2015 COMMUNITY TREE MANAGEMENT PLAN

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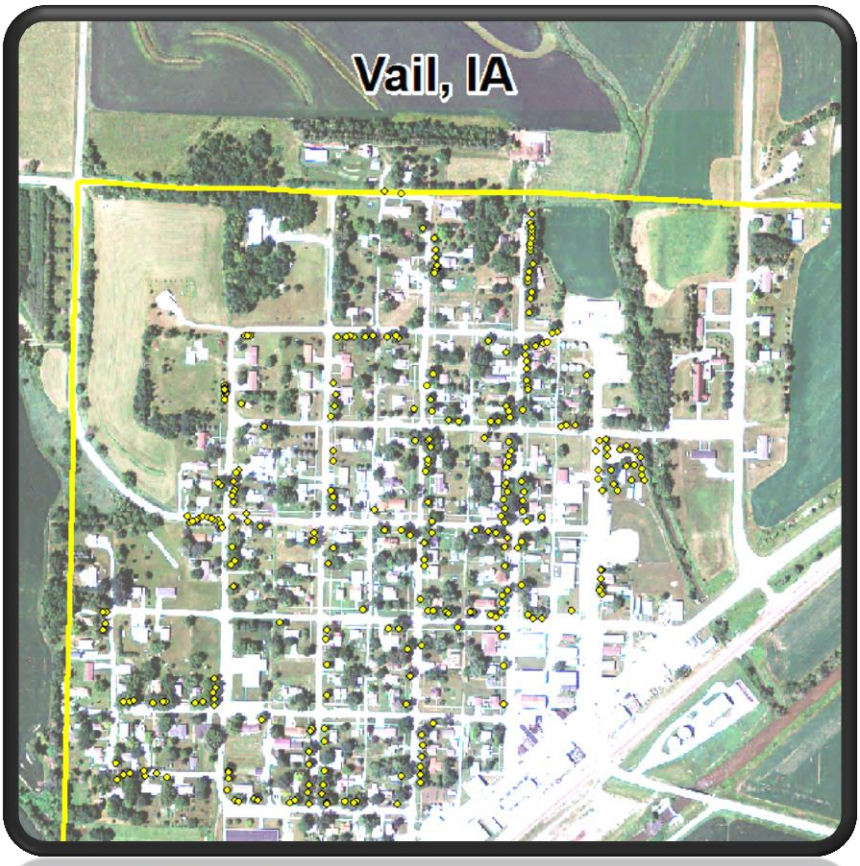

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Executive Summary

Overview

This plan was developed to assist the City of Vail with managing its urban forest, including budgeting and future planning. Trees can provide a multitude of benefits to the community, and sound management allows communities 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 possibility that 24% of your municipally managed trees will die once EAB becomes established in the community. With proper planning and management, the costs of removing dead and dying trees can be extended over years, mitigating public safety issues.

Inventory and Results

In 2015, a tree inventory was conducted using Global Positioning System (GPS) data collectors. The inventory was a complete inventory of street right of way and park trees. Below are some key findings of the 292 trees inventoried.

- Each of Vail's municipal trees provides $206 worth of benefits to the community each year
- There are over 27 species of trees
- The top three genus are: Maple – 26.4%, Ash – 24%, Walnut – 12.3%
- 11% of trees are in need of some type of management
- 22 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 findings:

- Of the 22 trees needing removal, thirteen (13) should be addressed as soon as possible in 2015, and the remaining 9 removals should be addressed in the next 2-3 years. Of the 22 removals, 11 trees are over 18" in diameter. *City ownership of the trees recommended for removal should be verified prior to any removal*
- 27 of the 70 ash trees are in need of follow up because they are displaying signs and symptoms associated with EAB.
- All trees should be pruned on a routine schedule- one third of the city every two years.
- To remove and replace all right of way and city park ash 70 total ash trees, 8 up for removal right now = 62) would cost an estimated $42,100 using contracted labor. Community tree grants can help offset the estimated $11,100 in replacement tree costs. Budgeting ~ $4,200 per year for contracted work or in-kind municipal time for the next 10 years should allow you to adequately be prepared for the repercussions of a potential EAB outbreak.

Introduction

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

Trees are an important component of Vail'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 Vail and future generations through good urban forestry management.

Good urban tree 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 Vail's urban forestry goals.

Inventory

In 2015, a tree inventory was conducted that included 100% of the city owned street right of way and 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. Your community tree information is available for your use on a web-based GIS program. This GIS website, in addition to the fact sheet on how to operate the website, can be found at: http://www.iowadnr.gov/Conservation/Forestry/Urban-Forestry/Community-Tree-Inventories.

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 of 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 292 city trees was entered into the USDA Forest service program Street Tree Resource Analysis Tool for Urban forestry Management (STRATUM), part of the i-Tree suite. The following are results from the i-Tree STRATUM analysis. Findings

Annual Benefits

Annual Energy Benefits

Trees conserve energy by shading buildings and blocking winds. Vail's trees reduce energy related costs by approximately $16,068 annually (Appendix A, Table 1). These savings are both in Electricity (71.9 MWh) and in Natural Gas (9,805.9Therms).

Annual Stormwater Benefits

Vail's trees intercept about 869,592 gallons of rainfall or snow melt each year (Appendix A, Table 2). This interception provides $23,566 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 mater (ozone). In Vail, it is estimated that trees remove 935.9 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 $2,634 (Appendix A, Table 3).

Annual Carbon Benefits

Carbon sequestration and storage reduce the amount of carbon in the atmosphere. In Vail, trees sequester about 194,894 lbs of carbon a year with an associated value of $1,462 (Appendix A, Table 5). In addition, the trees store 3,401,372lbs of carbon, with a yearly benefit of $25,510 (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. Vail receives $17,435 in annual social benefits from trees (Appendix A, Table 6).

Financial Summary of all Benefits

According to the USDA Forest Service i-Tree STRATUM analysis, Vail's trees provide $60,035 of benefits annually. Benefits of individual trees vary based on size, species, health and location,

but on average each of the 292 trees in Vail provide approximately $206 annually (Appendix A, Table 7).

Forest Structure

Species Distribution

Vail has over 27 different tree species along city streets and parks (Appendix A, Figure 1). The distribution of trees by genus is as follows:

Vail by Genus (% Total)		
Maple	77	26.4%
Ash	70	24.0%
Walnut	36	12.3%
Spruce	34	11.6%
Apple	20	6.8%
Juniper	10	3.4%
Honey Locust	8	2.7%
Oak	7	2.4%
Catalpa	6	2.1%
Linden	6	2.1%
Pine	4	1.4%
Hackberry	4	1.4%
Elm	2	0.7%
Broadleaf Deciduous	2	0.7%
Redbud	1	0.3%
Conifer	1	0.3%
Poplar	1	0.3%
Prunus (cherry or plum)	1	0.3%
Pear	1	0.3%
Birch	1	0.3%
Total	**292**	**100%**

Age Class

21% of Vail's trees fall between 24-30 inches in diameter. For age, a Bell Curve is preferred and should show the highest amount of trees around 18 inches in diameter at 4.5 ft. The highest quantity of trees are centered between 12 and 30 inches, with the highest population between 24 and 30", indicating an older than average population of trees. Continue to plant trees, as feasible, to continue balancing out the maturing tree population in your community forest.

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 Vail indicate that 95% of the trees were in good or fair health in 2015, with only 5% of the sampled trees in poor or dead/dying foliar health (Appendix A, Figure 3 & Appendix B, Figure 3). Similarly, 89% of Vail's trees are in good or fair health for

wood condition (appendix A, Figure 4 & Appendix B, Figure 3). Wood condition that is in poor health is about 11% of the population. This 11% 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 A, Figures 8 & 9).

TASK	**Number of Trees**	**% of Total trees**
Cleaning	58	19%
Removal	22	7.5 %
Treat pest/disease	4	1%
Reduce	3	1%
Raise	1	<1%

Canopy Cover

The estimated canopy cover for the entire town of Vail is approximately 44.53 acres (as calculated by the Iowa DNR). The canopy cover estimated by i-tree for the inventoried right of way and park trees is 8.5 acres (Appendix A, Figure 5). According to the 2010 census, Vail occupies 365.45 acres. Thus the canopy cover on city parks and right of way areas is about 2.3%, and over the entire community is 12.2%.

Land Use and Location

The majority of Vail's city and park trees are in planting strips and front yards 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	85%
Park/Vacant/Other	15%

Location	
Planting strip	55%
Front yard	45%

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

Vail has 13 critical concern trees that need immediate cleaning. These trees can be seen on the Location of Trees with Recommended Maintenance map (Appendix B, Figures 4 and 5). In addition, there are 6 trees identified as needing removal in the next 1-3 years, and 3 trees in the next 5 years (see Figure 4 – Mature Tree Immediate and mature tree routine map points). There are 4 mature trees that needs follow-up due to a forest health issue. Finally, there are 58 trees suggested for cleaning (22 need follow up ASAP, 26 trees of which need cleaning in the next 1-3 years, and 10 trees need cleaning in the next 5 years), and 1 tree is suggested for a crown raising, and 3 trees are recommended for reductions. These recommendations are summarized on the following table.

PRIORITY TASK	CRITICAL CONCERN	MATURE TREE IMMEDIATE	MATURE TREE ROUTINE	YOUNG TREE IMMEDIATE	YOUNG TREE ROUTINE	TOTAL
NONE:			192		12	**204**
STAKE/TRAIN						
CLEAN	22	26	10			**58**
RAISE		1				**1**
REDUCE				2	1	**3**
REMOVE	13	5	2	1	1	**22**
TREAT PEST/DISEASE		1	3			**4**
TOTAL	**35**	**33**	**207**	**14**	**14**	**292**

Poor tree species

After the removal of the critical concern and immediate concern trees, ash trees in poor health should be assessed for removal (Appendix B, Figure 1 & Appendix B, Figure 3). Of the 22 removals, 8 are ash trees. There are a total of 70 ash trees, and 27 trees have signs and symptoms that have been associated with EAB. In addition, there are 15 ash trees that are in poor health or dead/dying. EAB symptomatic trees should be examined as soon as possible. *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 five main maintenance issues to be addressed: routine pruning, crown cleaning, crown raising, crown reduction, and treat pest/disease. 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. Treat pest/disease trees showed indications of foliar or structural decline due to insect, disease, or rot. These trees should be investigated further by a certified arborist who can look into the integrity of the tree. It is recommended that all trees be pruned on a routine schedule every five to seven years.

