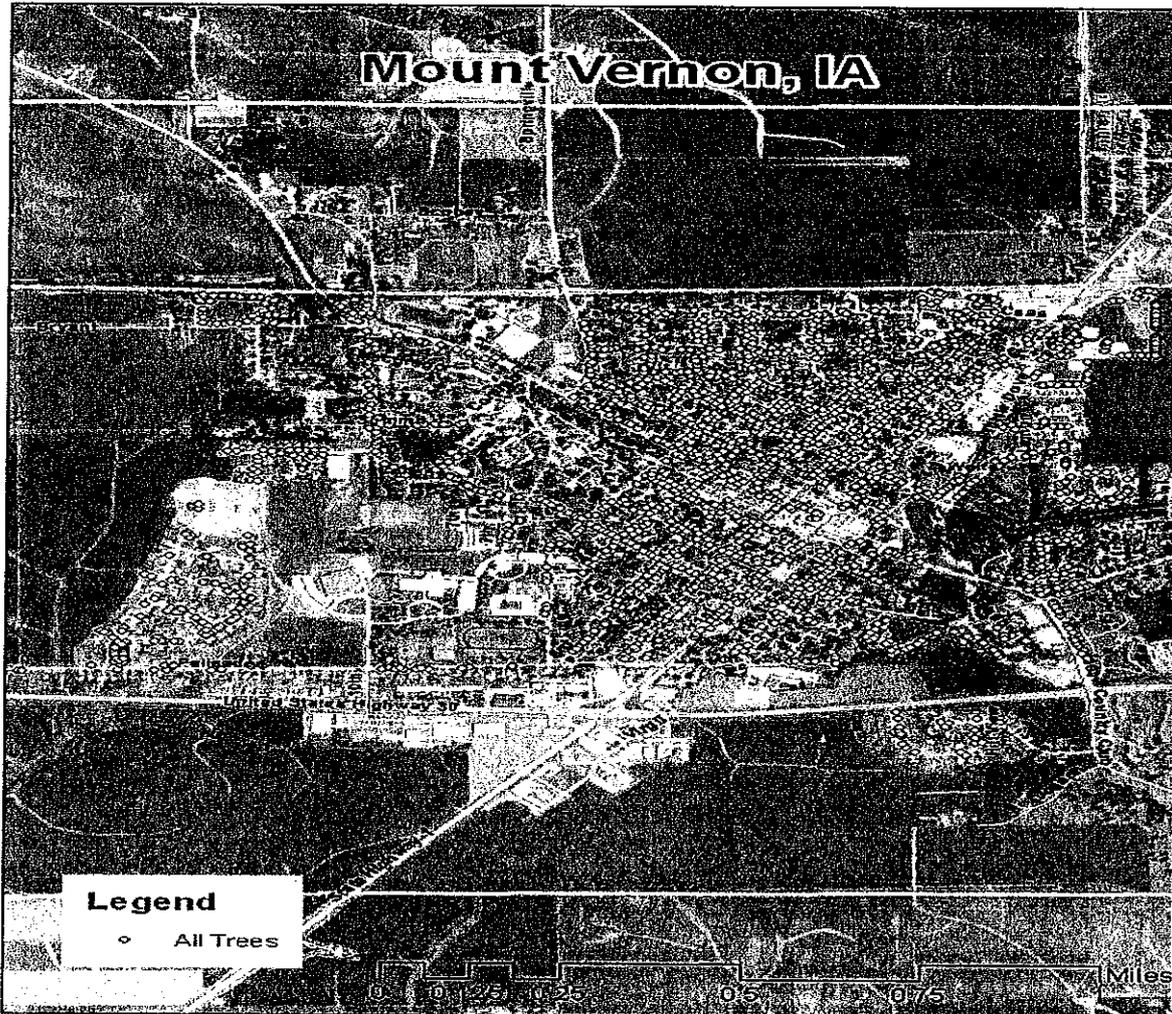


Mount Vernon, IA



2012 Management Plan
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Executive Summary

Overview

This plan was developed to assist the City of Mount Vernon 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 9.3% of Mount Vernon city owned trees (ash) 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 2012, a tree inventory was conducted using Global Positioning System (GPS) data collectors. The inventory was a complete inventory of street and park trees. Below are some key findings of the 2,262 trees inventoried.

- Mount Vernon trees provide \$345,965 of benefits annually, an average of \$153 a tree
- There are over 22 species of trees *crab*
- The top three genus are: Maple 31%, Apple 11%, and Ash 9%
- 86% of trees are in need of some type of management
- 110 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 110 trees needing removal, 41 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*
- 65 of the 210 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 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
- With the current budget it could take 24 years to remove ash – Suggestion: request a budget increase to \$10,000 annually and apply for grants to plant replacement trees

Introduction

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

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

Inventory

In 2012, 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 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 2,262 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.

Annual Benefits

Annual Energy Benefits

Trees conserve energy by shading buildings and blocking winds. Mount Vernon's trees reduce energy related costs by approximately \$94,886 annually (Appendix A, Table 1). These savings are both in Electricity (451.0 MWh) and in Natural Gas (61,895 Therms).

Annual Stormwater Benefits

Mount Vernon's trees intercept about 4,651,087 gallons of rainfall or snow melt a year (Appendix A, Table 2). This interception provides \$126,053 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 Mount Vernon, it is estimated that trees remove 5,672.1 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 \$15,888 (Appendix A, Table 3).

Annual Carbon Benefits

Carbon sequestration and storage reduce the amount of carbon in the atmosphere, mitigating climate change. In Mount Vernon, trees sequester about 17,016,942 lbs of carbon a year with an associated value of \$127,627 (Appendix A, Table 4). In addition, the trees store 1,607,542 lbs of carbon, with a yearly benefit of \$12,057 (Appendix A, Table 5).

Annual Aesthetics Benefits

Social benefits of trees are hard to capture. The analysis does have a calculation for this area that includes: aesthetic value, property values, lowered rates of mental illness and crime, city livability and much more. Mount Vernon receives \$97,082 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, Mount Vernon's trees provide \$345,965 of benefits annually. Benefits of individual trees vary based on size, species, health

and location, but on average each of the 2,262 trees in Mount Vernon provide approximately \$153. annually (Appendix A, Table 7).

Forest Structure

Species Distribution

Mount Vernon has over 22 different tree species along city streets and parks (Appendix A, Figure 1).

The distribution of trees by genus is as follows:

| | | |
|------------------|-----|-----|
| Norway Maple | 285 | 12% |
| Apple (Crab) | 253 | 11% |
| Green Ash | 210 | 9% |
| Sugar Maple | 185 | 8% |
| Red Maple | 133 | 5% |
| Silver Maple | 90 | 4% |
| Northern Pin Oak | 85 | 3% |
| Northern Red Oak | 81 | 3% |
| Black Walnut | 79 | 3% |
| Honeylocust | 61 | 2% |
| Other Species | 769 | 34% |

Age Class

Most of Mount Vernon's trees (21%) are between 12 and 18 inches in diameter at 4.5 ft (Appendix A, Figure 2). For age, a Bell Curve is preferred and shows the highest amount of trees around 18 inches in diameter at 4.5 ft. Mount Vernon's size curve is on the smaller side, indicating a younger than average stand.

Condition: Wood and Foliage

Both wood condition and leaf condition are good indicators of the overall health of the urban forest. The foliage condition results for Mount Vernon indicate that 65% of the trees are in good health, with only 5% of the foliage in poor health, dead or dying (Appendix A, Figure 3 & Appendix B, Figure 3). Similarly, 68% of Mount Vernon's trees are in good health for wood condition (appendix A, Figure 4 & Appendix B, Figure 3). Wood condition that is in poor health, dead or dying is about 8% of the population. This 8% is an estimate of trees that need management follow up.

Management Needs

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

| | | |
|----------------|-------|-----|
| Crown Cleaning | 1,348 | 59% |
| Crown Raising | 157 | 6% |

| | | |
|-----------------|-----|----|
| Tree Staking | 132 | 5% |
| Tree Removal | 110 | 4% |
| Crown Reduction | 130 | 4% |

Canopy Cover

The canopy cover of Mount Vernon is approximately 49 acres (Appendix A, Figure 4). According to the 2010 census, Mount Vernon occupies 2,227 acres. Thus the canopy cover on city land is about .02%.

Land Use and Location

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

Land Use

| | |
|-----------------------------|------|
| Single family residential | 73% |
| Park/vacant/other | 23% |
| Industrial/Large commercial | .1% |
| Small commercial | 1.2% |
| Multifamily residential | 2.3% |

Location

| | |
|---------------------------------|------|
| Planting strip | 46% |
| Other maintained locations | 2,7% |
| Cutout (surrounded by pavement) | 0% |
| Front yard | 51% |

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

Mount Vernon has 27 critical concern trees that need immediate removal. These trees can be seen on the Location of Trees with Recommended Maintenance map (Appendix B, Figure 4). It is recommended to start with the large diameter critical concern trees first. There are 15 trees over 24 inches in diameter at 4.5 ft that should be addressed immediately. Please refer to the six year maintenance plan at the end of this section. After all of the critical concern trees are

addressed, there should be follow up on the trees marked as needing maintenance that do not include trimming. There are a total of 756 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 110 removals, 28 are ash trees. There are a total of 210 ash trees, and 59 of those have signs and symptoms that have been associated with EAB. In addition, there are 42 trees that are in poor health. *City ownership of the trees recommended for removal should be verified prior to any removal*

Pruning Cycle

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

Planting

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

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 (31%) (Appendix A, Figure 1). Maples should not be planted until this percentage can be lowered. Also, ash trees have not been recommended since 2002, due to the threat of EAB. Other species to avoid because they are public nuisances include: cottonwood, poplar, box elder, Chinese elm, evergreen, willow or black walnut, as outlined in section 151.02 of the city ordinance (Appendix C). All trees planted must meet the restrictions in city ordinance 151.02 (Appendix C).

