.55
American basswood	1.1	0.2	0.5	0.0	6	3.2	0.5	0.4	3.0	20	-0.9	-3	8.0	22	(N/A)	1.1	11.10
Catalpa	2.1	0.3	0.9	0.1	11	3.9	0.6	0.5	3.7	24	0.0	0	12.1	35	(N/A)	1.1	17.51
Ohio buckeye	0.1	0.0	0.0	0.0	0	0.7	0.1	0.1	0.7	4	0.0	0	1.7	5	(N/A)	1.1	2.34
Red maple	1.1	0.2	0.5	0.0	6	2.5	0.4	0.4	2.5	16	-0.4	-1	7.2	20	(N/A)	1.1	10.15
White oak	0.3	0.0	0.2	0.0	2	1.7	0.3	0.2	1.6	11	0.0	0	4.4	12	(N/A)	1.1	6.17
Cottonwood	1.6	0.3	0.7	0.1	8	2.3	0.3	0.3	2.2	14	0.0	0	7.7	23	(N/A)	0.5	22.55
Boulevard	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)	0.5	3.26
Willow	0.9	0.1	0.4	0.0	5	1.6	0.2	0.2	1.5	10	-0.2	-1	4.7	14	(N/A)	0.5	13.58
Swamp white oak	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)	0.5	3.47
Norway spruce	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)	0.5	1.45
Bar oak	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)	0.5	7.42
Sage maple	0.5	0.1	0.2	0.0	3	1.5	0.2	0.2	1.4	9	-0.4	-1	3.9	11	(N/A)	0.5	10.75
Citywide total	82.5	14.0	40.7	3.9	446	191.1	27.8	26.5	181.3	1,190	-36.1	-135	531.7	1,501	(N/A)	100.0	8.07

Table 4: Annual Carbon Stored

Corydon

Stored CO2 Benefits of Public Trees						
3/27/2020						
Species	Total Stored CO2 (lbs)	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Silver maple	761,175	5,709	(N/A)	16.7	42.2	184.16
Ash	244,515	1,834	(N/A)	13.4	13.5	73.35
Black cherry	62,121	466	(N/A)	11.3	3.4	22.19
Eastern red cedar	8,017	60	(N/A)	10.8	0.4	3.01
Northern pin oak	128,738	966	(N/A)	6.5	7.1	80.46
Black walnut	43,349	325	(N/A)	5.9	2.4	29.56
Mulberry	17,549	132	(N/A)	5.9	1.0	11.97
Siberian elm	108,850	816	(N/A)	3.8	6.0	116.63
Eastern redbud	247	2	(N/A)	3.2	0.0	0.31
American sycamore	142,957	1,072	(N/A)	2.2	7.9	268.04
Honeylocust	34,270	257	(N/A)	2.2	1.9	64.26
Northern hackberry	11,406	86	(N/A)	1.6	0.6	28.52
Plum	369	3	(N/A)	1.6	0.0	0.92
American elm	7,828	59	(N/A)	1.6	0.4	19.57
Scotch pine	770	6	(N/A)	1.6	0.0	1.93
Broadleaf Deciduous	1,059	8	(N/A)	1.6	0.1	2.65
Apple	3,945	30	(N/A)	1.1	0.2	14.79
American basswood	40,191	301	(N/A)	1.1	2.2	150.71
Catalpa	71,755	538	(N/A)	1.1	4.0	269.08
Ohio buckeye	1,319	10	(N/A)	1.1	0.1	4.95
Red maple	11,569	87	(N/A)	1.1	0.6	43.39
White oak	9,492	71	(N/A)	1.1	0.5	35.60
Cottonwood	55,982	420	(N/A)	0.5	3.1	419.86
Boxelder	1,101	8	(N/A)	0.5	0.1	8.26
Willow	14,280	107	(N/A)	0.5	0.8	107.10
Swamp white oak	1,101	8	(N/A)	0.5	0.1	8.26
Norway spruce	3,343	25	(N/A)	0.5	0.2	25.07
Bur oak	3,672	28	(N/A)	0.5	0.2	27.54
Sugar maple	14,280	107	(N/A)	0.5	0.8	107.10
Citywide total	1,805,249	13,539	(N/A)	100.0	100.0	72.79

Table 5: Annual Carbon Sequestered

Corydon

Annual CO₂ Benefits of Public Trees

3/27/2020

Species	Sequestered (lb)	Sequestered (\$)	Decomposition Release (lb)	Maintenance Release (lb)	Total Released (\$)	Avoided (lb)	Avoided (\$)	Net Total (lb)	Total Standard (\$)	% of Total Trees	% of Total \$	Avg. \$/tree
Silver maple	50,313	377	-3,654	-124	-38	17,963	135	64,499	484 (N/A)	16.7	43.6	15.60
Ash	4,147	31	-1,174	-80	-9	11,479	86	14,372	108 (N/A)	13.4	9.7	4.31
Black cherry	5,330	40	-298	-39	-3	5,451	41	10,445	78 (N/A)	11.3	7.1	3.73
Eastern red cedar	721	5	-38	-26	0	1,953	15	2,610	20 (N/A)	10.8	1.8	0.98
Northern pin oak	2,284	17	-618	-41	-5	5,889	44	7,514	56 (N/A)	6.5	5.1	4.70
Black walnut	4,461	33	-208	-20	-2	3,421	26	7,653	57 (N/A)	5.9	5.2	5.22
Mulberry	1,688	13	-84	-14	-1	1,908	14	3,498	26 (N/A)	5.9	2.4	2.39
Siberian elm	4,375	33	-522	-25	-4	3,825	29	7,653	57 (N/A)	3.8	5.2	8.20
Eastern redbud	81	1	-1	-2	0	65	0	144	1 (N/A)	3.2	0.1	0.18
American sycamore	2,963	22	-686	-19	-5	2,723	20	4,981	37 (N/A)	2.2	3.4	9.34
Honeylocust	2,896	22	-164	-10	-1	2,211	17	4,932	37 (N/A)	2.2	3.3	9.25
Northern hackberry	898	7	-55	-7	0	1,524	11	2,360	18 (N/A)	1.6	1.6	5.90
Plum	85	1	-2	-1	0	80	1	161	1 (N/A)	1.6	0.1	0.40
American elm	498	4	-38	-4	0	649	5	1,104	8 (N/A)	1.6	0.7	2.76
Scotch pine	158	1	-4	-4	0	283	2	434	3 (N/A)	1.6	0.3	1.08
Broadleaf Deciduous Large	214	2	-5	-2	0	168	1	375	3 (N/A)	1.6	0.3	0.94
Apple	382	3	-19	-3	0	433	3	792	6 (N/A)	1.1	0.5	2.97
American basswood	2,289	17	-193	-8	-2	1,100	8	3,188	24 (N/A)	1.1	2.2	11.96
Catalpa	1,336	10	-344	-9	-3	1,365	10	2,347	18 (N/A)	1.1	1.6	8.80
Ohio buckeye	320	2	-7	-2	0	240	2	551	4 (N/A)	1.1	0.4	2.07
Red maple	1,407	11	-56	-5	0	908	7	2,254	17 (N/A)	1.1	1.5	8.45
White oak	868	7	-46	-4	0	600	5	1,419	11 (N/A)	1.1	1.0	5.32
Cottonwood	479	4	-269	-6	-2	813	6	1,017	8 (N/A)	0.5	0.7	7.63
Bowelder	181	1	-5	-1	0	173	1	347	3 (N/A)	0.5	0.2	2.60
Willow	0	0	-69	-4	-1	539	4	466	3 (N/A)	0.5	0.3	3.49
Swamp white oak	224	2	-5	-1	0	176	1	393	3 (N/A)	0.5	0.3	2.95
Norway spruce	187	1	-16	-3	0	246	2	415	3 (N/A)	0.5	0.3	3.11
Bur oak	445	3	-18	-2	0	393	3	819	6 (N/A)	0.5	0.6	6.14
Sugar maple	758	6	-69	-4	-1	535	4	1,220	9 (N/A)	0.5	0.8	9.15
Citywide total	89,988	675	-8,668	-468	-69	67,112	503	147,964	1,110 (N/A)	100.0	100.0	5.97