Planting

It is suggested that for every tree removed, a replanting rate of 1.2 should be used, since survival rates will not be 100%. 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 canopy cover in Vail.

It is important to plant a diverse mix of species in Vail 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, Vail is heavily planted with Maple (26.4%) and Ash (24%) (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, Chinese elm, 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).

Sycamore, bur oak, chinkapin oak, white oak, red oak, Kentucky coffee tree, American linden (basswood), thornless honey locust, and hackberry are all suited to Vail's upland soils – and are presently underutilized. In addition, ironwood (*Ostrya virginiana*) and serviceberry (*Amalanchier arborea*) would make great alternatives to low growing trees for right of ways.

Recommended Species to plant in Western Iowa:

COMMON NAME	SCIENTIFIC NAME	CULTIVARS / SELECTIONS
LARGE SHADE TREES – Plant 35 feet apart and away from overhead power lines.		
White Oak	*Quercus alba*	
Bur Oak	*Quercus macrocarpa*	
Red Oak	*Quercus rubra*	
Black Oak	*Quercus veluntina*	
Chinkapin Oak	*Quercus muehlenbergii*	
American Basswood (Linden)	*Tilia Americana*	Boulevard, Front Yard, Legend, Redmond
Thornless Honeylocust	*Gleditsia triacanthos var. inermis*	Shademaster, Skyline
American elm	*Ulmus Americana*	Independence, New harmony, Valley Forge
Cottonwood (seedless) - ***Not recommended for planting near any homes or structures	*Populous deltoides*	Siouxland
Sycamore	*Plantanus occidentalis*	
Gingko	*Gingko biloba*	Male only – Shangri-La, Princeton sentry, Emperor
Kentucky coffee tree	*Gymnocladus diocius*	Expresso
Black Cherry	*Prunus serotina*	
Hackberry	*Celtis occidentalis*	Chicagoland, Prairie Pride, Windy City

LOW GROWING TREES (less than 30 feet tall) planted as close as 12 feet.

Eastern redbud	*Cercis Canadensis*	
Downy Hawthorn	*Crataegus mollis*	
Ironwood (hop hornbeam)	*Ostrya virginiana*	
American hornbeam	*Carpinus caroliniana*	
Serviceberry	*Amalanchier arborea*	Autumn brilliance, Cumulus, Princess Diana
Flowering crabapple	*Malus*	Prairiefire, Adams, Sentinel, Snowdrift
Red mulberry	*Morus rubra*	
American (wild) plum	*Prunus americana*	

EVERGREEN TREES – planted 25 feet apart and away from overhead power lines.

Eastern White Pine	*Pinus strobes*	
Jack pine	*Pinus banksiana*	
Juniper (Eastern red cedar)	*Juniperus virginiana*	
Norway spruce	*Picea abies*	
Concolor fir	*Abies concolor*	
Bald cypress	*Taxodium distichum*	
Arborvitae (Northern White cedar)	*Thuja occidentalis*	Techny, Brandon, Holmstrup

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 death and for the following signs and symptoms: canopy dieback, epicormic shoots, bark splitting, D-shaped borer exit holes, and wood pecker damage.

Emerald Ash Borer Plan

Ash Tree Removal

Tree removal should be prioritized with dead, dying, hazardous trees to be removed first (Appendix B, Figure 3). Next will be all ash in poor condition and displaying signs and symptoms of EAB (Appendix B, Figure 1 & Appendix B, Figure 2). *City ownership of the tree recommended for removal should be verified prior to any removal*

EAB Quarantines

EAB is an extremely destructive plant pest and it is responsible for the death and decline of over 25 million 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. The entire state of Iowa is under USDA quarantine for EAB.

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.

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? 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.

Canopy Replacement

As budget permits, all removed ash trees should be replaced. All trees should meet the restrictions in city ordinance 151.02 (Appendix C). The new plantings should 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 genus other than ash should 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 suggested that private property owners monitor the condition of their privately managed trees. There are numerous options available to them, including: removal and

replanting, treating with insecticides, and monitoring until an issue arises. These options are spelled out in: https://store.extension.iastate.edu/Product/Emerald-Ash-Borer-Management-Options. Check your city tree ordinance to be sure additional actions are not required for these private trees.

Treating for EAB

Many landowners will want to treat their ash trees with insecticides to prolong the life of their ash trees. This is only recommended by Iowa State University Extension when EAB has been found within 15 miles of the tree in question. The closest known population of EAB to Vail is in Boone.

Insecticidal injections or drenches can have serious environmental side effects when improperly applied. Some insecticides have application limits – like only treating 3 trees per acre, for instance. Encourage your residents to report ash treatments with the city or their neighbors – in order to prevent over-application of these insecticides. Please contact me if you have any questions. I would be more than happy to host an informational meeting on EAB and its effects on community ash trees.

My suggestion would be to start increasing the city tree budget for removals and replacements now. I would place all efforts and finances on replanting trees – and removing declining trees and EAB casualty trees as they arise. Your community should put heavy thought and consideration into your emerald ash borer plan. For instance, it may be more economical to budget for ash removals as they come, than it would be to treat each city-managed ash tree for the next 5 to 10 years.

Maintenance Plan and Budget

The following tasks are placed in order of yearly priority. These tasks should be fulfilled as your budget or personnel time allows. Critical concern trees should be treated immediately, and immediate mature tree tasks should be completed within 2-3 years (which is their expected lifetime before they become critical concern trees). Mature tree routine trees should be followed up on within 5 years. If you are interested in creating a scheduled maintenance and replanting plan, based on a set budget, please contact me. For now, a priority list looks like this:

2016: Clean the 22 trees identified for critical concern cleaning

Remove the 13 trees identified for critical concern removal

Consider organizing public meetings to discuss EAB

Discuss increasing tree removal and replacement time or financial budgets with city staff

Look into tree planting grants for community entities (Trees for Kids, Trees Forever grants)

2016-2018: Complete 6 mature and young tree immediate removals. Complete the remaining 26 immediate cleaning trees, raise the 1 mature tree immediate tree, prune the 2 young trees indicated for reduction, and follow-up with the 1 tree labeled as having a treat pest/disease issue.

Determine how much money can be budgeted over the next 10 years for potential forest health issues.

Start replanting trees that you have removed, as time and finances permit. 26 trees should be replanted to replace the 22 hazard trees removed. 74 trees will be needed to replace all 62 remaining ash if an EAB infestation occurs. Plan on budgeting or requesting $150/tree for replanting and maintenance costs.

Monitor for suspicious ash trees.

2018-2020:

Complete remaining 2 mature tree removals, complete remaining young tree removal, complete 1 remaining young tree reduction, complete the 10 remaining mature cleanings, and follow-up on pest/disease issues on 3 trees.

Consider implementing a routine trimming (cleaning) regimen for the remaining city trees. Ideally, routine trimming should be done to 1/3 of the city's trees every 2 years. In other words, all public and right of way trees should be trimmed once every 6 years.

Also – consider evaluating Vail's street trees again for hazards by 2020 (if not before).

Monitor for tree health issues – all species.

<u>Proposed Budget Increase</u>

Emerald Ash Borer could potentially kill all ash trees in Vail within 4 years of its arrival. To remove and replace all 70 inventoried ash trees (8 ash trees are recommended for immediate hazard removal), you would need to budget an estimated $42,100 (calculated using $500/tree removal price and $150/tree replacement price). If municipal crews usually take down right of way and park trees, the removal costs will undoubtedly be much less than this figure. However, if you rely on contractors to remove and replant your city trees – you will want to be budgeting for at least $4,200 for the next 10 years.

It is recommended that Vail 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. The

Trees for Kids Grant will be a great option for your community to use for tree planting projects on public lands. Trees Forever may also have community improvement grants that can assist with replanting expenses.