Continual Monitoring

Due to the threat of EAB, it is important to continuously check the health of ash trees. It is recommended that ash trees be checked with a visual survey every year for tree death 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 with No Additional Funding

Year 1

Removal: 5 largest critical concern trees 35 additional ash trees
Planting and Replacement: 23 trees to be planted in open locations
Visual Survey for signs and symptoms of EAB

Year 2

Removal: 5 critical concern trees and 35 additional ash trees with poor health
Planting and Replacement: 40 trees in open locations from year one removals
Routine trimming: Contract to trim 1/3 of the city trees
Visual Survey for signs and symptoms of EAB

Year 3

Removal: 5 trees - removal of any new critical concern trees and 35 ash in poor health
Planting and Replacement: 40 trees to be planted in open locations and locations from previous removals
Visual Survey for signs and symptoms of EAB

Year 4

Removal: 5 trees - removal of any new critical concern trees and 35 ash in poor health
Planting and Replacement: 40 trees in open locations from previous removals
Routine trimming: Contract to trim 1/3 of the city trees
Visual Survey for signs and symptoms of EAB

Year 5

Removal: 5 trees - removal of any new critical concern trees and 35 ash in poor health
Planting and Replacement: 40 trees to be planted in open locations and locations from previous removals
Visual Survey for signs and symptoms of EAB

Year 6

Removal: 5 trees - removal of any new critical concern trees and 35 ash in poor health
Planting and Replacement: 40 trees in open locations from previous removals
Routine trimming: Contract to trim 1/3 of the city trees
Visual Survey for signs and symptoms of EAB

*Reduction of ash over 6 years: Approximately 30 to 38 ash trees removed (approximately 25% of ash). It will take approximately 24 years to remove all ash with the current budget. EAB could potentially kill all ash within 4 years of its arrival.

** To remove all ash trees within 6 years, the budget would need to be increased to \$19,500 a year. If the budget were increased to \$10,000 a year all ash could be removed in 13 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*

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.

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 ash trees will be replaced. All trees will meet the restrictions in city ordinance 151.02 (Appendix C). The new plantings will be a diverse mix and will not include ash, maple, cottonwood, poplar, box elder, Chinese elm, evergreen, willow or black walnut.

Postponed Work

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

Monitoring

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

Private Ash Trees

It is strongly recommended that private property owners start removing ash trees on their property upon arrival of EAB. City Code 151.06 states "If it is determined with reasonable certainty that any such condition exists (trees or shrubs in the City reported or suspected to be infected with or damaged by any disease or insect or disease pests) on private property and that the danger to other trees or to adjoining property or passing motorists or pedestrians is imminent, the Council shall notify by certified mail the owner, occupant or person in charge of such property to correct such condition by treatment or removal within fourteen (14) days of said notification. If such owner, occupant or person in charge of said property fails to comply within 14 days of receipt of notice, the Council may cause the condition to be corrected and the cost assessed against the property."

Budget

Current Budget

Total \$54,072.00 over 6 years (\$9,012.00/year)

FY 2012 Budget

Removal: \$20,000. (\$10,988 additional funding needed)

Planting: (\$4,000. Additional funding needed)

Watering & Maintenance: (\$500 additional funding needed)

FY 2013 Budget

Removal: \$20,000. (\$10,988 additional funding needed)

Planting: (\$4,000 additional funding needed)

Routine trimming: (\$3,250.00 additional funding needed)

Watering & Maintenance: (\$500 additional funding needed)

FY 2014 Budget

Removal: \$20,000 (\$10,988 additional funding needed)

Planting: (\$4,000 additional funding needed)

Watering & Maintenance: (\$500 additional funding needed)

FY 2015 Budget

Removal: \$20,000 (\$10,988 additional funding needed)

Planting: (\$4,000 additional funding needed)

Routine trimming: (\$3,250 additional funding needed)

Watering & Maintenance: (\$500 additional funding needed)

FY 2016 Budget

Removal: \$20,000 (\$10,988 additional funding needed)

Planting: (\$4,000 additional funding needed)

Watering & Maintenance: (\$500 additional funding needed)

FY 2016 Budget

Removal: \$20,000 (\$10,988 additional funding needed)

Planting: (\$4,000 additional funding needed)

Routine trimming: (\$3,250 additional funding needed)

Watering & Maintenance: (\$500 additional funding needed)

*Reduction of ash over 6 years: approximately 30 to 38 ash trees removed (approximately 25% of ash). **It will take approximately 24 years to remove all ash with the current budget.**

* Treating Ash can prolong removal to save on budget.

Purposed Budget Increase

EAB could potentially kill all ash trees in Mount Vernon within 4 years of its arrival. To remove all ash trees within 6 years the budget would need to be increased to \$18,738 a year. If the budget were increased to \$10,000 a year all ash could be removed within 13 years.

Additionally, it is recommended that Mount Vernon 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.

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Appendix A: i-Tree Data

Table 1: Annual Energy Benefits

Mount Vernon

Annual Energy Benefits of Public Trees by Species

1/10/2013

| Species | Total Electricity (MWh) | Electricity (\$) | Total Natural Gas (Therms) | Natural Gas (\$) | Total (\$) | Standard Error | % of Total Trees | % of Total \$ | Avg. \$/tree |
|--------------------|----------------------------|---------------------|-------------------------------|---------------------|---------------|-------------------|---------------------|------------------|-----------------|
| Norway maple | 64.1 | 4,868 | 8,950.1 | 8,771 | 13,639 | (N/A) | 12.6 | 14.4 | 47.69 |
| Apple | 14.6 | 1,110 | 2,284.8 | 2,239 | 3,349 | (N/A) | 11.2 | 3.5 | 13.19 |
| Green ash | 61.3 | 4,654 | 8,432.4 | 8,264 | 12,917 | (N/A) | 9.3 | 13.6 | 61.51 |
| Sugar maple | 56.5 | 4,292 | 7,584.2 | 7,432 | 11,724 | (N/A) | 8.2 | 12.4 | 63.03 |
| Red maple | 18.9 | 1,437 | 2,465.6 | 2,416 | 3,853 | (N/A) | 5.9 | 4.1 | 28.97 |
| Silver maple | 25.3 | 1,922 | 3,331.7 | 3,265 | 5,187 | (N/A) | 4.4 | 5.5 | 52.40 |
| Northern pin oak | 21.0 | 1,595 | 3,039.3 | 2,979 | 4,574 | (N/A) | 3.8 | 4.8 | 53.19 |
| Northern red oak | 14.5 | 1,098 | 1,984.1 | 1,944 | 3,043 | (N/A) | 3.6 | 3.2 | 37.56 |
| Black walnut | 23.9 | 1,810 | 3,264.8 | 3,199 | 5,010 | (N/A) | 3.5 | 5.3 | 63.42 |
| Honeylocust | 19.2 | 1,454 | 2,552.6 | 2,502 | 3,956 | (N/A) | 2.7 | 4.2 | 63.81 |
| Norway spruce | 7.0 | 528 | 888.3 | 871 | 1,398 | (N/A) | 2.6 | 1.5 | 24.10 |
| Callery pear | 4.2 | 320 | 594.9 | 583 | 903 | (N/A) | 2.2 | 1.0 | 18.05 |
| Littleleaf linden | 8.0 | 605 | 1,122.2 | 1,100 | 1,705 | (N/A) | 2.1 | 1.8 | 36.28 |
| Eastern white pine | 6.4 | 482 | 811.4 | 795 | 1,277 | (N/A) | 2.0 | 1.4 | 28.39 |
| Northern hackberry | 13.5 | 1,027 | 1,886.7 | 1,849 | 2,876 | (N/A) | 1.9 | 3.0 | 68.47 |
| Bur oak | 4.1 | 312 | 529.2 | 519 | 831 | (N/A) | 1.6 | 0.9 | 23.73 |
| American basswood | 10.3 | 779 | 1,481.2 | 1,452 | 2,230 | (N/A) | 1.5 | 2.4 | 67.58 |
| Maple | 4.6 | 352 | 612.8 | 601 | 953 | (N/A) | 1.3 | 1.0 | 32.86 |
| White oak | 3.8 | 290 | 494.0 | 484 | 774 | (N/A) | 1.3 | 0.8 | 26.71 |
| Swamp white oak | 3.1 | 234 | 462.9 | 454 | 688 | (N/A) | 1.2 | 0.7 | 25.48 |
| White ash | 5.6 | 423 | 653.5 | 640 | 1,063 | (N/A) | 1.1 | 1.1 | 42.53 |
| Other street trees | 61.1 | 4,636 | 8,468.4 | 8,299 | 12,935 | (N/A) | 16.2 | 13.6 | 35.34 |
| Citywide total | 451.0 | 34,229 | 61,895.0 | 60,657 | 94,886 | (N/A) | 100.0 | 100.0 | 41.95 |