Table 6: Annual Social and Aesthetic Benefits

Corydon

Annual Aesthetic/Other Benefits of Public Trees

3/27/2020

Species	Total (\$)	Standard Error	% of Total Trees	% of Total \$	Avg. \$/tree
Silver maple	3,680	(N/A)	16.7	46.6	118.71
Ash	415	(N/A)	13.4	5.3	16.61
Black cherry	311	(N/A)	11.3	3.9	14.79
Eastern red cedar	376	(N/A)	10.8	4.8	18.82
Northern pin oak	220	(N/A)	6.5	2.8	18.30
Black walnut	457	(N/A)	5.9	5.8	41.54
Mulberry	96	(N/A)	5.9	1.2	8.77
Siberian elm	302	(N/A)	3.8	3.8	43.19
Eastern redbud	2	(N/A)	3.2	0.0	0.37
American sycamore	203	(N/A)	2.2	2.6	50.73
Honeylocust	686	(N/A)	2.2	8.7	171.55
Northern hackberry	143	(N/A)	1.6	1.8	47.57
Plum	4	(N/A)	1.6	0.1	1.38
American elm	76	(N/A)	1.6	1.0	25.42
Scotch pine	46	(N/A)	1.6	0.6	15.42
Broadleaf Deciduous Large	39	(N/A)	1.6	0.5	13.03
Apple	22	(N/A)	1.1	0.3	10.94
American basswood	164	(N/A)	1.1	2.1	81.93
Catalpa	94	(N/A)	1.1	1.2	47.08
Ohio buckeye	39	(N/A)	1.1	0.5	19.55
Red maple	175	(N/A)	1.1	2.2	87.48
White oak	86	(N/A)	1.1	1.1	43.12
Cottonwood	29	(N/A)	0.5	0.4	28.57
Bovelder	27	(N/A)	0.5	0.3	27.10
Willow	0	(N/A)	0.5	0.0	0.00
Swamp white oak	26	(N/A)	0.5	0.3	26.22
Norway spruce	47	(N/A)	0.5	0.6	47.08
Bur oak	46	(N/A)	0.5	0.6	45.86
Sugar maple	76	(N/A)	0.5	1.0	76.42
Citywide total	7,889	(N/A)	100.0	100.0	42.41

Table 7: Summary of Benefits in Dollars

Corydon

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

3/27/2020

Species	Energy	CO ₂	Air Quality	Stormwater	Aesthetic/Other	Total (\$)	Standard Error	% of Total \$
Silver maple	2,181	484	417	4,423	3,680	11,185	(N/A)	36.2
Ash	1,470	108	272	1,836	415	4,121	(N/A)	13.3
Black cherry	705	78	119	355	311	1,568	(N/A)	5.1
Eastern red cedar	269	20	17	437	376	1,118	(N/A)	3.6
Northern pin oak	754	56	140	969	220	2,139	(N/A)	6.9
Black walnut	417	57	68	424	457	1,422	(N/A)	4.6
Mulberry	244	26	40	110	96	517	(N/A)	1.7
Siberian elm	468	57	91	684	302	1,603	(N/A)	5.2
Eastern redbud	10	1	1	3	2	17	(N/A)	0.1
American sycamore	338	37	70	639	203	1,307	(N/A)	4.2
Honeylocust	267	37	45	375	686	1,410	(N/A)	4.6
Northern hackberry	187	18	32	175	143	555	(N/A)	1.8
Plum	12	1	2	4	4	22	(N/A)	0.1
American elm	84	8	13	90	76	271	(N/A)	0.9
Scotch pine	41	3	4	48	46	143	(N/A)	0.5
Broadleaf Deciduous La	22	3	3	17	39	84	(N/A)	0.3
Apple	56	6	9	25	22	118	(N/A)	0.4
American basswood	144	24	22	214	164	568	(N/A)	1.8
Catalpa	170	18	35	303	94	619	(N/A)	2.0
Ohio buckeye	33	4	5	20	39	102	(N/A)	0.3
Red maple	110	17	20	121	175	443	(N/A)	1.4
White oak	78	11	12	87	86	274	(N/A)	0.9
Cottonwood	99	8	23	196	29	354	(N/A)	1.1
Boxelder	22	3	3	20	27	75	(N/A)	0.2
Willow	71	3	14	102	0	190	(N/A)	0.6
Swamp white oak	24	3	3	16	26	73	(N/A)	0.2
Norway spruce	30	3	1	80	47	163	(N/A)	0.5
Bur oak	44	6	7	40	46	143	(N/A)	0.5
Sugar maple	68	9	11	103	76	267	(N/A)	0.9
Citywide Total	8,418	1,110	1,501	11,955	7,889	30,873	(N/A)	100.0