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Appendix A: i-Tree Data

Table 1: Annual Energy Benefits

Vail

Annual Energy Benefits of Public Trees

12/7/2015

Species	Total Electricity (MWh)	Electricity ($)	Total Natural Gas (Therms)	Natural Gas ($)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Green ash	20.7	1,571	2,819.0	2,763	4,333	(N/A)	24.0	28.8	61.90
Silver maple	19.0	1,440	2,494.2	2,444	3,884	(N/A)	18.8	25.8	70.62
Black walnut	9.9	748	1,382.5	1,355	2,103	(N/A)	12.3	14.0	58.41
Blue spruce	2.4	179	337.2	330	509	(N/A)	9.2	3.4	18.87
Apple	2.4	180	370.1	363	543	(N/A)	6.8	3.6	27.13
Maple	2.0	153	264.4	259	412	(N/A)	4.1	2.7	34.32
Eastern red cedar	1.1	85	164.4	161	246	(N/A)	3.4	1.6	24.57
Honeylocust	2.9	218	374.2	367	585	(N/A)	2.7	3.9	73.09
Spruce	0.5	35	71.6	70	106	(N/A)	2.4	0.7	15.09
Norway maple	1.1	87	163.1	160	247	(N/A)	2.4	1.6	35.26
Northern catalpa	2.7	203	356.8	350	552	(N/A)	2.1	3.7	92.06
Littleleaf linden	0.6	43	72.8	71	114	(N/A)	1.4	0.8	28.48
Northern red oak	0.8	61	110.3	108	169	(N/A)	1.4	1.1	42.32
Austrian pine	0.5	42	68.8	67	109	(N/A)	1.4	0.7	27.25
Northern hackberry	1.6	122	229.5	225	347	(N/A)	1.4	2.3	86.67
Pin oak	0.6	46	83.4	82	128	(N/A)	1.0	0.8	42.51
Siberian elm	0.8	63	108.8	107	170	(N/A)	0.7	1.1	84.75
American basswood	0.7	54	102.8	101	155	(N/A)	0.7	1.0	77.27
Sugar maple	0.5	34	59.1	58	92	(N/A)	0.7	0.6	46.06
Cottonwood	0.3	25	46.9	46	71	(N/A)	0.3	0.5	70.91
Cherry plum	0.0	0	0.6	1	1	(N/A)	0.3	0.0	0.87
Conifer Evergreen Medium	0.1	10	15.2	15	25	(N/A)	0.3	0.2	24.51
Red maple	0.1	8	16.5	16	25	(N/A)	0.3	0.2	24.58
Broadleaf Deciduous Small	0.0	0	0.6	1	1	(N/A)	0.3	0.0	0.87
Eastern redbud	0.0	2	3.8	4	5	(N/A)	0.3	0.0	5.40
Callery pear	0.0	0	0.8	1	1	(N/A)	0.3	0.0	1.10
Birch	0.2	18	29.5	29	47	(N/A)	0.3	0.3	46.78
Broadleaf Deciduous Large	0.4	33	59.0	58	91	(N/A)	0.3	0.6	91.02
Total	71.9	5,458	9,805.9	9,610	15,068	(N/A)	100.0	100.0	51.60

Table 2: Annual Stormwater Benefits

Vail

Annual Stormwater Benefits of Public Trees

12/7/2015

Species	Total rainfall interception (Gal)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Green ash	241,575	6,547	(N/A)	24.0	27.8	93.52
Silver maple	276,205	7,485	(N/A)	18.8	31.8	136.09
Black walnut	106,001	2,873	(N/A)	12.3	12.2	79.80
Blue spruce	30,859	836	(N/A)	9.2	3.5	30.97
Apple	10,340	280	(N/A)	6.8	1.2	14.01
Maple	13,171	357	(N/A)	4.1	1.5	29.75
Eastern red cedar	16,345	443	(N/A)	3.4	1.9	44.30
Honeylocust	35,699	967	(N/A)	2.7	4.1	120.93
Spruce	5,112	139	(N/A)	2.4	0.6	19.79
Norway maple	8,503	230	(N/A)	2.4	1.0	32.92
Northern catalpa	41,685	1,130	(N/A)	2.1	4.8	188.28
Littleleaf linden	3,440	93	(N/A)	1.4	0.4	23.31
Northern red oak	7,783	211	(N/A)	1.4	0.9	52.73
Austrian pine	7,558	205	(N/A)	1.4	0.9	51.20
Northern hackberry	17,208	466	(N/A)	1.4	2.0	116.58
Pin oak	6,101	165	(N/A)	1.0	0.7	55.11
Siberian elm	10,710	290	(N/A)	0.7	1.2	145.12
American basswood	9,218	250	(N/A)	0.7	1.1	124.90
Sugar maple	7,223	196	(N/A)	0.7	0.8	97.87
Cottonwood	3,943	107	(N/A)	0.3	0.5	106.85
Cherry plum	7	0	(N/A)	0.3	0.0	0.20
Conifer Evergreen Medium	1,544	42	(N/A)	0.3	0.2	41.85
Red maple	625	17	(N/A)	0.3	0.1	16.95
Broadleaf Deciduous Small	7	0	(N/A)	0.3	0.0	0.20
Eastern redbud	69	2	(N/A)	0.3	0.0	1.86
Callery pear	12	0	(N/A)	0.3	0.0	0.33
Birch	1,409	38	(N/A)	0.3	0.2	38.19
Broadleaf Deciduous Large	7,239	196	(N/A)	0.3	0.8	196.17
Citywide total	869,592	23,566	(N/A)	100.0	100.0	80.71

Table 3: Annual Air Quality Benefits

Vail

Annual Air Quality Benefits of Public Trees

12/7/2015

Species	Deposition (lb)				Total Depos. ($)	Avoided (lb)				Total Avoided ($)	BVOC Emissions (lb)	BVOC Emissions ($)	Total (lb)	Total ($) Standard Error	% of Total Trees	Avg. $/tree
	O_3	NO_2	PM_{10}	SO_2		NO_2	PM_{10}	VOC	SO_2							
Green ash	31.6	5.0	14.8	1.4	167	98.7	14.4	13.7	93.8	615	0.0	0	273.4	782 (N/A)	24.0	11.18
Silver maple	49.3	8.3	24.1	2.2	265	89.4	13.1	12.5	85.8	559	-25.9	-97	258.7	727 (N/A)	18.8	13.23
Black walnut	12.4	2.0	6.0	0.6	66	47.3	6.9	6.5	44.7	294	0.0	0	126.3	360 (N/A)	12.3	10.01
Blue spruce	3.7	0.7	3.2	0.5	25	11.4	1.6	1.6	10.7	70	-10.7	-40	22.6	55 (N/A)	9.2	2.04
Apple	3.1	0.5	1.5	0.1	16	11.7	1.7	1.6	10.7	72	0.0	0	30.9	88 (N/A)	6.8	4.42
Maple	2.5	0.4	1.2	0.1	14	9.5	1.4	1.3	9.1	59	-0.9	-3	24.7	70 (N/A)	4.1	5.79
Eastern red cedar	3.4	0.7	2.7	0.4	22	5.4	0.8	0.7	5.0	33	-9.0	-34	10.2	22 (N/A)	3.4	2.19
Honeylocust	7.1	1.2	3.2	0.3	38	13.5	2.0	1.9	13.0	85	-5.7	-21	36.5	101 (N/A)	2.7	12.59
Spruce	0.5	0.1	0.5	0.1	3	2.3	0.3	0.3	2.1	14	-1.5	-6	4.6	12 (N/A)	2.4	1.67
Norway maple	1.5	0.3	0.8	0.1	8	5.5	0.8	0.8	5.2	34	-0.4	-1	14.5	41 (N/A)	2.4	5.86
Northern catalpa	7.4	1.2	3.3	0.3	39	12.7	1.9	1.8	12.1	79	0.0	0	40.6	118 (N/A)	2.1	19.65
Littleleaf linden	0.4	0.1	0.2	0.0	2	2.6	0.4	0.4	2.5	17	-0.2	-1	6.4	18 (N/A)	1.4	4.49
Northern red oak	1.6	0.3	0.8	0.1	9	3.8	0.6	0.5	3.7	24	-2.3	-9	9.0	24 (N/A)	1.4	5.99
Austrian pine	1.1	0.2	0.9	0.1	7	2.6	0.4	0.4	2.5	16	-2.8	-11	5.3	13 (N/A)	1.4	3.21
Northern hackberry	2.8	0.5	1.4	0.1	15	7.8	1.1	1.1	7.3	48	0.0	0	22.1	64 (N/A)	1.4	15.88
Pin oak	1.0	0.2	0.5	0.0	6	2.9	0.4	0.4	2.7	18	-1.9	-7	6.3	16 (N/A)	1.0	5.44
Siberian elm	2.2	0.4	1.0	0.1	12	3.9	0.6	0.5	3.8	24	0.0	0	12.5	36 (N/A)	0.7	18.04
American basswood	1.4	0.2	0.6	0.1	7	3.4	0.5	0.5	3.2	21	-1.1	-4	8.8	24 (N/A)	0.7	12.18
Sugar maple	1.1	0.2	0.5	0.0	6	2.1	0.3	0.3	2.0	13	-0.9	-3	5.8	16 (N/A)	0.7	8.02
Cottonwood	0.5	0.1	0.2	0.0	3	1.6	0.2	0.2	1.5	10	0.0	0	4.4	12 (N/A)	0.3	12.48
Cherry plum	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)	0.3	0.11
Conifer Evergreen Medium	0.2	0.0	0.2	0.0	1	0.6	0.1	0.1	0.6	4	-0.6	-2	1.2	3 (N/A)	0.3	2.89
Red maple	0.1	0.0	0.0	0.0	0	0.5	0.1	0.1	0.5	3	0.0	0	1.3	4 (N/A)	0.3	3.64
Broadleaf Deciduous Small	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)	0.3	0.11
Eastern redbud	0.0	0.0	0.0	0.0	0	0.1	0.0	0.0	0.1	1	0.0	0	0.3	1 (N/A)	0.3	0.71
Callery pear	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)	0.3	0.14
Birch	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)	0.3	7.92
Broadleaf Deciduous Large	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)	0.3	19.04
Citywide total	136.2	22.8	68.4	6.8	739	342.7	49.9	47.6	325.7	2,136	-64.2	-241	935.9	2,634 (N/A)	100.0	9.02