Table 2: Annual Stormwater Benefits

Mount Vernon

Annual Stormwater Benefits of Public Trees by Species

1/10/2013

| Species | Total rainfall interception (Gal) | Total (\$) | Standard Error | % of Total Trees | % of Total \$ | Avg. \$/tree |
|--------------------|-----------------------------------|------------|----------------|------------------|---------------|--------------|
| Norway maple | 514,099 | 13,933 | (N/A) | 12.6 | 11.1 | 48.72 |
| Apple | 55,586 | 1,506 | (N/A) | 11.2 | 1.2 | 5.93 |
| Green ash | 693,972 | 18,808 | (N/A) | 9.3 | 14.9 | 89.56 |
| Sugar maple | 708,487 | 19,201 | (N/A) | 8.2 | 15.2 | 103.23 |
| Red maple | 135,330 | 3,668 | (N/A) | 5.9 | 2.9 | 27.58 |
| Silver maple | 324,342 | 8,790 | (N/A) | 4.4 | 7.0 | 88.79 |
| Northern pin oak | 204,198 | 5,534 | (N/A) | 3.8 | 4.4 | 64.35 |
| Northern red oak | 136,758 | 3,706 | (N/A) | 3.6 | 2.9 | 45.76 |
| Black walnut | 286,458 | 7,764 | (N/A) | 3.5 | 6.2 | 98.27 |
| Honeylocust | 207,164 | 5,615 | (N/A) | 2.7 | 4.5 | 90.56 |
| Norway spruce | 112,093 | 3,038 | (N/A) | 2.6 | 2.4 | 52.38 |
| Callery pear | 23,570 | 639 | (N/A) | 2.2 | 0.5 | 12.78 |
| Littleleaf linden | 72,332 | 1,960 | (N/A) | 2.1 | 1.6 | 41.71 |
| Eastern white pine | 115,768 | 3,138 | (N/A) | 2.0 | 2.5 | 69.72 |
| Northern hackberry | 126,049 | 3,416 | (N/A) | 1.9 | 2.7 | 81.34 |
| Bur oak | 33,397 | 905 | (N/A) | 1.6 | 0.7 | 25.86 |
| American basswood | 122,344 | 3,316 | (N/A) | 1.5 | 2.6 | 100.48 |
| Maple | 38,295 | 1,038 | (N/A) | 1.3 | 0.8 | 35.79 |
| White oak | 27,189 | 737 | (N/A) | 1.3 | 0.6 | 25.41 |
| Swamp white oak | 17,419 | 472 | (N/A) | 1.2 | 0.4 | 17.48 |
| White ash | 40,019 | 1,085 | (N/A) | 1.1 | 0.9 | 43.38 |
| Other street trees | 656,218 | 17,785 | (N/A) | 16.2 | 14.1 | 48.59 |
| Citywide total | 4,651,087 | 126,053 | (N/A) | 100.0 | 100.0 | 55.73 |

Table 3: Annual Air Quality Benefits

Mount Vernon

Annual Air Quality Benefits of Public Trees by Species

1/10/2013

| Species | Deposition (lb) | | | | Total Depos. (\$) | Avoided (lb) | | | | Total Avoided (\$) | BVOC Emissions (lb) | BVOC Emissions (\$) | Total (lb) | Total Standard (\$) | % of Total Error | % of Total Trees | Avg. \$/tree |
|--------------------|-----------------|-----------------|------------------|-----------------|-------------------|-----------------|------------------|-------|-----------------|--------------------|---------------------|---------------------|------------|---------------------|------------------|------------------|--------------|
| | O ₃ | NO ₂ | PM ₁₀ | SO ₂ | | NO ₂ | PM ₁₀ | VOC | SO ₂ | | | | | | | | |
| Norway maple | 95.9 | 16.3 | 48.3 | 4.3 | 521 | 308.3 | 44.8 | 42.7 | 291.0 | 1,916 | -33.3 | -87 | 828.5 | 2,351 | (N/A) | 12.6 | 8.22 |
| Apple | 13.8 | 2.3 | 7.0 | 0.6 | 75 | 72.3 | 10.3 | 9.8 | 66.3 | 444 | -0.1 | 0 | 182.4 | 519 | (N/A) | 11.2 | 2.04 |
| Green ash | 89.7 | 14.3 | 42.6 | 4.0 | 477 | 293.1 | 42.6 | 40.7 | 277.9 | 1,825 | 0.0 | 0 | 805.0 | 2,302 | (N/A) | 9.3 | 10.96 |
| Sugar maple | 102.8 | 17.5 | 49.8 | 4.5 | 553 | 268.2 | 39.2 | 37.4 | 256.1 | 1,675 | -79.9 | -300 | 695.6 | 1,928 | (N/A) | 8.2 | 10.36 |
| Red maple | 28.9 | 4.9 | 13.9 | 1.3 | 155 | 89.1 | 13.1 | 12.5 | 83.8 | 558 | -10.1 | -38 | 239.3 | 675 | (N/A) | 5.9 | 5.08 |
| Silver maple | 51.7 | 8.8 | 26.0 | 2.3 | 281 | 119.4 | 17.5 | 16.7 | 114.6 | 747 | -28.5 | -107 | 328.4 | 921 | (N/A) | 4.4 | 9.30 |
| Northern pin oak | 42.7 | 7.4 | 20.9 | 1.9 | 230 | 102.0 | 14.7 | 14.0 | 95.4 | 632 | -9.9 | -37 | 289.0 | 825 | (N/A) | 3.8 | 9.59 |
| Northern red oak | 28.3 | 4.9 | 13.9 | 1.3 | 153 | 69.0 | 10.1 | 9.6 | 65.5 | 430 | -40.3 | -151 | 162.1 | 431 | (N/A) | 3.6 | 5.33 |
| Black walnut | 41.7 | 6.7 | 19.3 | 1.9 | 220 | 113.9 | 16.6 | 15.8 | 108.1 | 709 | 0.0 | 0 | 324.0 | 930 | (N/A) | 3.5 | 11.77 |
| Honeylocust | 40.2 | 6.6 | 18.4 | 1.8 | 312 | 90.7 | 13.3 | 12.6 | 86.7 | 567 | -30.7 | -115 | 239.7 | 664 | (N/A) | 2.7 | 10.71 |
| Norway spruce | 12.7 | 2.5 | 10.6 | 1.6 | 84 | 32.5 | 4.8 | 4.6 | 31.5 | 204 | -50.8 | -191 | 50.0 | 98 | (N/A) | 2.6 | 1.69 |
| Callery pear | 3.0 | 0.5 | 1.7 | 0.1 | 17 | 20.3 | 2.9 | 2.8 | 19.1 | 126 | -0.9 | -3 | 49.7 | 140 | (N/A) | 2.2 | 2.79 |
| Littleleaf linden | 11.4 | 2.0 | 5.8 | 0.5 | 62 | 38.4 | 5.6 | 5.3 | 36.2 | 239 | -5.7 | -21 | 99.5 | 279 | (N/A) | 2.1 | 5.94 |
| Eastern white pine | 13.4 | 2.7 | 11.0 | 1.7 | 88 | 29.7 | 4.4 | 4.2 | 28.8 | 187 | -54.1 | -203 | 41.7 | 72 | (N/A) | 2.0 | 1.60 |
| Northern hackberry | 20.8 | 3.6 | 10.6 | 0.9 | 113 | 65.0 | 9.4 | 9.0 | 61.4 | 404 | 0.0 | 0 | 180.7 | 518 | (N/A) | 1.9 | 12.32 |
| Bur oak | 3.1 | 0.5 | 1.7 | 0.1 | 17 | 19.3 | 2.8 | 2.7 | 18.6 | 121 | 0.0 | 0 | 48.8 | 138 | (N/A) | 1.5 | 3.94 |
| American basswood | 17.3 | 3.0 | 8.4 | 0.8 | 93 | 49.8 | 7.2 | 6.8 | 46.5 | 308 | -14.6 | -55 | 125.2 | 347 | (N/A) | 1.5 | 10.50 |
| Maple | 9.1 | 1.6 | 4.3 | 0.4 | 49 | 21.9 | 3.2 | 3.1 | 21.0 | 137 | -3.1 | -11 | 61.5 | 174 | (N/A) | 1.3 | 6.01 |
| White oak | 2.0 | 0.3 | 1.2 | 0.1 | 12 | 18.0 | 2.6 | 2.5 | 17.3 | 113 | 0.0 | 0 | 44.2 | 124 | (N/A) | 1.3 | 4.29 |
| Swamp white oak | 2.0 | 0.3 | 1.2 | 0.1 | 11 | 15.1 | 2.2 | 2.1 | 14.0 | 93 | -0.6 | -2 | 36.4 | 102 | (N/A) | 1.2 | 3.79 |
| White ash | 3.1 | 0.5 | 1.9 | 0.1 | 18 | 25.6 | 3.8 | 3.6 | 25.2 | 162 | 0.0 | 0 | 63.9 | 180 | (N/A) | 1.1 | 7.18 |
| Other street trees | 109.7 | 18.6 | 57.4 | 6.2 | 604 | 292.5 | 42.5 | 40.5 | 276.8 | 1,820 | -67.7 | -254 | 776.4 | 2,170 | (N/A) | 16.2 | 5.93 |
| Citywide total | 743.5 | 125.9 | 375.6 | 36.5 | 4,046 | 2,154.3 | 313.6 | 299.0 | 2,043.9 | 13,418 | -420.2 | -1,576 | 5,672.1 | 15,888 | (N/A) | 100.0 | 7.02 |