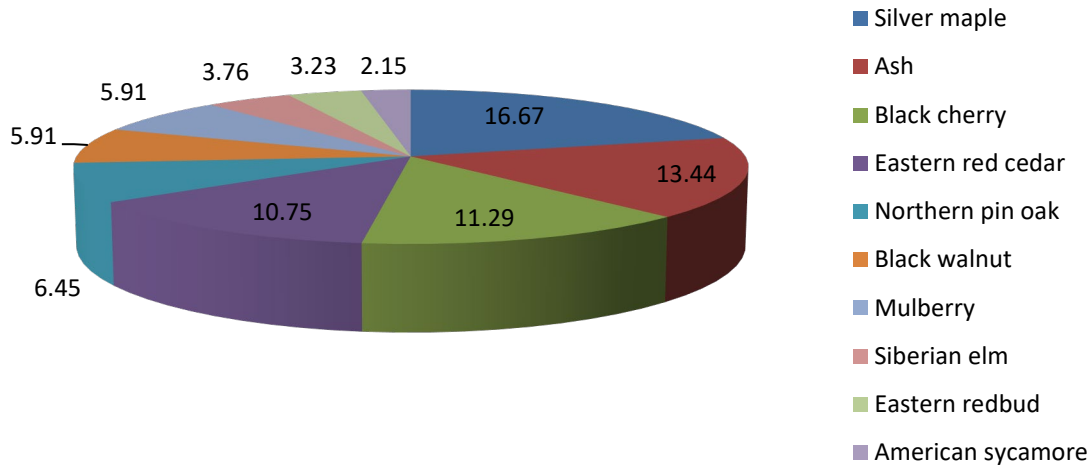


Figure 1: Species Distribution

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

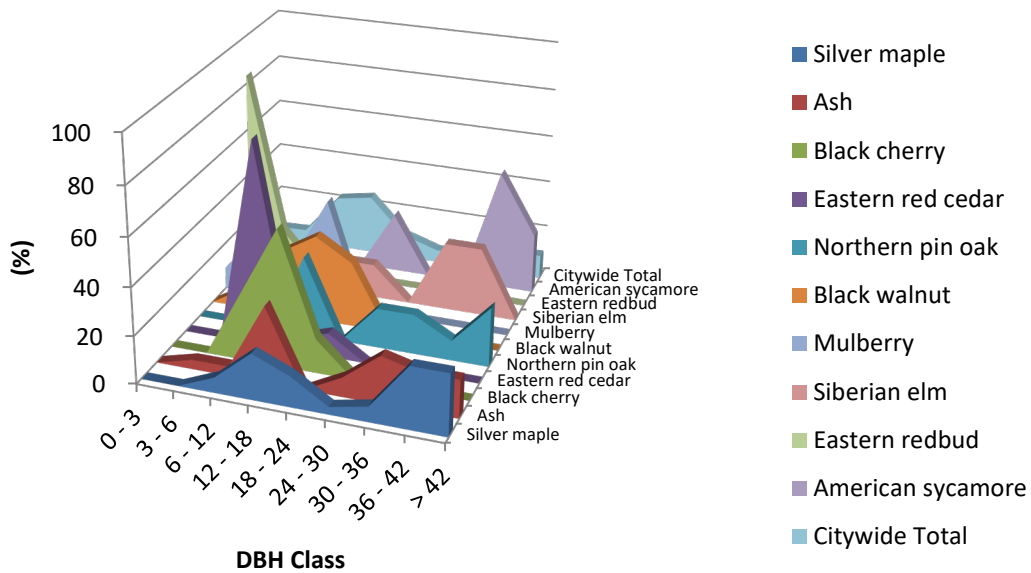


Figure 2: Relative Age Class

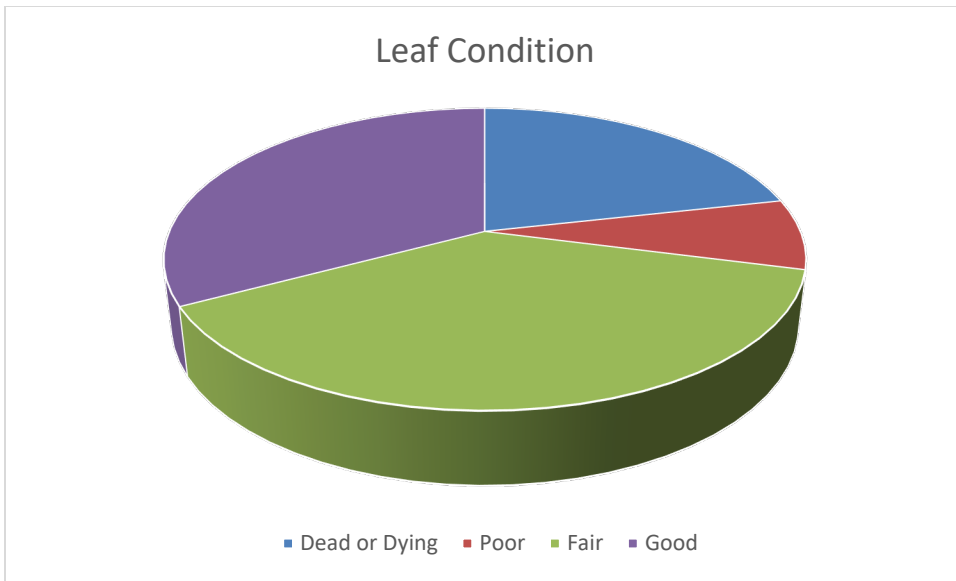


Figure 3: Foliage Condition

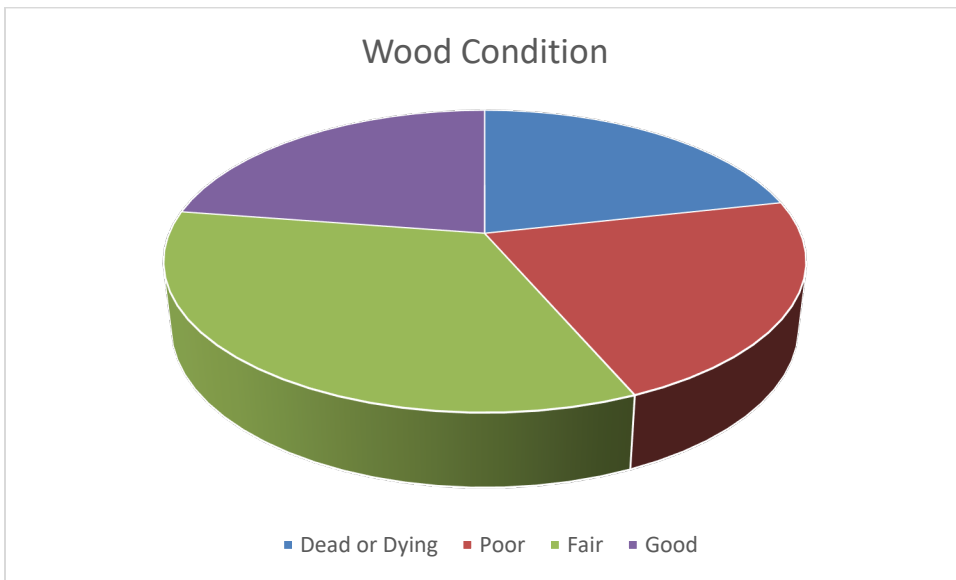


Figure 4: Wood Condition

Canopy Cover of Public Trees (Acres)