Table 4: Annual Carbon Stored

Vail

Stored CO2 Benefits of Public Trees

12/7/2015

Species	Total Stored CO2 (lbs)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Green ash	1,036,987	7,777	(N/A)	24.0	30.5	111.11
Silver maple	1,157,767	8,683	(N/A)	18.8	34.0	157.88
Black walnut	398,109	2,986	(N/A)	12.3	11.7	82.94
Blue spruce	21,944	165	(N/A)	9.2	0.6	6.10
Apple	49,284	370	(N/A)	6.8	1.4	18.48
Maple	29,264	219	(N/A)	4.1	0.9	18.29
Eastern red cedar	11,021	83	(N/A)	3.4	0.3	8.27
Honeylocust	92,457	693	(N/A)	2.7	2.7	86.68
Spruce	2,710	20	(N/A)	2.4	0.1	2.90
Norway maple	25,049	188	(N/A)	2.4	0.7	26.84
Northern catalpa	255,683	1,918	(N/A)	2.1	7.5	319.60
Littleleaf linden	9,239	69	(N/A)	1.4	0.3	17.32
Northern red oak	35,098	263	(N/A)	1.4	1.0	65.81
Austrian pine	8,248	62	(N/A)	1.4	0.2	15.47
Northern hackberry	43,109	323	(N/A)	1.4	1.3	80.83
Pin oak	27,001	203	(N/A)	1.0	0.8	67.50
Siberian elm	53,509	401	(N/A)	0.7	1.6	200.66
American basswood	49,903	374	(N/A)	0.7	1.5	187.14
Sugar maple	33,893	254	(N/A)	0.7	1.0	127.10
Cottonwood	15,773	118	(N/A)	0.3	0.5	118.30
Cherry plum	14	0	(N/A)	0.3	0.0	0.10
Conifer Evergreen M	1,118	8	(N/A)	0.3	0.0	8.39
Red maple	1,101	8	(N/A)	0.3	0.0	8.26
Broadleaf Deciduous	14	0	(N/A)	0.3	0.0	0.10
Eastern redbud	178	1	(N/A)	0.3	0.0	1.33
Callery pear	17	0	(N/A)	0.3	0.0	0.13
Birch	3,624	27	(N/A)	0.3	0.1	27.18
Broadleaf Deciduous	39,259	294	(N/A)	0.3	1.2	294.44
Citywide total	3,401,372	25,510	(N/A)	100.0	100.0	87.36

Table 5: Annual Carbon Sequestered

Vail

Annual CO Benefits of Public Trees

12/7/2015

Species	Sequestered (lb)	Sequestered ($)	Decomposition Release (lb)	Maintenance Release (lb)	Total Released ($)	Avoided (lb)	Avoided ($)	Net Total (lb)	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Green ash	48,160	361	-4,978	-217	-2	0	0	42,966	322	(N/A)	24.0	24.2	4.60
Silver maple	82,509	619	-5,557	-213	-2	0	0	76,739	576	(N/A)	18.8	43.2	10.46
Black walnut	24,251	182	-1,911	-103	-1	0	0	22,237	167	(N/A)	12.3	12.5	4.63
Blue spruce	1,762	13	-105	-42	0	0	0	1,615	12	(N/A)	9.2	0.9	0.45
Apple	4,275	32	-237	-32	0	0	0	4,006	30	(N/A)	6.8	2.3	1.50
Maple	3,886	29	-140	-18	0	0	0	3,728	28	(N/A)	4.1	2.1	2.33
Eastern red cedar	343	3	-53	-20	0	0	0	270	2	(N/A)	3.4	0.2	0.20
Honeylocust	6,880	52	-444	-22	0	0	0	6,414	48	(N/A)	2.7	3.6	6.01
Spruce	431	3	-13	-9	0	0	0	409	3	(N/A)	2.4	0.2	0.44
Norway maple	1,909	14	-121	-12	0	0	0	1,777	13	(N/A)	2.4	1.0	1.90
Northern catalpa	4,654	35	-1,227	-31	0	0	0	3,395	25	(N/A)	2.1	1.9	4.24
Littleleaf linden	1,475	11	-44	-6	0	0	0	1,424	11	(N/A)	1.4	0.8	2.67
Northern red oak	1,168	9	-168	-10	0	0	0	990	7	(N/A)	1.4	0.6	1.86
Austrian pine	272	2	-40	-9	0	0	0	223	2	(N/A)	1.4	0.1	0.42
Northern hackberry	2,231	17	-207	-16	0	0	0	2,009	15	(N/A)	1.4	1.1	3.77
Pin oak	2,522	19	-130	-7	0	0	0	2,386	18	(N/A)	1.0	1.3	5.97
Siberian elm	1,623	12	-257	-9	0	0	0	1,357	10	(N/A)	0.7	0.8	5.09
American basswood	2,730	20	-240	-9	0	0	0	2,481	19	(N/A)	0.7	1.4	9.31
Sugar maple	1,340	10	-163	-6	0	0	0	1,171	9	(N/A)	0.7	0.7	4.39
Cottonwood	857	6	-76	-4	0	0	0	778	6	(N/A)	0.3	0.4	5.83
Cherry plum	9	0	0	0	0	0	0	8	0	(N/A)	0.3	0.0	0.06
Conifer Evergreen Mediun	91	1	-5	-2	0	0	0	83	1	(N/A)	0.3	0.0	0.63
Red maple	165	1	-5	-1	0	0	0	159	1	(N/A)	0.3	0.1	1.19
Broadleaf Deciduous Smal	9	0	0	0	0	0	0	8	0	(N/A)	0.3	0.0	0.06
Eastern redbud	38	0	-1	-1	0	0	0	37	0	(N/A)	0.3	0.0	0.27
Callery pear	5	0	0	0	0	0	0	5	0	(N/A)	0.3	0.0	0.04
Birch	386	3	-17	-2	0	0	0	367	3	(N/A)	0.3	0.2	2.75
Broadleaf Deciduous Larg	912	7	-188	-5	0	0	0	719	5	(N/A)	0.3	0.4	5.39
Citywide total	194,894	1,462	-16,328	-804	-6	0	0	177,762	1,333	(N/A)	100.0	100.0	4.57

Table 6: Annual Social and Aesthetic Benefits

Vail

Annual Aesthetic/Other Benefits of Public Trees

12/7/2015

Species	Total ($)	Standard Error	% of Total Trees	% of Total $	Avg. $/tree
Green ash	3,855	(N/A)	24.0	22.1	55.08
Silver maple	6,235	(N/A)	18.8	35.8	113.37
Black walnut	2,023	(N/A)	12.3	11.6	56.20
Blue spruce	581	(N/A)	9.2	3.3	21.52
Apple	250	(N/A)	6.8	1.4	12.48
Maple	559	(N/A)	4.1	3.2	46.58
Eastern red cedar	109	(N/A)	3.4	0.6	10.95
Honeylocust	1,750	(N/A)	2.7	10.0	218.78
Spruce	125	(N/A)	2.4	0.7	17.84
Norway maple	201	(N/A)	2.4	1.2	28.76
Northern catalpa	299	(N/A)	2.1	1.7	49.79
Littleleaf linden	173	(N/A)	1.4	1.0	43.15
Northern red oak	88	(N/A)	1.4	0.5	22.00
Austrian pine	76	(N/A)	1.4	0.4	18.92
Northern hackberry	272	(N/A)	1.4	1.6	68.11
Pin oak	203	(N/A)	1.0	1.2	67.77
Siberian elm	100	(N/A)	0.7	0.6	50.02
American basswood	188	(N/A)	0.7	1.1	94.13
Sugar maple	124	(N/A)	0.7	0.7	61.81
Cottonwood	66	(N/A)	0.3	0.4	65.59
Cherry plum	0	(N/A)	0.3	0.0	0.03
Conifer Evergreen Medium	25	(N/A)	0.3	0.1	25.23
Red maple	30	(N/A)	0.3	0.2	29.84
Broadleaf Deciduous Small	0	(N/A)	0.3	0.0	0.03
Eastern redbud	2	(N/A)	0.3	0.0	2.06
Callery pear	3	(N/A)	0.3	0.0	2.74
Birch	39	(N/A)	0.3	0.2	39.16
Broadleaf Deciduous Large	58	(N/A)	0.3	0.3	58.34
Citywide total	17,435	(N/A)	100.0	100.0	59.71

Table 7: Summary of Benefits in Dollars

Vail

Annual Benefits of Public Trees by Species ($/tree)

12/7/2015

Species	Energy	CO_2	Air Quality	Stormwater	Aesthetic/Other	Total ($)	Standar
Green ash	61.90	4.60	11.18	93.52	55.08	226.29	(N/A)
Silver maple	70.62	10.46	13.23	136.09	113.37	343.77	(N/A)
Black walnut	58.41	4.63	10.01	79.80	56.20	209.04	(N/A)
Blue spruce	18.87	0.45	2.04	30.97	21.52	73.84	(N/A)
Apple	27.13	1.50	4.42	14.01	12.48	59.54	(N/A)
Maple	34.32	2.33	5.79	29.75	46.58	118.76	(N/A)
Eastern red cedar	24.57	0.20	2.19	44.30	10.95	82.20	(N/A)
Honeylocust	73.09	6.01	12.59	120.93	218.78	431.40	(N/A)
Spruce	15.09	0.44	1.67	19.79	17.84	54.82	(N/A)
Norway maple	35.26	1.90	5.86	32.92	28.76	104.70	(N/A)
Northern catalpa	92.06	4.24	19.65	188.28	49.79	354.03	(N/A)
Littleleaf linden	28.48	2.67	4.49	23.31	43.15	102.09	(N/A)
Northern red oak	42.32	1.86	5.99	52.73	22.00	124.90	(N/A)
Austrian pine	27.25	0.42	3.21	51.20	18.92	101.00	(N/A)
Northern hackberry	86.67	3.77	15.88	116.58	68.11	291.01	(N/A)
Pin oak	42.51	5.97	5.44	55.11	67.77	176.79	(N/A)
Siberian elm	84.75	5.09	18.04	145.12	50.02	303.02	(N/A)
American basswood	77.27	9.31	12.18	124.90	94.13	317.78	(N/A)
Sugar maple	46.06	4.39	8.02	97.87	61.81	218.15	(N/A)
Cottonwood	70.91	5.83	12.48	106.85	65.59	261.66	(N/A)
Cherry plum	0.87	0.06	0.11	0.20	0.03	1.27	(N/A)
Conifer Evergreen Me	24.51	0.63	2.89	41.85	25.23	95.11	(N/A)
Red maple	24.58	1.19	3.64	16.95	29.84	76.19	(N/A)
Broadleaf Deciduous S	0.87	0.06	0.11	0.20	0.03	1.27	(N/A)
Eastern redbud	5.40	0.27	0.71	1.86	2.06	10.31	(N/A)
Callery pear	1.10	0.04	0.14	0.33	2.74	4.34	(N/A)
Birch	46.78	2.75	7.92	38.19	39.16	134.79	(N/A)
Broadleaf Deciduous I	91.02	5.39	19.04	196.17	58.34	369.96	(N/A)
Citywide Total	51.60	4.57	9.02	80.71	59.71	205.60	(N/A)

Table 8. Recommended Maintenance by Diameter class.