Table 4: Annual Carbon Stored

Mount Vernon

Stored CO2 Benefits of Public Trees by Species

1/10/2013

| Species | Total Stored CO2 (lbs) | Total (\$) | Standard Error | % of Total Trees | % of Total \$ | Avg. \$/tree |
|-----------------------|---------------------------|----------------|-------------------|---------------------|------------------|-----------------|
| Norway maple | 1,577,883 | 11,834 | (N/A) | 12.6 | 9.3 | 41.38 |
| Apple | 233,167 | 1,749 | (N/A) | 11.2 | 1.4 | 6.88 |
| Green ash | 2,951,676 | 22,138 | (N/A) | 9.3 | 17.4 | 105.42 |
| Sugar maple | 3,022,480 | 22,669 | (N/A) | 8.2 | 17.8 | 121.87 |
| Red maple | 324,979 | 2,437 | (N/A) | 5.9 | 1.9 | 18.33 |
| Silver maple | 1,191,208 | 8,934 | (N/A) | 4.4 | 7.0 | 90.24 |
| Northern pin oak | 705,286 | 5,290 | (N/A) | 3.8 | 4.1 | 61.51 |
| Northern red oak | 599,564 | 4,497 | (N/A) | 3.6 | 3.5 | 55.52 |
| Black walnut | 1,398,221 | 10,487 | (N/A) | 3.5 | 8.2 | 132.74 |
| Honeylocust | 512,624 | 3,845 | (N/A) | 2.7 | 3.0 | 62.01 |
| Norway spruce | 120,774 | 906 | (N/A) | 2.6 | 0.7 | 15.62 |
| Callery pear | 52,744 | 396 | (N/A) | 2.2 | 0.3 | 7.91 |
| Littleleaf linden | 247,256 | 1,854 | (N/A) | 2.1 | 1.5 | 39.46 |
| Eastern white pine | 131,086 | 983 | (N/A) | 2.0 | 0.8 | 21.85 |
| Northern | 322,785 | 2,421 | (N/A) | 1.9 | 1.9 | 57.64 |
| Bur oak | 102,398 | 768 | (N/A) | 1.6 | 0.6 | 21.94 |
| American | 645,738 | 4,843 | (N/A) | 1.5 | 3.8 | 146.76 |
| Maple | 98,986 | 742 | (N/A) | 1.3 | 0.6 | 25.60 |
| White oak | 71,763 | 538 | (N/A) | 1.3 | 0.4 | 18.56 |
| Swamp white oak | 36,283 | 272 | (N/A) | 1.2 | 0.2 | 10.08 |
| White ash | 91,629 | 687 | (N/A) | 1.1 | 0.5 | 27.49 |
| Other street trees | 1,169,549 | 19,338 | (N/A) | 16.2 | 15.2 | 52.84 |
| Citywide total | 17,016,942 | 127,627 | (N/A) | 100.0 | 100.0 | 56.42 |

Table 5: Annual Carbon Sequestered

Mount Vernon

Annual CO₂ Benefits of Public Trees by Species

1/10/2013

| 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 |
|--------------------|------------------|------------------|----------------------------|--------------------------|---------------------|--------------|--------------|----------------|------------|----------------|------------------|---------------|--------------|
| Norway maple | 104,481 | 784 | -7,574 | -56 | -57 | 107,575 | 807 | 204,425 | 1,533 | (N/A) | 12.6 | 12.7 | 5.36 |
| Apple | 22,671 | 170 | -1,119 | -50 | -9 | 24,538 | 184 | 46,041 | 345 | (N/A) | 11.2 | 2.9 | 1.36 |
| Green ash | 142,036 | 1,065 | -14,168 | -41 | -107 | 102,844 | 771 | 230,671 | 1,730 | (N/A) | 9.3 | 14.4 | 8.24 |
| Sugar maple | 140,019 | 1,050 | -14,508 | -36 | -109 | 94,841 | 711 | 220,316 | 1,652 | (N/A) | 8.2 | 13.7 | 8.88 |
| Red maple | 33,968 | 255 | -1,560 | -26 | -12 | 31,752 | 238 | 64,134 | 481 | (N/A) | 5.9 | 4.0 | 3.62 |
| Silver maple | 95,695 | 718 | -5,718 | -19 | -43 | 42,482 | 319 | 132,440 | 993 | (N/A) | 4.4 | 8.2 | 10.03 |
| Northern pin oak | 24,889 | 187 | -3,385 | -17 | -26 | 35,259 | 264 | 56,746 | 426 | (N/A) | 3.8 | 3.5 | 4.95 |
| Northern red oak | 15,092 | 113 | -2,878 | -16 | -22 | 24,268 | 182 | 36,467 | 274 | (N/A) | 3.6 | 2.3 | 3.38 |
| Black walnut | 51,338 | 385 | -6,711 | -15 | -50 | 40,010 | 300 | 84,621 | 635 | (N/A) | 3.5 | 5.3 | 8.03 |
| Honeylocust | 55,640 | 417 | -2,461 | -12 | -19 | 32,142 | 241 | 85,310 | 640 | (N/A) | 2.7 | 5.3 | 10.32 |
| Norway spruce | 7,258 | 54 | -580 | -11 | -4 | 11,658 | 87 | 18,325 | 137 | (N/A) | 2.6 | 1.1 | 2.37 |
| Callery pear | 7,961 | 60 | -253 | -10 | -2 | 7,064 | 53 | 14,763 | 111 | (N/A) | 2.2 | 0.9 | 2.21 |
| Littleleaf linden | 25,493 | 191 | -1,187 | -9 | -9 | 13,379 | 100 | 37,676 | 283 | (N/A) | 2.1 | 2.3 | 6.01 |
| Eastern white pine | 7,189 | 54 | -629 | -9 | -5 | 10,657 | 80 | 17,208 | 129 | (N/A) | 2.0 | 1.1 | 2.87 |
| Northern hackberry | 16,211 | 122 | -1,549 | -8 | -12 | 22,691 | 170 | 37,345 | 280 | (N/A) | 1.9 | 2.3 | 6.67 |
| Bur oak | 9,108 | 68 | -492 | -7 | -4 | 6,893 | 52 | 15,502 | 116 | (N/A) | 1.6 | 1.0 | 3.32 |
| American basswood | 36,508 | 274 | -3,100 | -6 | -23 | 17,206 | 129 | 50,608 | 380 | (N/A) | 1.5 | 3.2 | 11.50 |
| Maple | 11,112 | 83 | -475 | -6 | -4 | 7,790 | 58 | 18,421 | 138 | (N/A) | 1.3 | 1.2 | 4.76 |
| White oak | 8,025 | 60 | -344 | -6 | -3 | 6,417 | 48 | 14,092 | 106 | (N/A) | 1.3 | 0.9 | 3.64 |
| Swamp white oak | 6,181 | 46 | -174 | -5 | -1 | 5,179 | 39 | 11,181 | 84 | (N/A) | 1.2 | 0.7 | 3.11 |
| White ash | 11,449 | 86 | -440 | -5 | -3 | 9,345 | 70 | 20,349 | 153 | (N/A) | 1.1 | 1.3 | 6.10 |
| Other street trees | 100,893 | 757 | -12,376 | -71 | -93 | 102,456 | 768 | 190,901 | 1,432 | (N/A) | 16.2 | 11.9 | 3.91 |
| Citywide total | 933,216 | 6,999 | -81,681 | -441 | -616 | 756,449 | 5,673 | 1,607,542 | 12,057 | (N/A) | 100.0 | 100.0 | 5.33 |