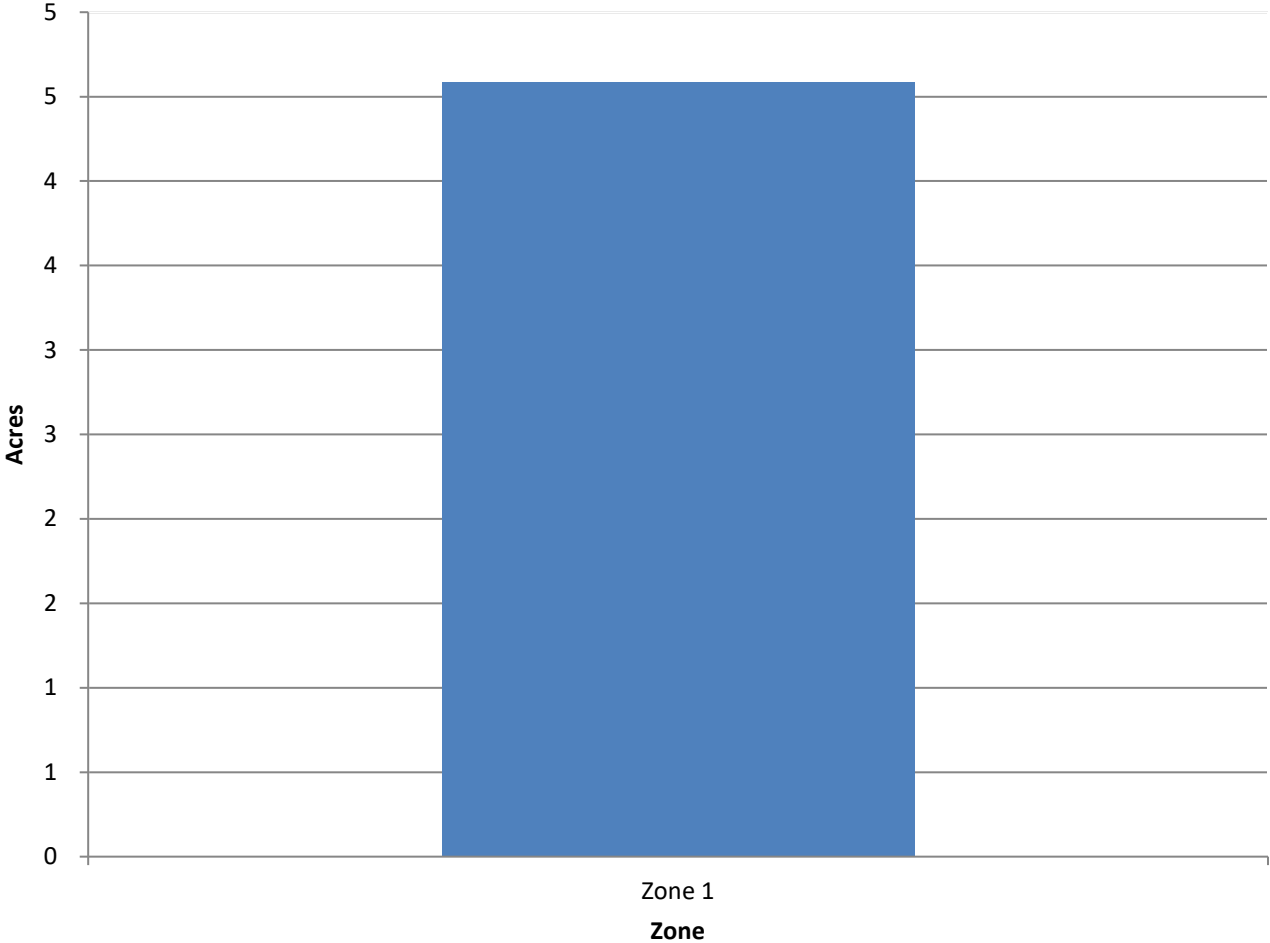


Figure 5: Canopy Cover in Acres

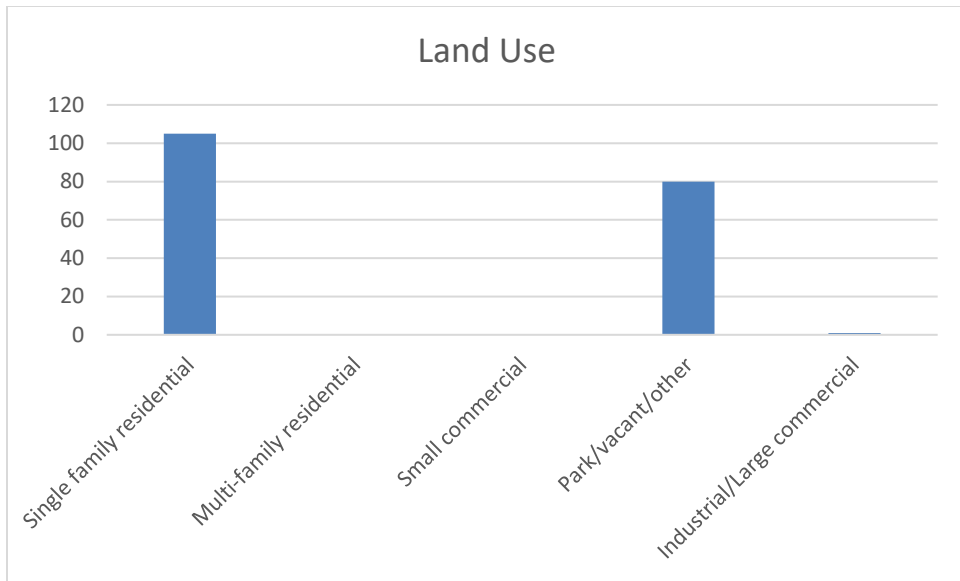


Figure 6: Land Use of city/park trees

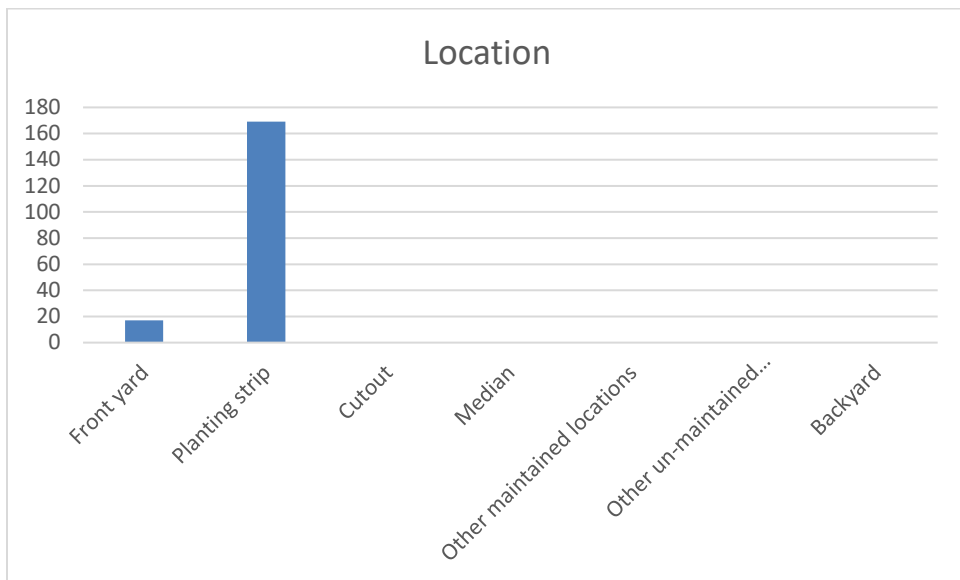


Figure 7: Location of city/park trees

Appendix B: ArcGIS Mapping

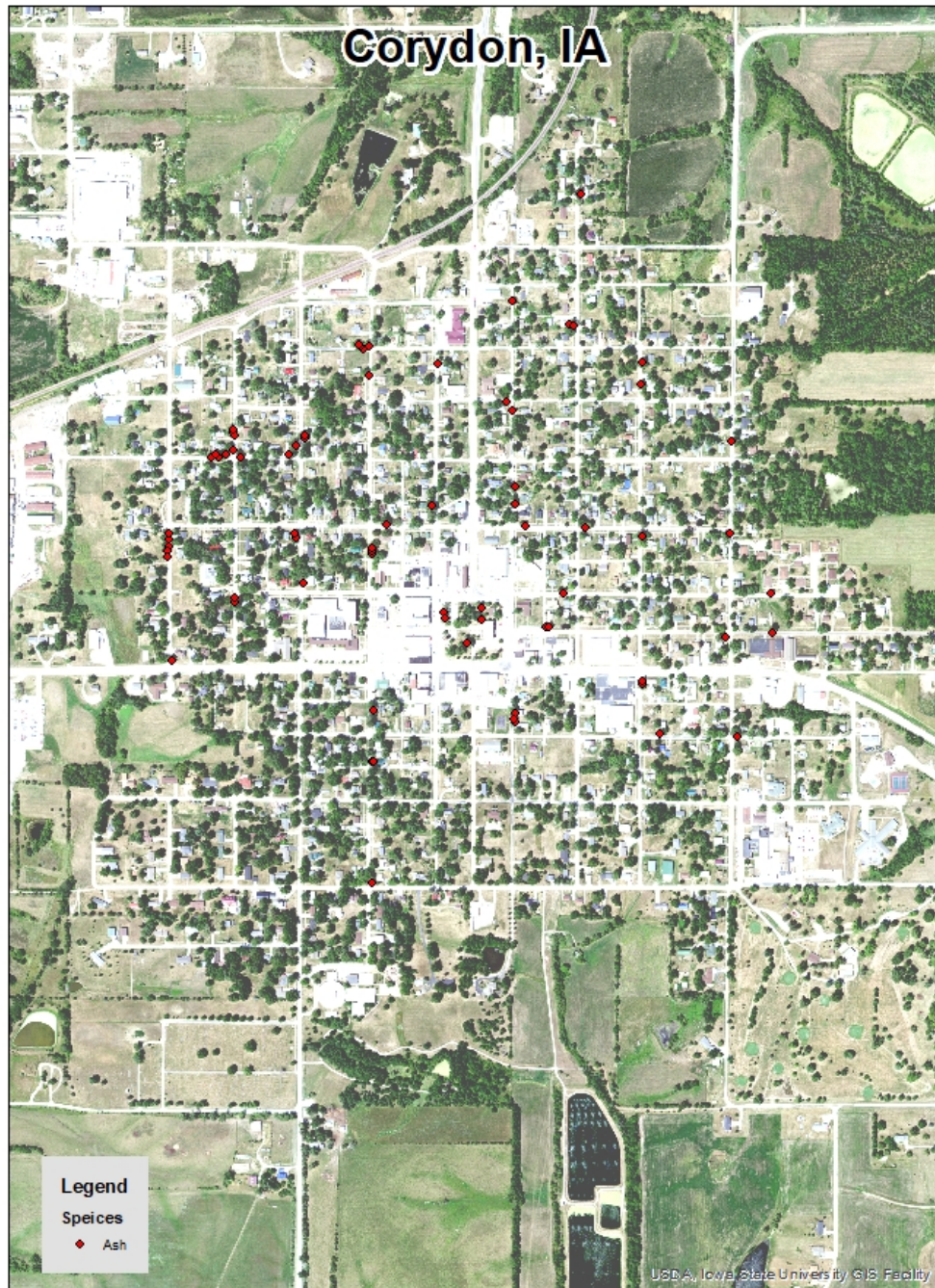


Figure 1: Location of Ash Trees

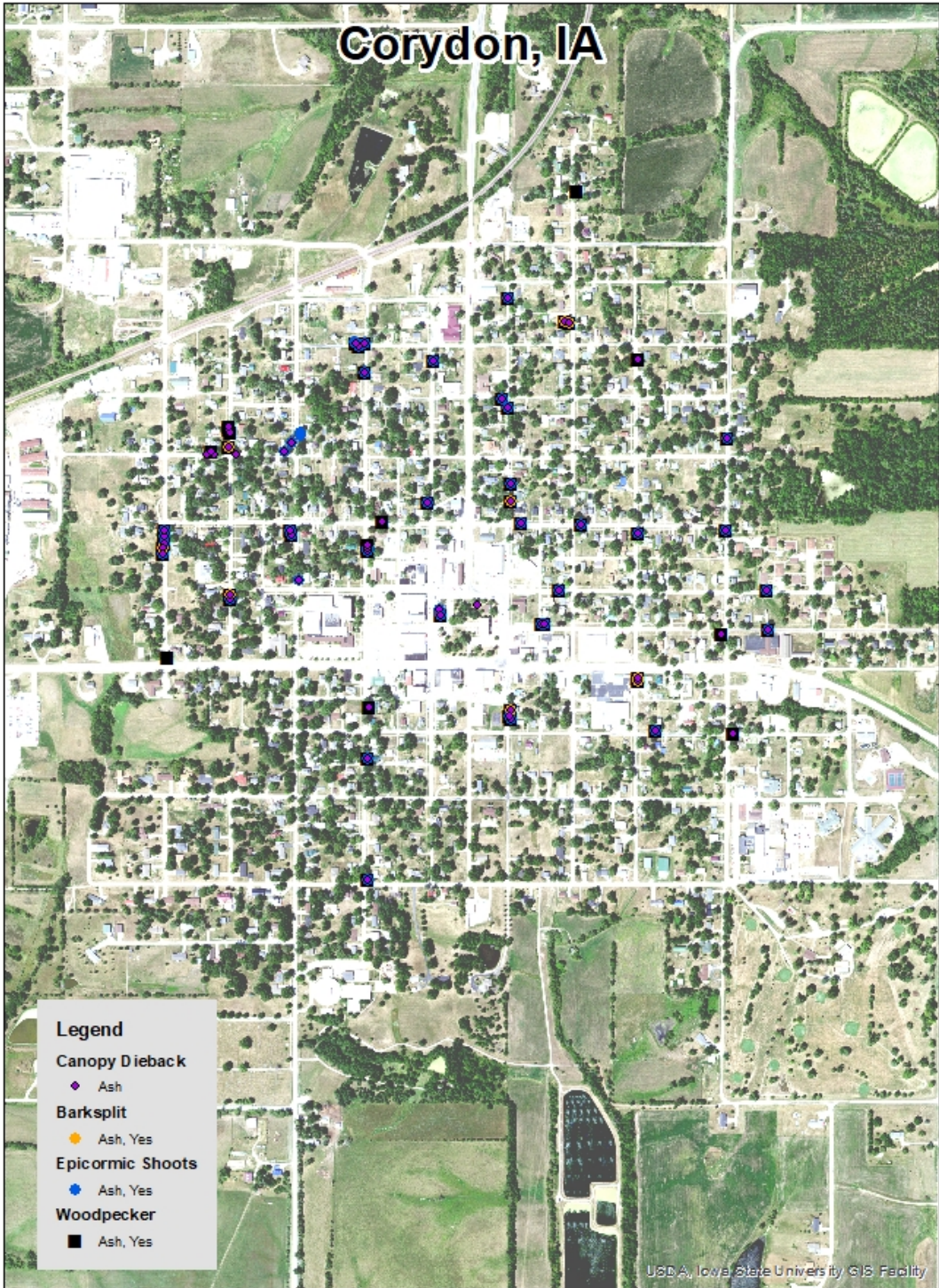


Figure 2: Location of EAB symptoms

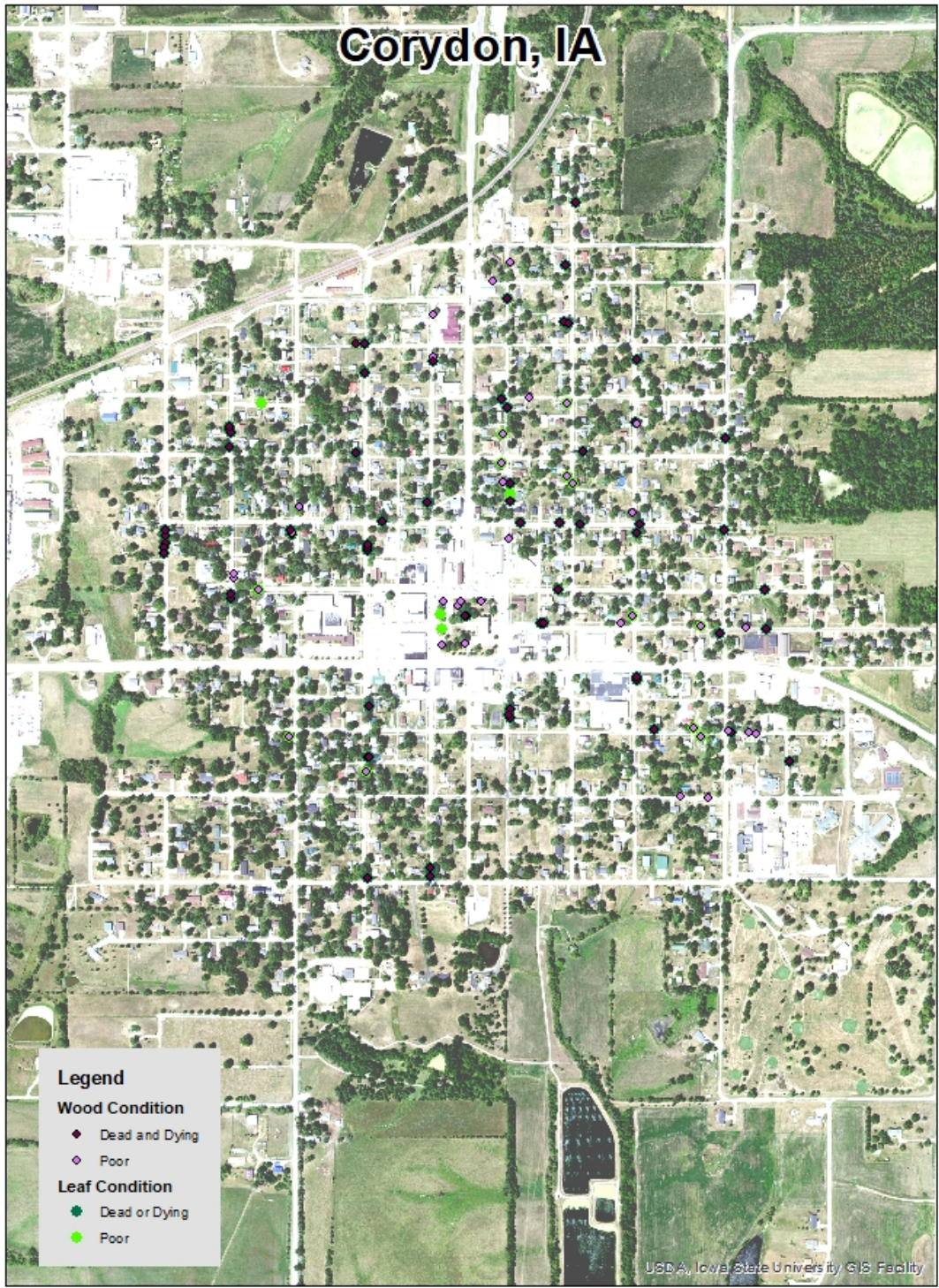


Figure 3: Location of Poor Condition Trees

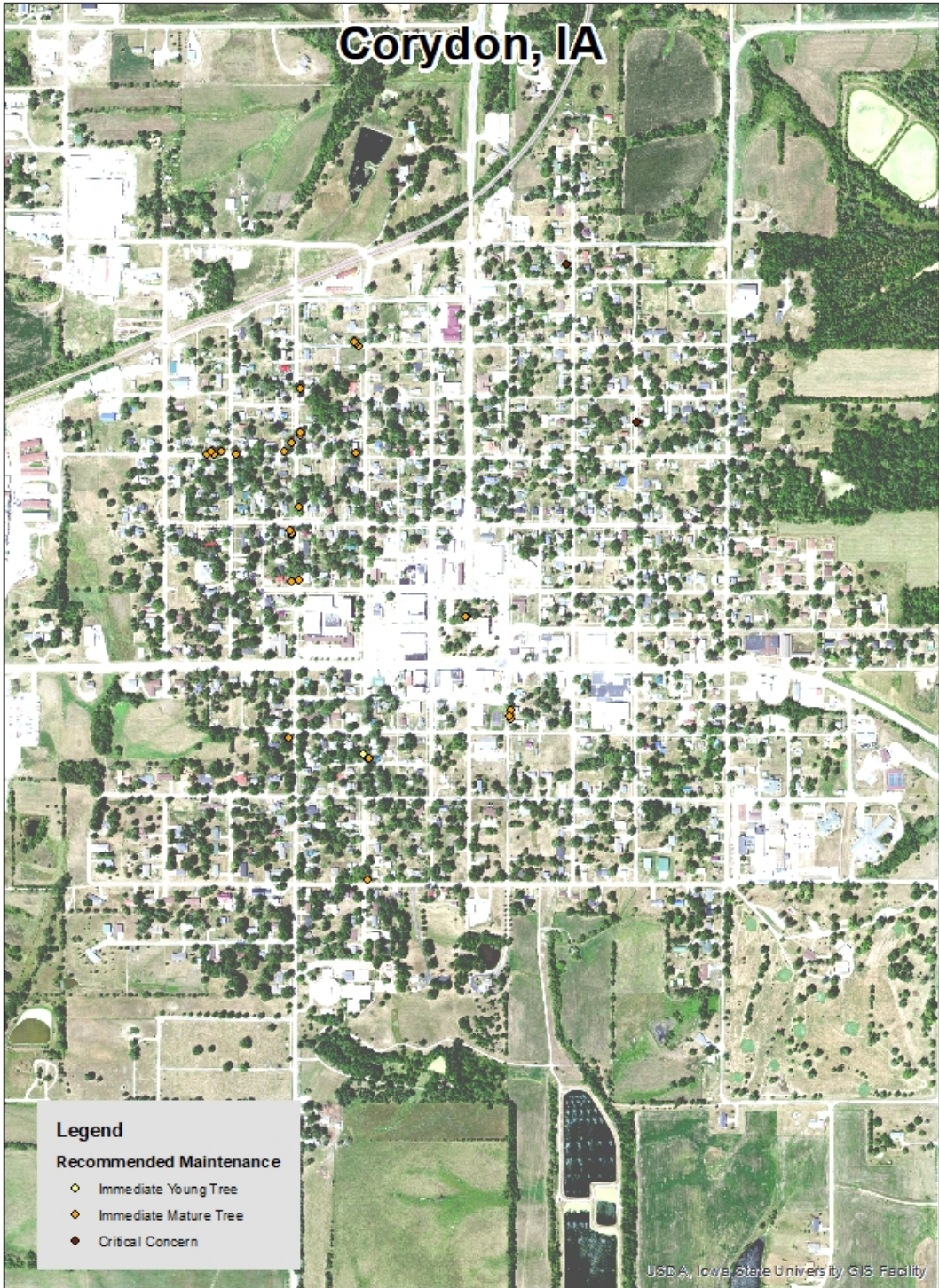


Figure 4: Location of Trees with Recommended Maintenance

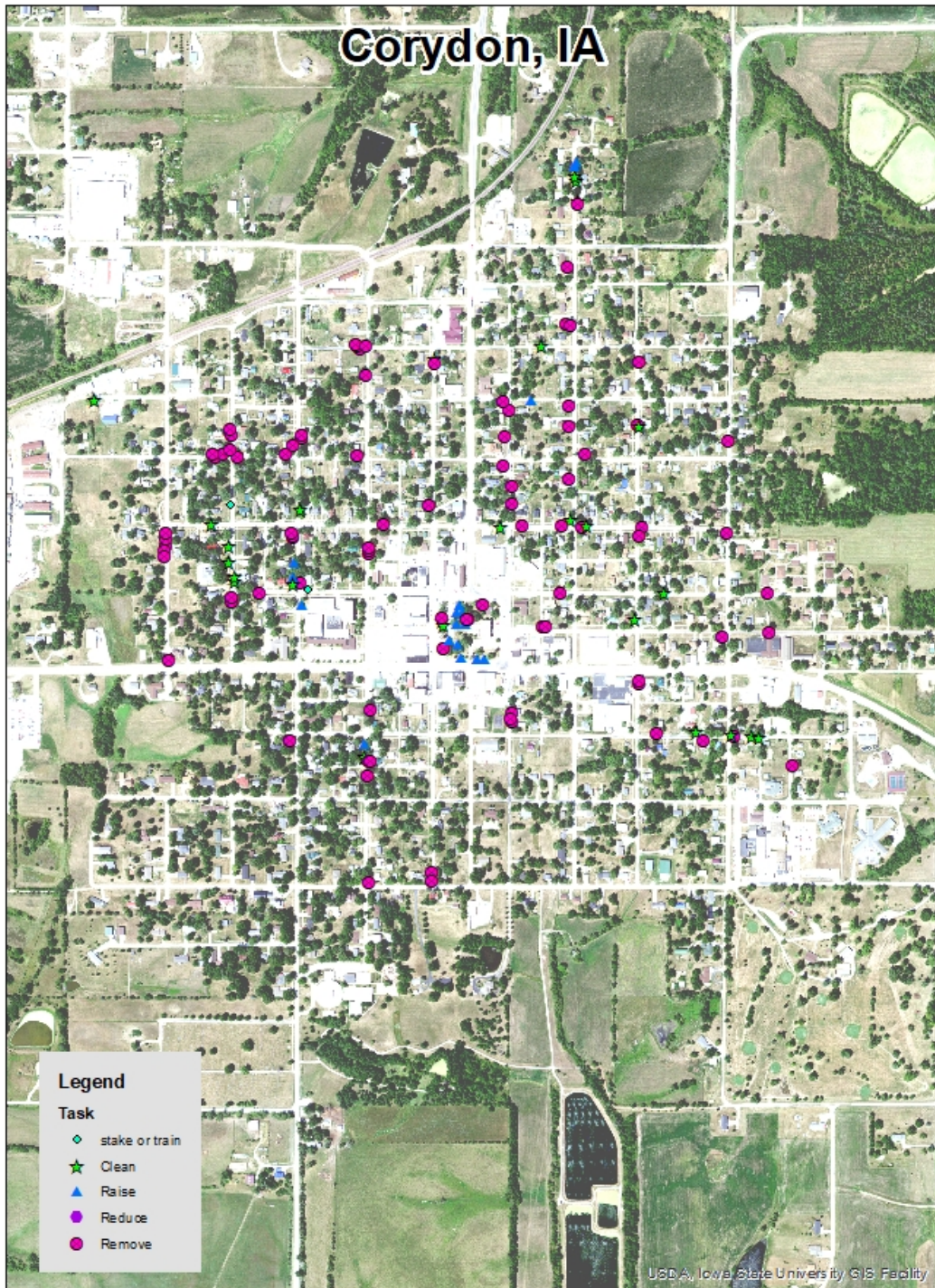


Figure 5: Maintenance Tasks *City ownership of the trees recommended for removal should be verified prior to any removal*

Appendix C: Corydon Tree Ordinances

Corydon

Title 12

12.12.030--12.12.040

places of this city, or construct, build or operate any extension to any telephone lines used and occupying the streets of this city without first submitting to the city council written plans and specifications showing in detail the kind of poles and other supports for the wires of said telephone lines, the manner in which the same is to be constructed and the places where the same shall be placed upon, along or under the streets, roads, avenues, alleys and public places of this city. (Ord. 114 §1, 1915).