Vail, IA

Recommended Maintenance for Public Trees (None)

12/7/2015

DBH Class (in)

Zone	0-3	3-6	6-12	12-18	18-24	24-30	30-36	36-42	>42	Total
1	0	0	0	0	0	0	0	0	0	0
Citywide total	0	0	0	0	0	0	0	0	0	0

DBH Class (in)

Maintenance Type	0-3	3-6	6-12	12-18	18-24	24-30	30-36	36-42	>42	Total	% of Total Population
None	0	0	0	0	0	0	0	0	0	0	0.00
Young tree (routine)	6	5	3	0	0	0	0	0	0	14	4.79
Young tree (immediate)	1	1	1	0	0	0	0	0	0	3	1.03
Mature tree (routine)	0	0	49	52	29	38	15	15	9	207	70.89
Mature tree (immediate)	0	0	1	4	15	7	3	0	3	33	11.30
Critical concern (public safety)	0	0	0	2	2	15	8	7	1	35	11.99
Citywide total	7	6	54	58	46	60	26	22	13	292	100.00

Table 9. Maintenance Task by Diameter Class.

Vail, IA

Priority Task Summary for Public Trees (None)

12/7/2015

DBH Class (in)

Zone	0-3	3-6	6-12	12-18	18-24	24-30	30-36	36-42	>42	Total
1	5	5	49	49	27	33	14	14	8	204
Citywide total	5	5	49	49	27	33	14	14	8	204

DBH Class (in)

Maintenance Type	0-3	3-6	6-12	12-18	18-24	24-30	30-36	36-42	>42	Total	% of Total Population
None	5	5	49	49	27	33	14	14	8	204	69.86
Stake/Train	0	0	0	0	0	0	0	0	0	0	0.00
Clean	0	0	0	6	16	18	9	8	1	58	19.86
Raise	0	0	0	0	0	0	0	0	1	1	0.34
Reduce	2	0	1	0	0	0	0	0	0	3	1.03
Remove	0	1	2	2	3	8	3	0	3	22	7.53
Treat pest/disease	0	0	2	1	0	1	0	0	0	4	1.37
Citywide total	7	6	54	58	46	60	26	22	13	292	100.00