Table 6: Annual Social and Aesthetic Benefits
Mount Vernon

Annual Aesthetic/Other Benefits of Public Trees by Species

1/10/2013

| Species | Total (\$) | Standard Error | % of Total Trees | % of Total \$ | Avg. \$/tree |
|--------------------|------------|----------------|------------------|---------------|--------------|
| Norway maple | 10,204 | (N/A) | 12.6 | 10.5 | 35.68 |
| Apple | 1,264 | (N/A) | 11.2 | 1.3 | 4.98 |
| Green ash | 11,620 | (N/A) | 9.3 | 12.0 | 55.33 |
| Sugar maple | 13,949 | (N/A) | 8.2 | 14.4 | 74.99 |
| Red maple | 4,652 | (N/A) | 5.9 | 4.8 | 34.97 |
| Silver maple | 7,996 | (N/A) | 4.4 | 8.2 | 80.77 |
| Northern pin oak | 2,377 | (N/A) | 3.8 | 2.5 | 27.63 |
| Northern red oak | 1,214 | (N/A) | 3.6 | 1.3 | 14.98 |
| Black walnut | 4,106 | (N/A) | 3.5 | 4.2 | 51.98 |
| Honeylocust | 13,062 | (N/A) | 2.7 | 13.5 | 210.67 |
| Norway spruce | 1,749 | (N/A) | 2.6 | 1.8 | 30.15 |
| Callery pear | 925 | (N/A) | 2.2 | 1.0 | 18.50 |
| Littleleaf linden | 2,723 | (N/A) | 2.1 | 2.8 | 57.93 |
| Eastern white pine | 1,746 | (N/A) | 2.0 | 1.8 | 38.81 |
| Northern hackberry | 2,237 | (N/A) | 1.9 | 2.3 | 53.25 |
| Bur oak | 1,000 | (N/A) | 1.6 | 1.0 | 28.57 |
| American basswood | 2,537 | (N/A) | 1.5 | 2.6 | 76.88 |
| Maple | 1,393 | (N/A) | 1.3 | 1.4 | 48.04 |
| White oak | 935 | (N/A) | 1.3 | 1.0 | 32.26 |
| Swamp white oak | 706 | (N/A) | 1.2 | 0.7 | 26.16 |
| White ash | 1,511 | (N/A) | 1.1 | 1.6 | 60.44 |
| Other street trees | 9,178 | (N/A) | 16.2 | 9.5 | 25.08 |
| Citywide total | 97,082 | (N/A) | 100.0 | 100.0 | 42.92 |

Table 7: Summary of Benefits in Dollars

Mount Vernon

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

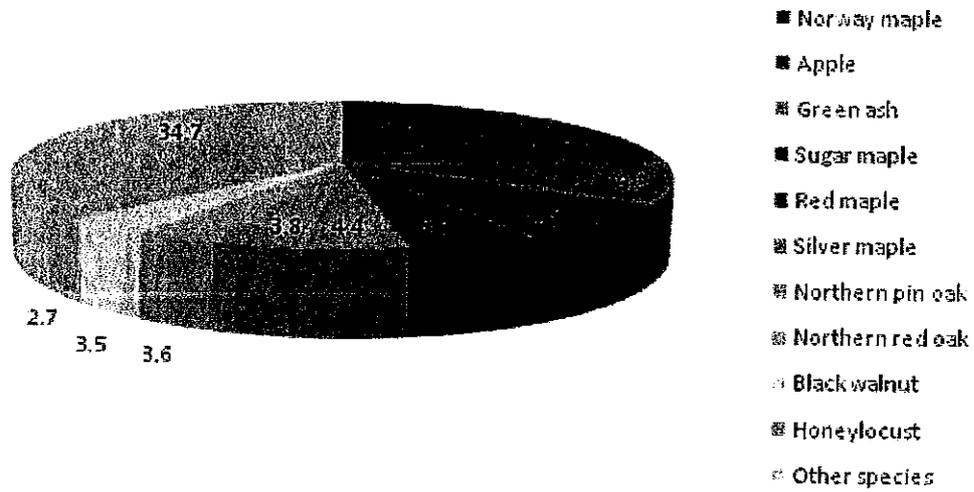
1/10/201

| Species | Energy | CO ₂ | Air Quality | Stormwater | Aesthetic/Other | Total Standard (\$) | Error | % of Total \$ |
|-----------------------|---------------|-----------------|---------------|----------------|-----------------|---------------------|-------------|---------------|
| Norway maple | 13,639 | 1,533 | 2,351 | 13,933 | 10,204 | 41,660 | (±0) | 12.0 |
| Apple | 3,349 | 345 | 519 | 1,506 | 1,264 | 6,984 | (±0) | 2.0 |
| Green ash | 12,917 | 1,730 | 2,302 | 18,808 | 11,620 | 47,377 | (±0) | 13.7 |
| Sugar maple | 11,724 | 1,652 | 1,928 | 19,201 | 13,949 | 48,454 | (±0) | 14.0 |
| Red maple | 3,853 | 481 | 675 | 3,668 | 4,652 | 13,329 | (±0) | 3.9 |
| Silver maple | 5,187 | 993 | 921 | 8,790 | 7,996 | 23,887 | (±0) | 6.9 |
| Northern pin oak | 4,574 | 426 | 825 | 5,534 | 2,377 | 13,735 | (±0) | 4.0 |
| Northern red oak | 3,043 | 274 | 431 | 3,706 | 1,214 | 8,667 | (±0) | 2.5 |
| Black walnut | 5,010 | 635 | 930 | 7,764 | 4,106 | 18,444 | (±0) | 5.3 |
| Honeylocust | 3,956 | 640 | 664 | 5,615 | 13,062 | 23,936 | (±0) | 6.9 |
| Norway spruce | 1,398 | 137 | 98 | 3,038 | 1,749 | 6,420 | (±0) | 1.9 |
| Callery pear | 903 | 111 | 140 | 639 | 925 | 2,717 | (±0) | 0.8 |
| Littleleaf linden | 1,705 | 283 | 279 | 1,960 | 2,723 | 6,950 | (±0) | 2.0 |
| Eastern white pine | 1,277 | 129 | 72 | 3,138 | 1,746 | 6,363 | (±0) | 1.8 |
| Northern hackberry | 2,876 | 280 | 518 | 3,416 | 2,237 | 9,326 | (±0) | 2.7 |
| Bur oak | 831 | 116 | 138 | 905 | 1,000 | 2,990 | (±0) | 0.9 |
| American basswood | 2,230 | 380 | 347 | 3,316 | 2,537 | 8,809 | (±0) | 2.5 |
| Maple | 953 | 138 | 174 | 1,038 | 1,393 | 3,696 | (±0) | 1.1 |
| White oak | 774 | 106 | 124 | 737 | 935 | 2,677 | (±0) | 0.8 |
| Swamp white oak | 688 | 84 | 102 | 472 | 706 | 2,053 | (±0) | 0.6 |
| White ash | 1,063 | 153 | 180 | 1,085 | 1,511 | 3,991 | (±0) | 1.2 |
| Other street trees | 12,935 | 1,432 | 2,170 | 17,785 | 9,178 | 43,500 | (±0) | 12.6 |
| Citywide Total | 94,886 | 12,057 | 15,887 | 126,053 | 97,082 | 345,965 | (±0) | 100.0 |

Mount Vernon

Species Distribution of Public Trees (%)

1/10/2013



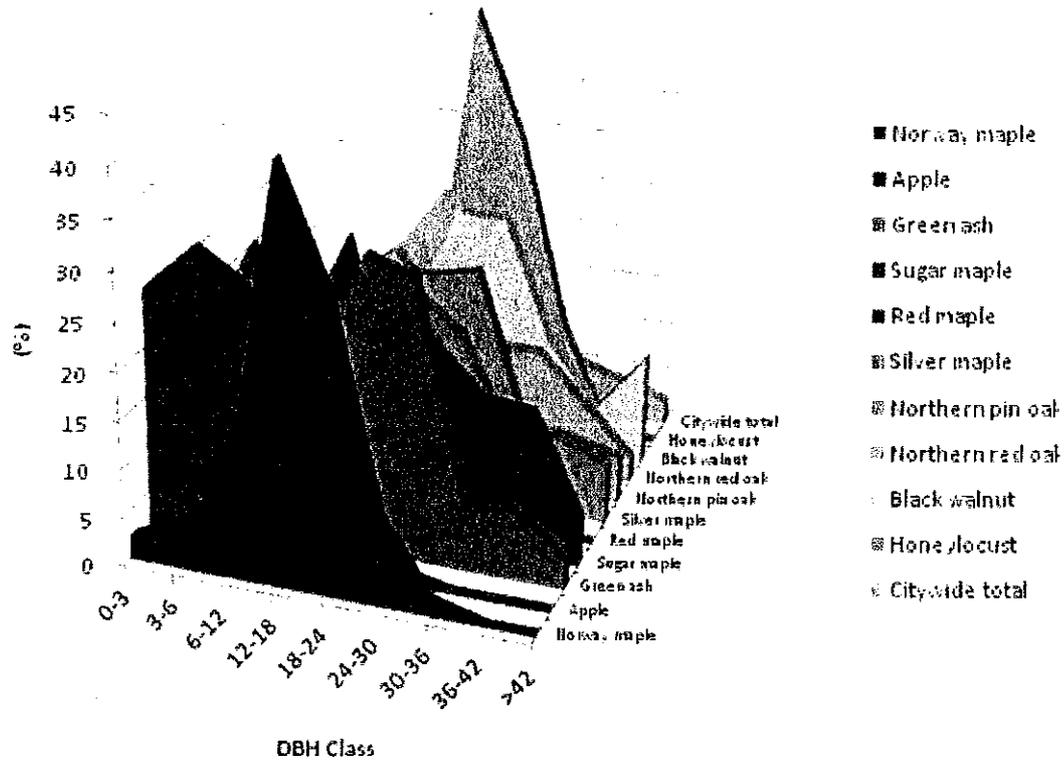
| Species | Percent |
|------------------|---------|
| Norway maple | 12.6 |
| Apple | 11.2 |
| Green ash | 9.3 |
| Sugar maple | 8.2 |
| Red maple | 5.9 |
| Silver maple | 4.4 |
| Northern pin oak | 3.8 |
| Northern red oak | 3.6 |
| Black walnut | 3.5 |
| Honeylocust | 2.7 |
| Other species | 34.7 |
| Total | 100.0 |