12.12.030 Plans and specifications--Approval. Before any person, firm, association, company or corporation may build or construct telephone lines or any extension thereof as designated in Section 12.12.020, their plans and specifications submitted as provided in Section 12.12.010 must have the approval of the city council by written resolution duly passed by the city council. (Ord. 114 §2, 1915).

12.12.040 Discrimination prohibited in resolution adoption. In the adoption of any resolution approving plans and specifications submitted by any person, firm, association, company or corporation as mentioned in Section 12.12.030, no discrimination shall be made and the same regulation with reference to the approval of said resolution shall apply to all companies operating a telephone exchange within the city after the effective date of the ordinance codified in this chapter. (Ord. 114 §3, 1915).

Chapter 12.16

TREES, SHRUBBERY, AND VEGETATION ON PUBLIC PROPERTY*

Sections:

- 12.16.010 Definitions.
- 12.16.020 Abutting property owners responsible for care and maintenance.
- 12.16.021 Required notification to city clerk.
- 12.16.030 Notice declared.
- 12.16.040 Abatement procedure.
- 12.16.041 Arboricultural specifications and standards of practice.
- 12.16.050 City tree division.

* For statutory provisions on trees and shrubbery along highways, see Code 1977 Ch. 318.

moved and thereafter assess the cost thereof against the abutting or adjoining property owner as a special assessment against the real estate abutting and/or adjoining the street, right of way, or public property where said tree or shrubbery is situated. (Ord. 287 §1, 2001).