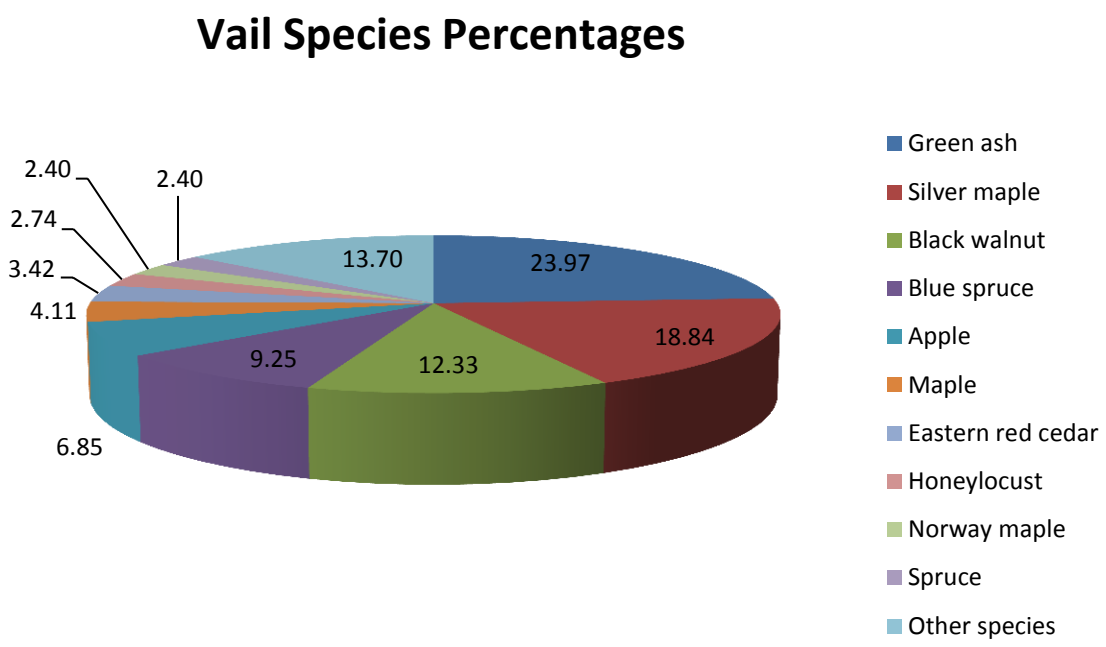

Figure 1: Species Distribution

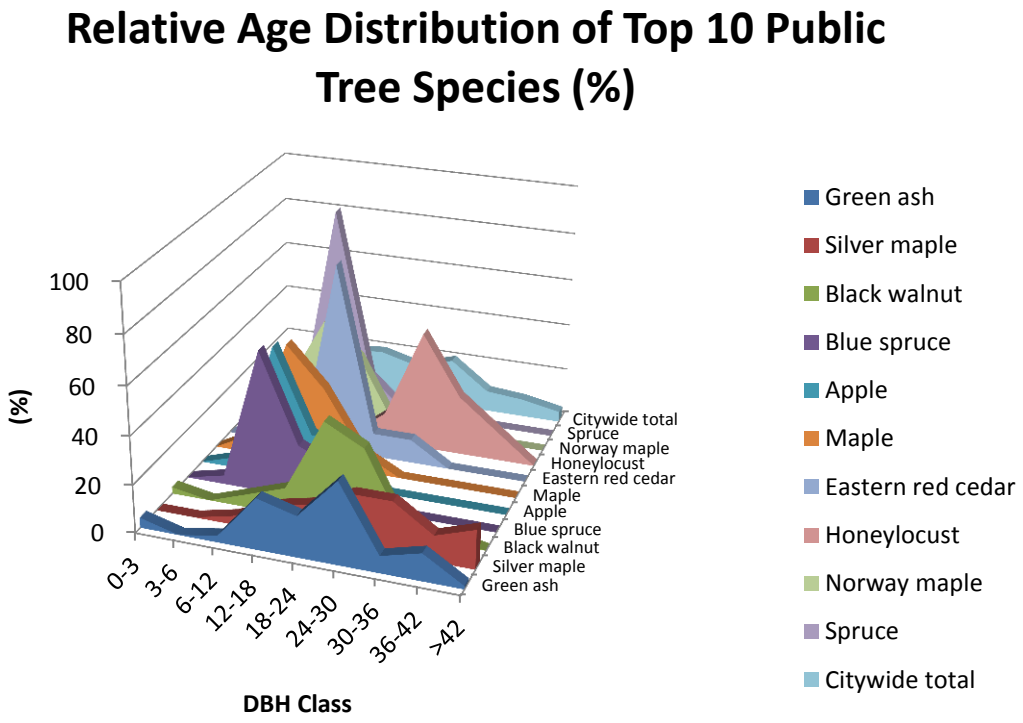

Figure 2: Relative Age Class

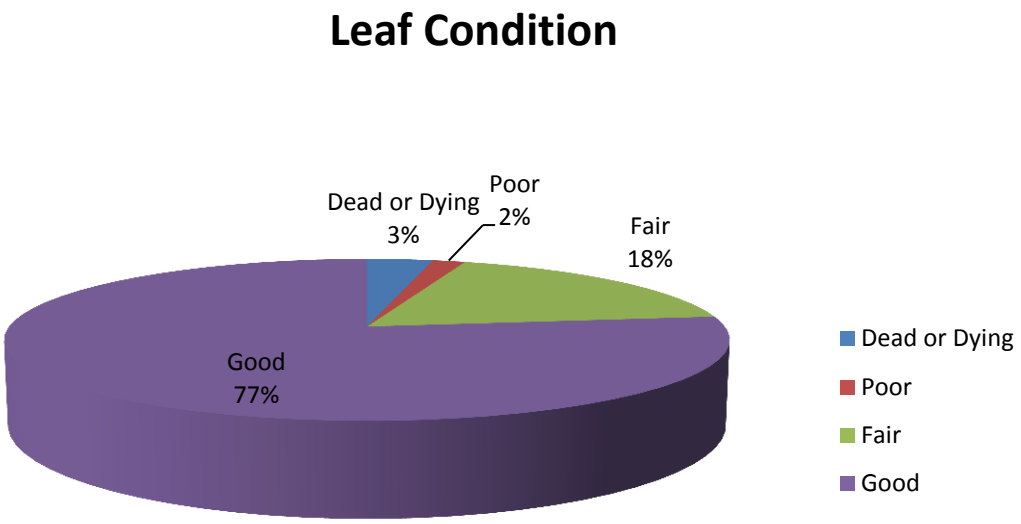

Figure 3: Foliage Condition

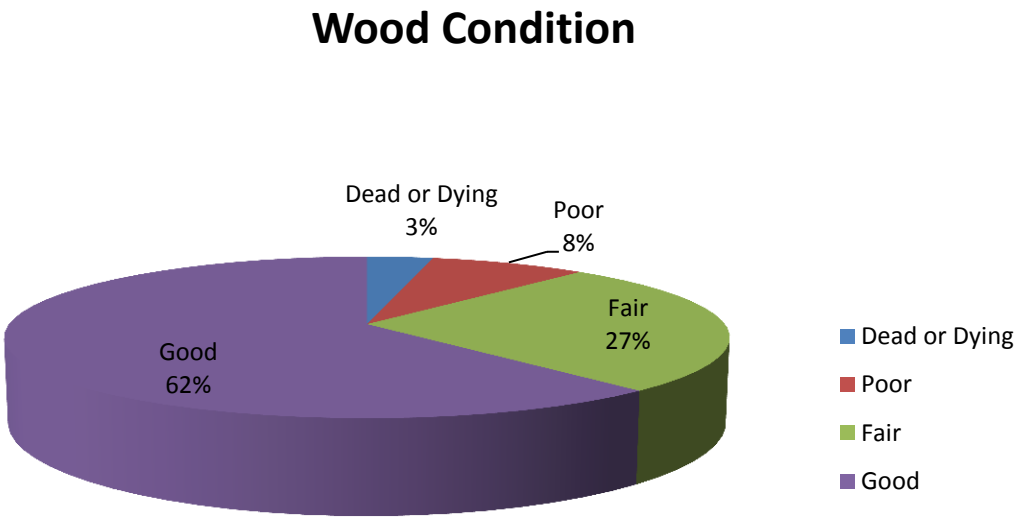

Figure 4: Wood Condition

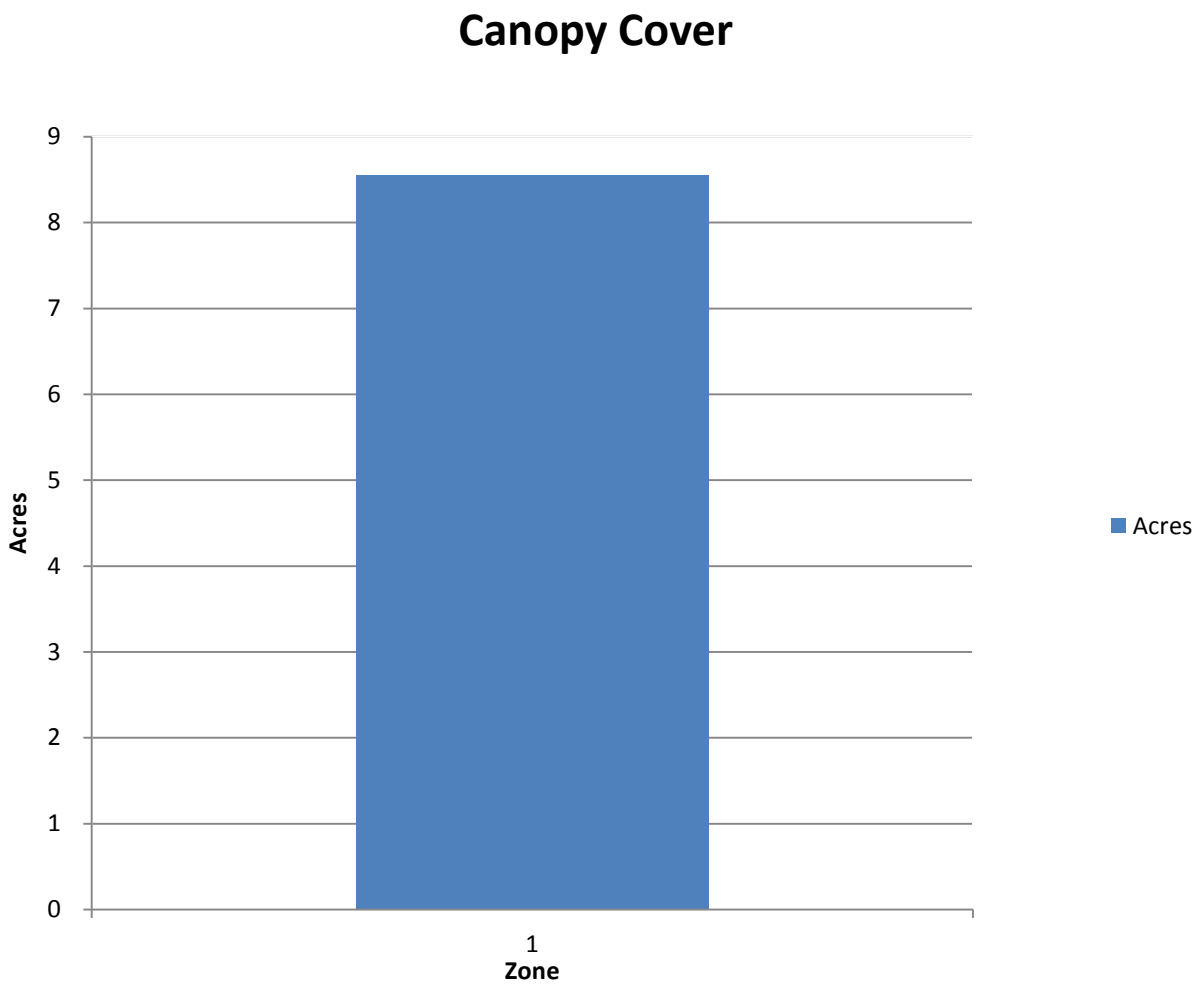

Figure 5: Canopy Cover in Acres

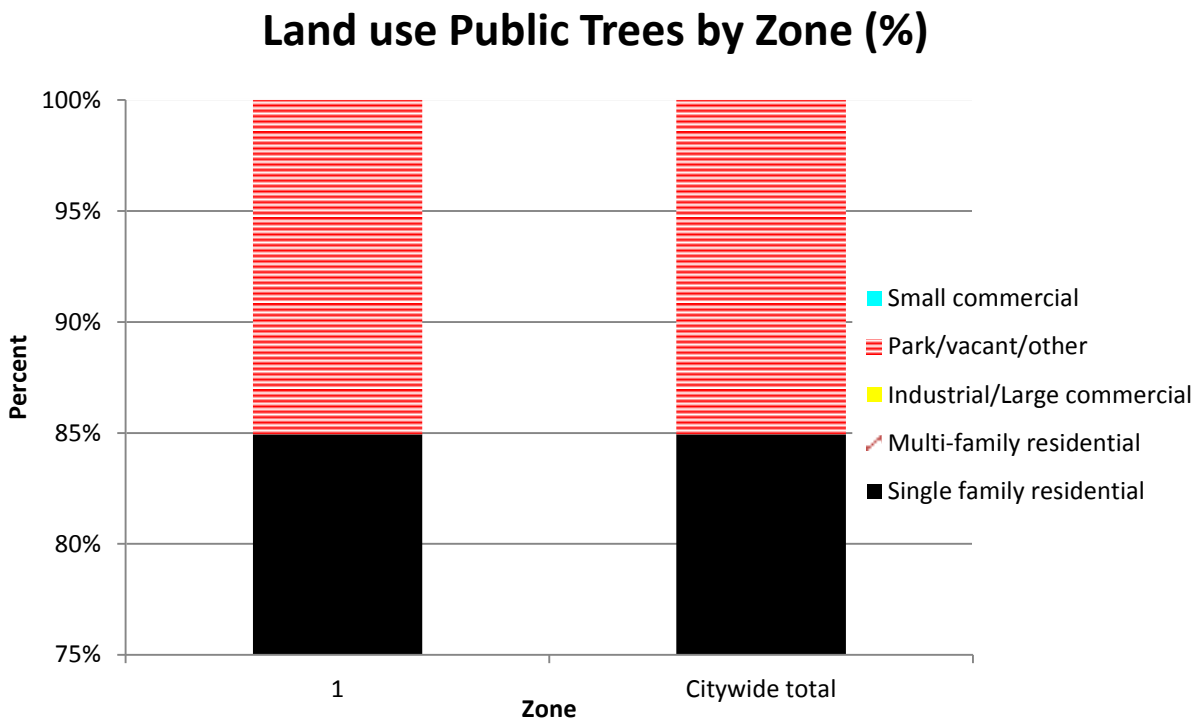

Figure 6: Land Use of city/park trees

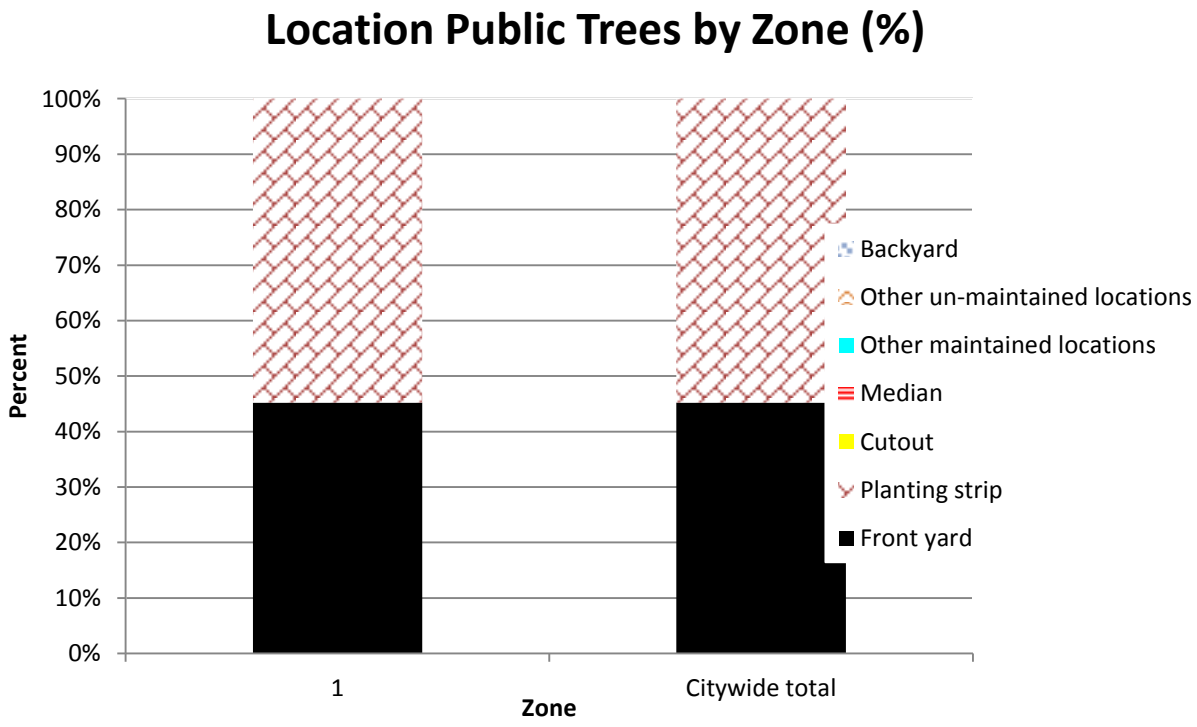

Figure 7: Location of city/park trees

Appendix B: ArcGIS Mapping

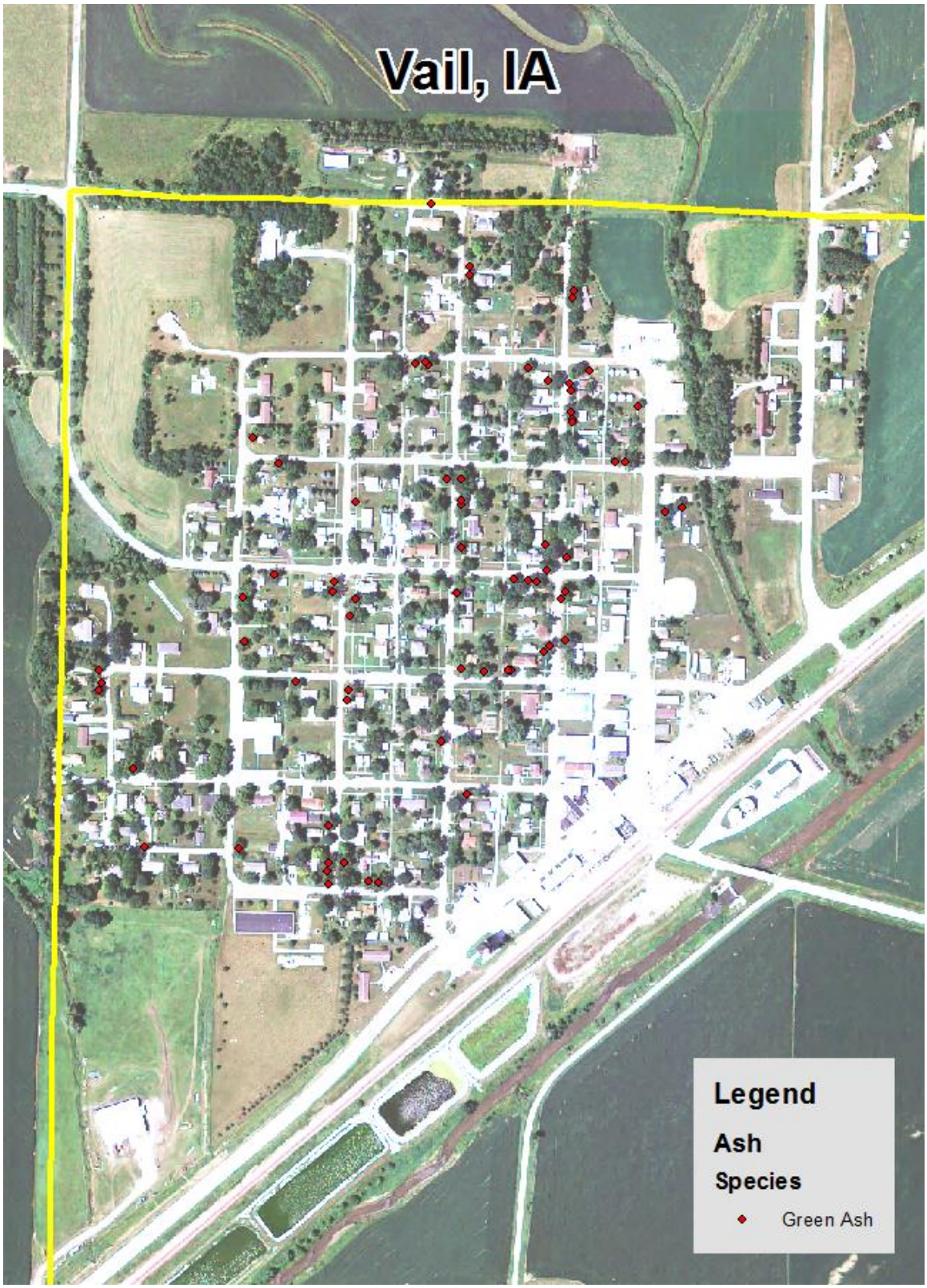

Figure 1: Location of Ash Trees

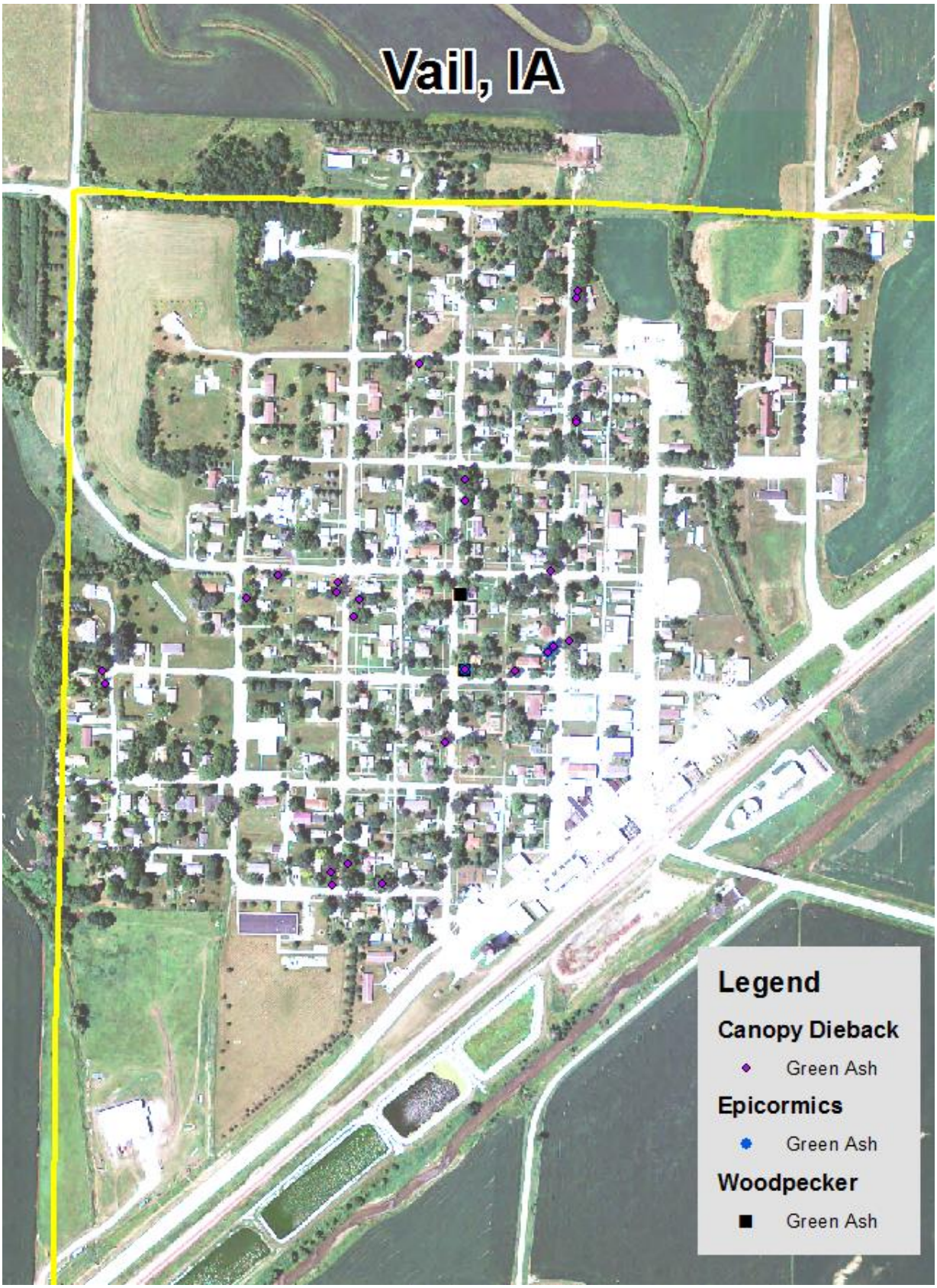

Figure 2: Location of EAB symptoms

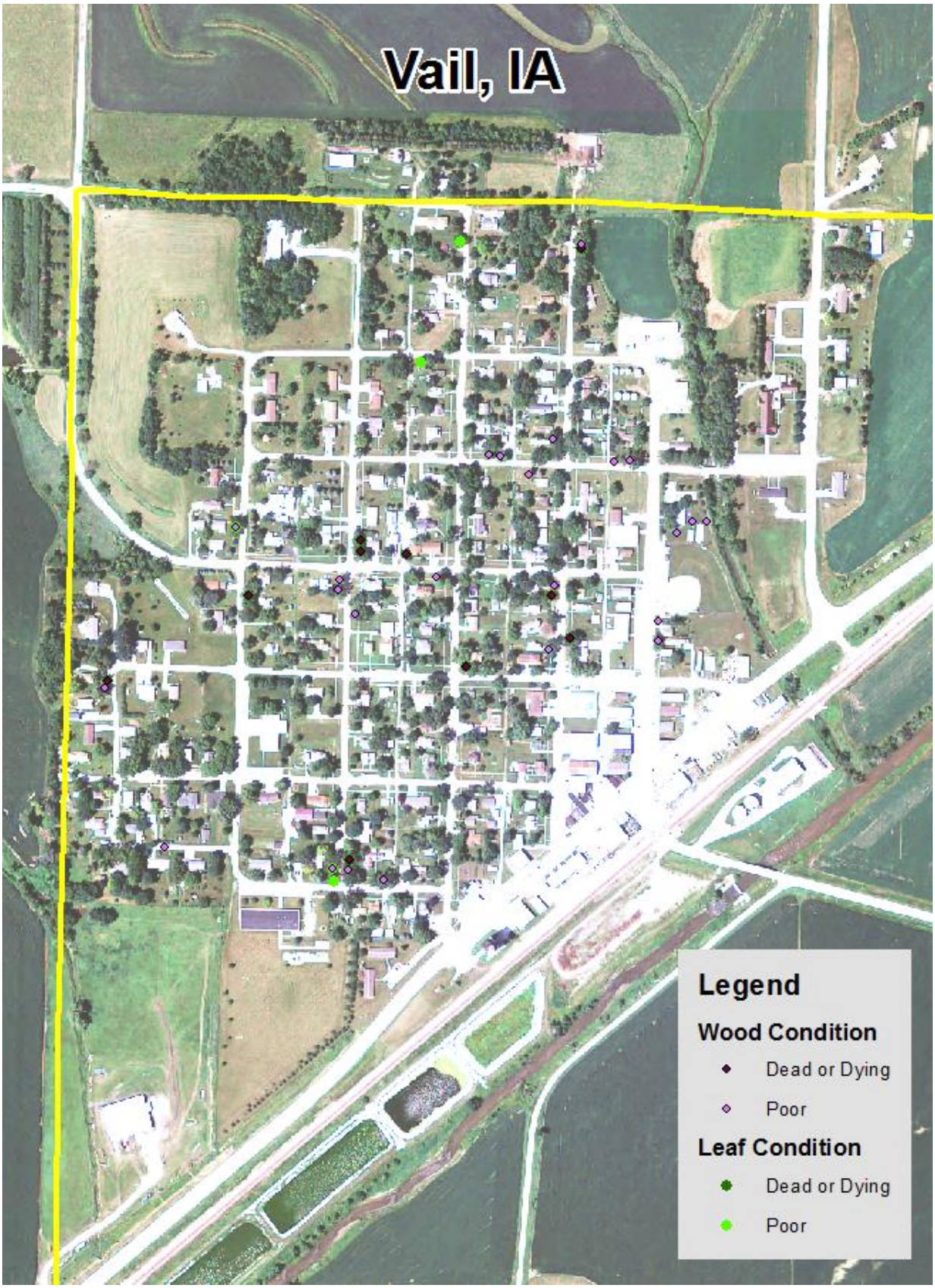

Figure 3: Location of Poor Condition Trees

Figure 4: Location of Trees with Recommended Maintenance

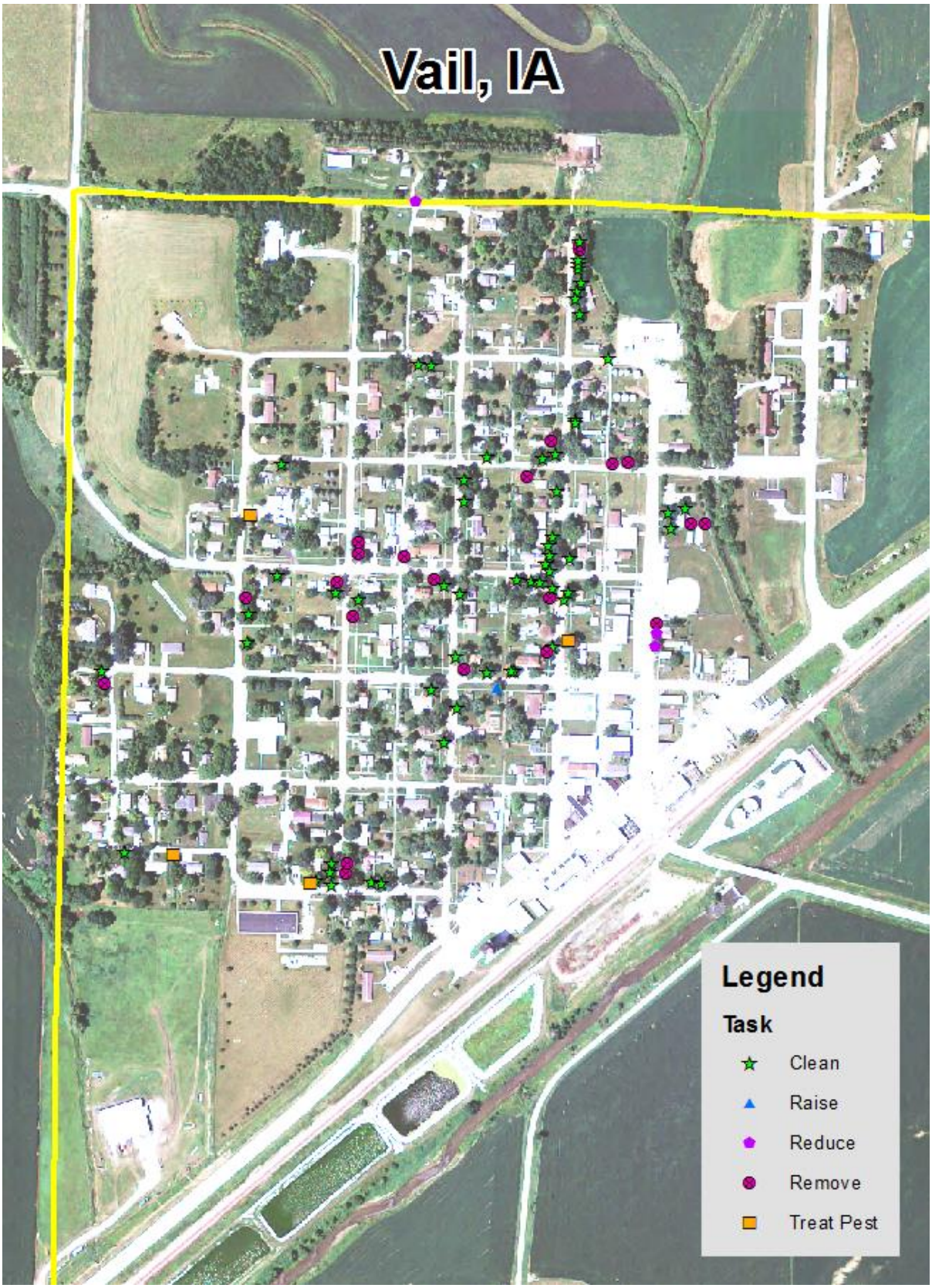

Figure 5: Maintenance Tasks *City ownership of the trees recommended for removal should be verified prior to any removal*

Appendix C: Example Tree Ordinance

CHAPTER 151
TREES AND GRASS

151.01 DEFINITION. For use in this chapter, "boulevard" means that part of the street, avenue or highway in the City not covered by sidewalk and lying between the lot line and the curb line; or, on unpaved streets, that part of the street, avenue or highway lying between the lot line and that portion of the street usually traveled by vehicular traffic.

151.02 PLANTING RESTRICTIONS. No tree shall be planted in any boulevard or street except in accordance with the following:
1. Alignment. All tress planted in any street shall be planted in the boulevard midway between the outer line of the sidewalk and the curb. In the event a curb line is not established, trees shall be planted on a line ten (10) feet from the property line.