Figure 1: Species Distribution

Mount Vernon

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

1/10/2013



| Species | DBH class (in) | | | | | | | | |
|------------------|----------------|------|------|-------|-------|-------|-------|-------|------|
| | 0-3 | 3-6 | 6-12 | 12-18 | 18-24 | 24-30 | 30-36 | 36-42 | >42 |
| Norway maple | 2.4 | 4.9 | 9.8 | 42.3 | 30.4 | 8.7 | 1.4 | 0.0 | 0.0 |
| Apple | 26.0 | 30.7 | 27.6 | 12.2 | 2.4 | 1.2 | 0.0 | 0.0 | 0.0 |
| Green ash | 0.0 | 1.0 | 6.2 | 17.1 | 30.5 | 28.6 | 6.2 | 7.1 | 3.3 |
| Sugar maple | 1.1 | 2.2 | 4.8 | 11.3 | 24.7 | 20.4 | 15.6 | 15.1 | 4.8 |
| Red maple | 15.0 | 25.6 | 16.5 | 27.8 | 9.0 | 5.3 | 0.8 | 0.0 | 0.0 |
| Silver maple | 8.1 | 6.1 | 10.1 | 16.2 | 21.2 | 17.2 | 7.1 | 8.1 | 6.1 |
| Northern pin oak | 4.7 | 2.3 | 11.6 | 20.9 | 20.9 | 22.1 | 7.0 | 5.8 | 4.7 |
| Northern red oak | 9.9 | 4.9 | 14.8 | 21.0 | 14.8 | 12.3 | 12.3 | 7.4 | 2.5 |
| Black walnut | 0.0 | 3.8 | 7.6 | 12.7 | 24.1 | 24.1 | 11.4 | 5.1 | 11.4 |
| Honeylocust | 1.6 | 3.2 | 4.8 | 4.8 | 43.5 | 30.6 | 11.3 | 0.0 | 0.0 |
| Citywide total | 8.2 | 10.7 | 14.9 | 21.9 | 19.8 | 12.5 | 5.6 | 4.0 | 2.4 |

Figure 2: Relative Age Class

Mount Vernon

Functional (Foliage) Condition of Public Trees by Species (%)

1/10/2013

Citywide total

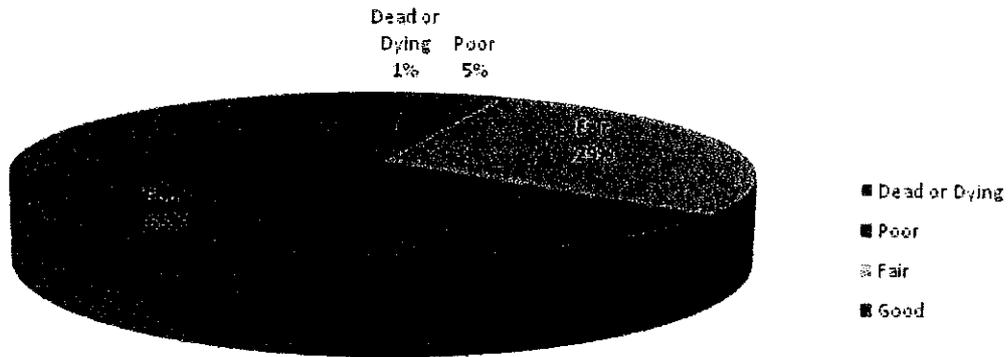


Figure 3: Foliage Condition

Mount Vernon

Structural (Woody) Condition of Public Trees by Species (%)

1/10/2013

Citywide total

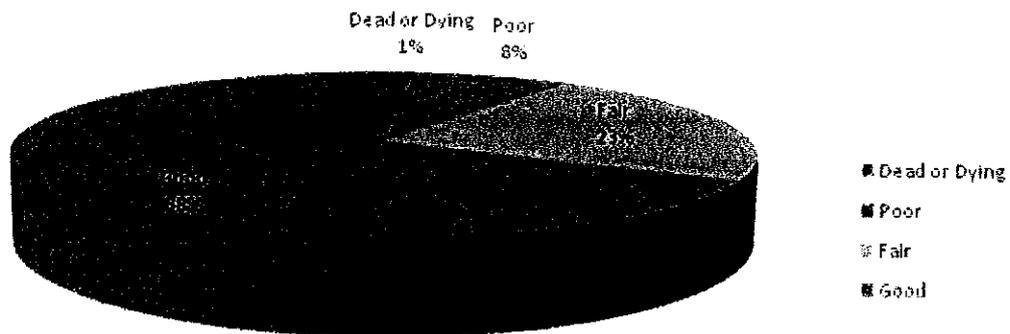
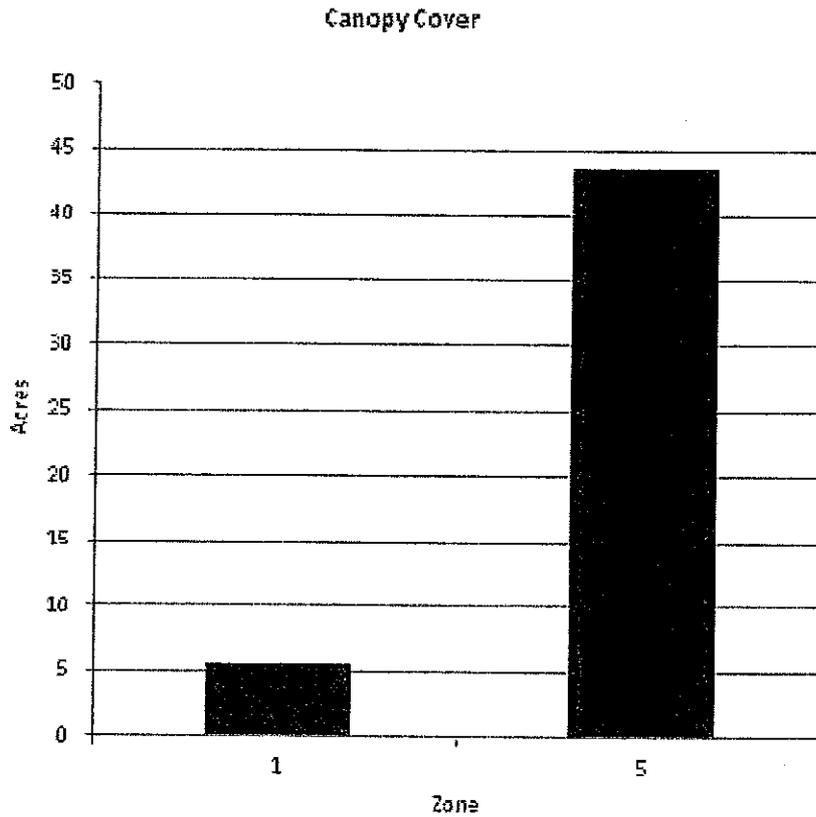


Figure 4: Wood Condition

Mount Vernon

Canopy Cover of Public Trees (Acres)

1/10/2013



| Zone | Acres | % of Total Canopy Cover |
|----------------|-------|-------------------------|
| 1 | 6 | 11.3 |
| 5 | 44 | 88.7 |
| Citywide total | 49 | 100.0 |

| | Total Land Area | Total Street and Sidewalk Area | Total Canopy Cover | Canopy Cover as % of Total Land Area | Canopy Cover as % of Total Streets and Sidewalks |
|----------|-----------------|--------------------------------|--------------------|--------------------------------------|--|
| Citywide | 0 | 0 | 49 | | |

Figure 5: Canopy Cover in Acres

Mount Vernon

Land Use of Public Trees by Zone (%)

1/10/2013

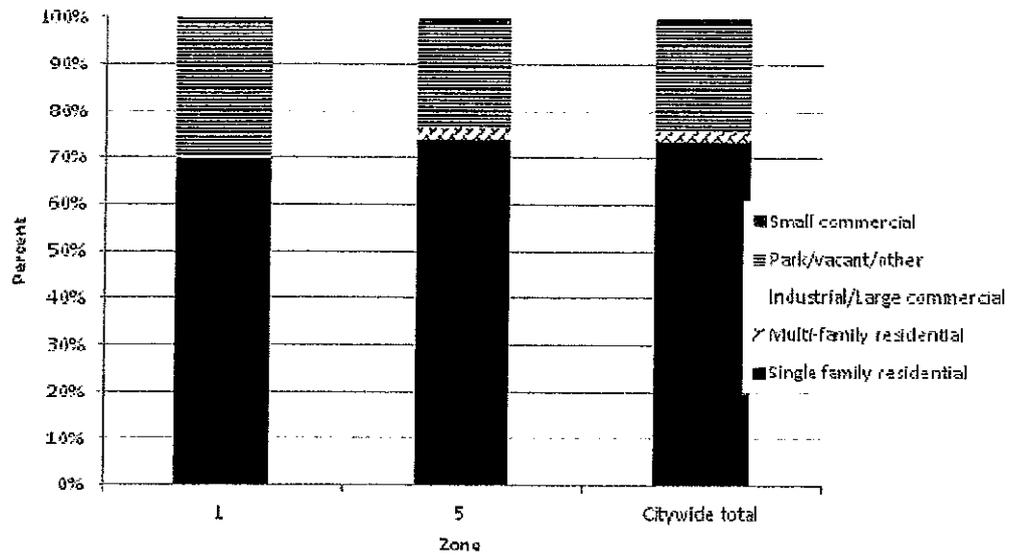


Figure 6: Land Use of city/park trees

Mount Vernon

Location of Public Trees by Zone (%)