12.16.041 Arboricultural specifications and standards of practice. A. Planting. It is recommended that trees planted on property owned by the city shall have comparatively straight trunks, top and root characteristics of the species, show evidence of proper pruning and be free of insects, disease and mechanical injuries at the time of planting. Trees shall not be planted within thirty-five feet from any street intersection. Trees shall be planted inside the property lines and not between the sidewalk and the curb of a street unless special consent to plant outside the property lines is first obtained from the city tree division. In all newly platted additions, trees shall be planted inside the property lines rather than on the parking. Trees may be guyed or supported in an upright position according to accepted arboricultural practices. The guys or supports shall be fastened in such a way that they will not girdle or cause serious injury to the tree or endanger public safety.

B. Cotton-Bearing Trees. Cotton-bearing cottonwood trees and all other cotton-bearing poplar trees are declared to be a nuisance and are prohibited within the city limits. (Ord. 287 §1, 2001).

12.16.050 City tree division. There is established a city tree division of the city under the supervision and control of the city clerk. The clerk and the tree division members (usually the park superintendent and street superintendent) as appointed by the city council shall have the authority to perform and regulate the planting, maintenance and removal of trees in and on streets, right of ways, and other public property in order to ensure public safety and to preserve the symmetry of public places, i.e., Walden Park and Golf Course, Courtyard of Corydon Square and cemeteries. The clerk and the tree division shall promote public information on tree planting, removal and maintenance. The clerk and the tree division shall have the authority to supervise, inspect, and/or approve all work done concerning trees and shrubbery in accordance with the terms of this chapter and the municipal code of ordinances. (Ord. 287 §1, 2001).

12.16.010 Definitions. For purposes of this chapter, the terms set out below shall have the following definitions and meanings:

A. "Person" means any individual, firm, partnership, organization, trust, legal entity, any other organized group or any government.

B. "Street" means the entire width between property lines of every way or place of whatever nature when any part thereof is open to the use of the public, as a matter of right, for purposes of vehicular traffic and includes the city owned right of way.

C. "Tree" means any and all woody vegetation except where otherwise indicated. (Ord. 287 §1, 2001).

12.16.020 Abutting property owners responsible for care and maintenance. The property owner of property abutting or adjoining any city street or city owned right of way shall be responsible for the planting, care and maintenance of all trees and shrubbery planted in or along any street or right of way in the city. (Ord. 287 §1, 2001).