2. Spacing. Trees shall not be planted on any boulevard which is less than nine (9) feet in width, or contains less than eighty-one (81) square feet of exposed soil surface per tree. Trees shall not be planted closer than twenty (20) feet from street intersections (property lines extended) and ten (10) feet from driveways. If it is at all possible trees should be planted inside the property lines and not between the sidewalk and the curb.
3. Prohibited Trees. No person shall plant in any street any fruit-bearing tree or any tree of the kinds commonly known as cottonwood, poplar, box elder, Chinese elm, evergreen, willow or black walnut.

151.03 DUTY TO TRIM TREES. The owner or agent of the abutting property shall keep the trees on, or overhanging the street, trimmed so that all branches will be at least eighteen (18) feet above the surface of a street, twenty (20) feet above the surface of a primary highway, and eight (8) feet above the sidewalks. If the abutting property owner fails to trim the trees, the City may serve notice on the abutting property owner requiring that such action be taken within five (5) days. If such action is not taken within that time, the
City may perform the required action and assess the costs against the abutting property for collection in the same manner as a property tax.
(Code of Iowa, Sec. 364.12[2c, d, & e])

151.04 TRIMMING TREES TO BE SUPERVISED. Except as allowed in Section 151.03, it is unlawful for any person to trim or cut any tree in a street or public place unless the work is done under the supervision of the City.

151.05 DISEASE CONTROL. Any dead, diseased or damaged tree or shrub which may harbor serious insect or disease pests or disease injurious to other trees is hereby declared to be a nuisance.