1/10/2013

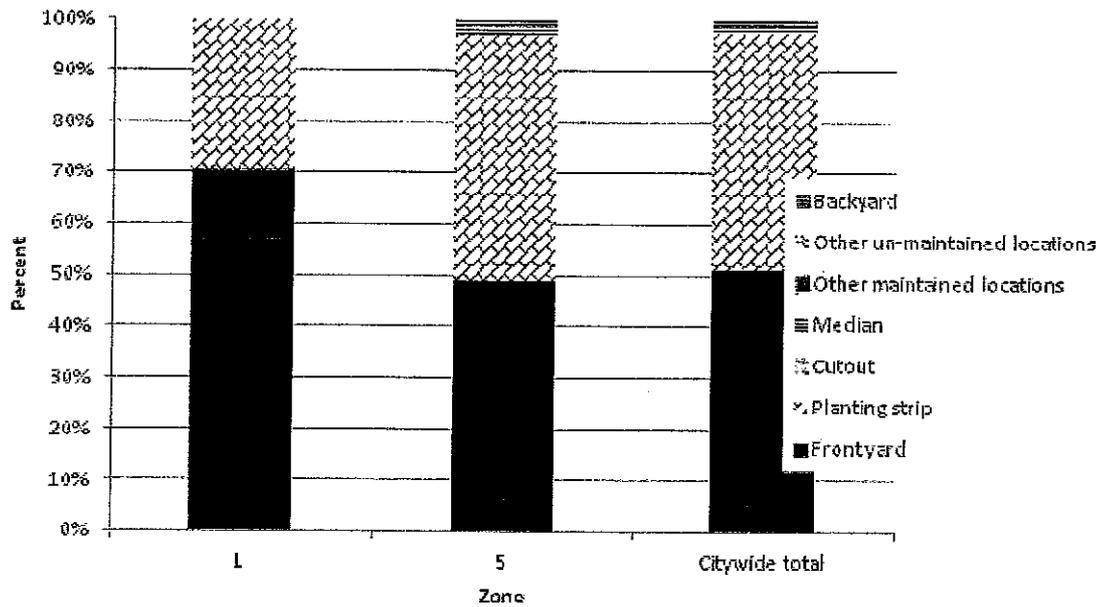


Figure 7: Location of city/park trees

Appendix B: ArcGIS Mapping

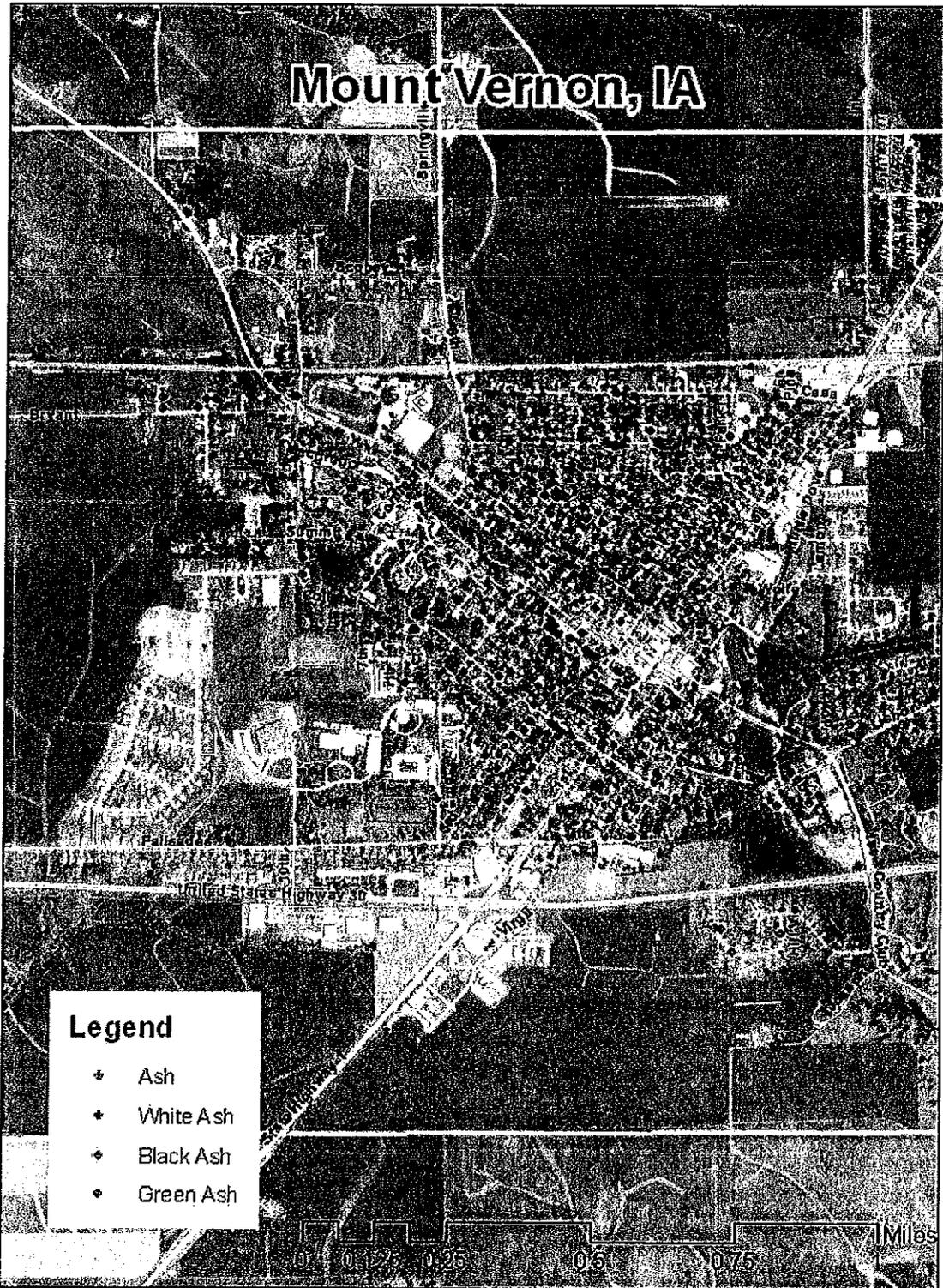


Figure 1: Location of Ash Trees