12.16.021 Required notification to city clerk. The city clerk shall be notified prior to the time that any tree is to be trimmed, if it is anticipated that said tree or any portion thereof will fall on or in a street, sidewalk or alley. No tree shall be felled into or onto any street, sidewalk or alley without having persons stationed in the street, sidewalk or alley to stop traffic for persons in both directions at the time the tree is being dropped, unless the street, sidewalk or alley has been duly barricaded in accordance with the municipal code of ordinances. Trees or branches which are felled or trimmed onto streets, sidewalks or alleys, or other public property, must be removed immediately. (Ord. 287 §1, 2001).

12.16.030 Nuisance declared. The city council shall have the power to declare any tree or shrubbery planted in any street, right of way, or on public property in the city and which are found to be dangerous, diseased, unsightly, and/or obnoxious to the public to be a nuisance and to abate the same as provided in Section 12.16.040. (Ord. 287 §1, 2001).

12.16.040 Abatement procedure. A. The city council shall cause a notice to be served upon an adjoining or abutting property owner to remove any tree or shrubbery declared to be a nuisance within thirty days following the receipt of such notice.

B. In the event such notice is not complied with by the property owner, the city council may order the tree or shrubbery declared to be dangerous, diseased, unsightly and/or obnoxious to the public and a nuisance, to be re-

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