151.06 INSPECTION AND REMOVAL. The Council shall inspect or cause to be inspected any trees or shrubs in the City reported or suspected to be infected with or damaged by any disease or insect or disease pests, and such trees and shrubs shall be subject to removal as follows:
1. City Property. If it is determined that any such condition exists on any public property, including the strip between the curb and the lot line of private property, the Council may cause such condition to be corrected by treatment or removal. The Council may also order the removal of any trees on the streets of the City which interfere with the making of improvements or with travel thereon.
2. Private Property. If it is determined with reasonable certainty that any such condition exists 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.
(Code of Iowa, Sec. 364.12[3b & h])

151.07 CUTTING OR MOWING OF GRASS.
1. Duty to Cut and Mow Lawns and Lots. The owner of any property shall cut and mow all lawns and lots so that such growth shall be less than four (4) inches at all times.
2. Cutting and Mowing by City. If a property owner refuses or fails to cut and mow lawns and lots within forty-eight (48) hours after being delivered a notice from the City to perform such action, the Council may require said work to be done and the cost and expenses thereof shall be assessed to the property owner after due notice is given. The amount of such assessment shall be certified to the County Auditor as provided by law and the same shall be collected with and in the same manner as general property taxes.

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 Director Chuck Gipp at 515-281-5918.