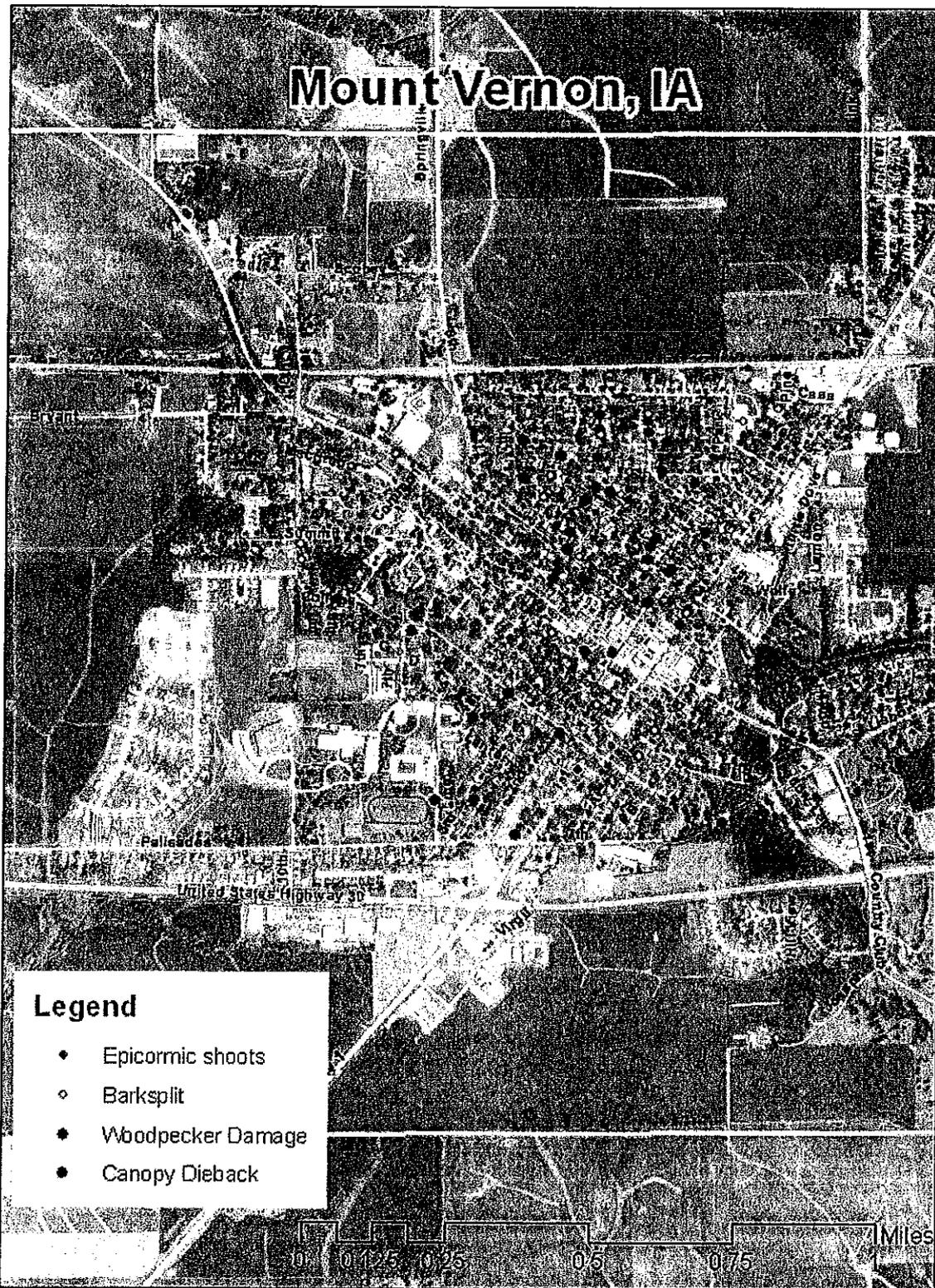


Figure 2: Location of EAB symptoms

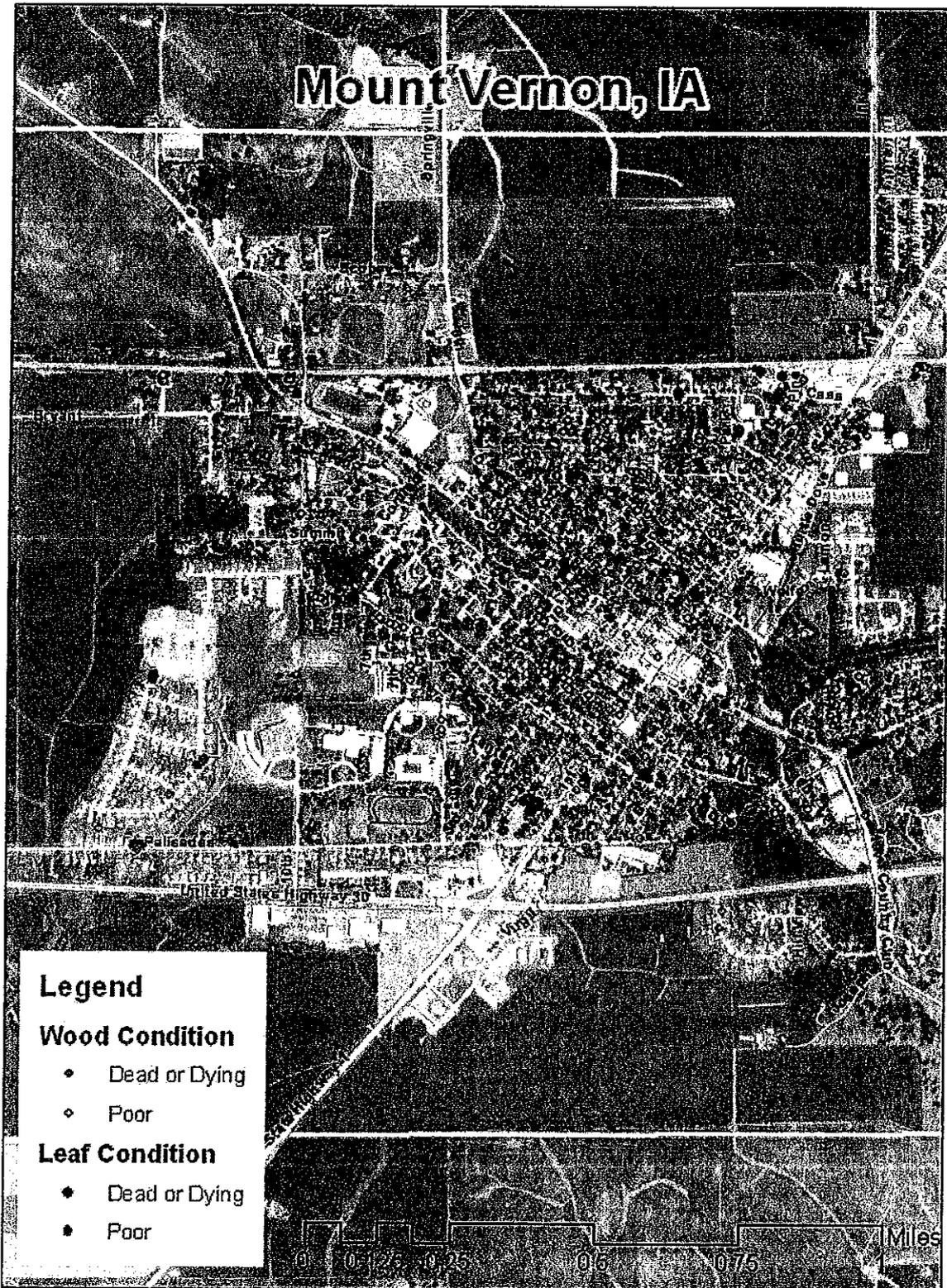


Figure 3: Location of Poor Condition Trees

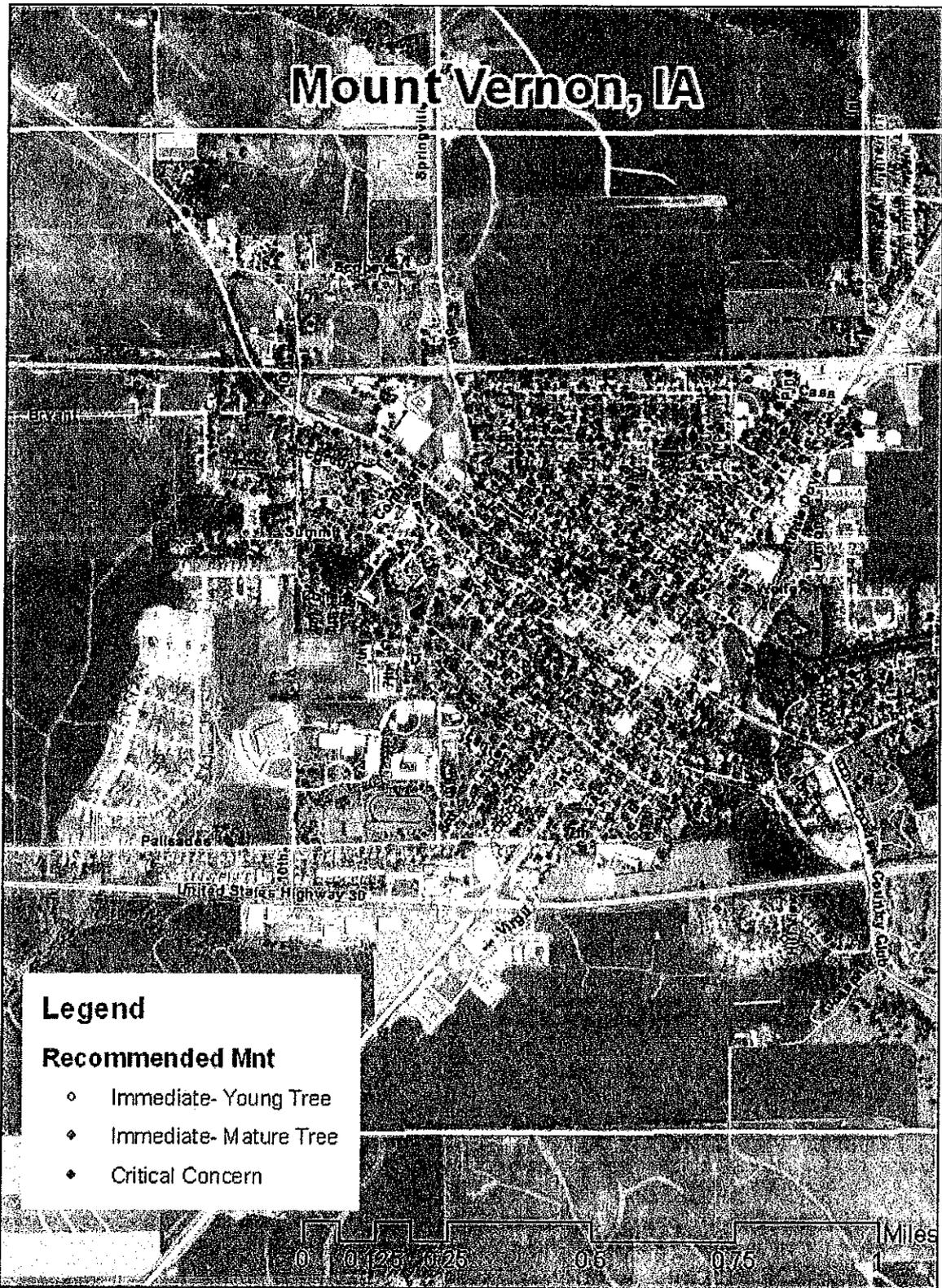
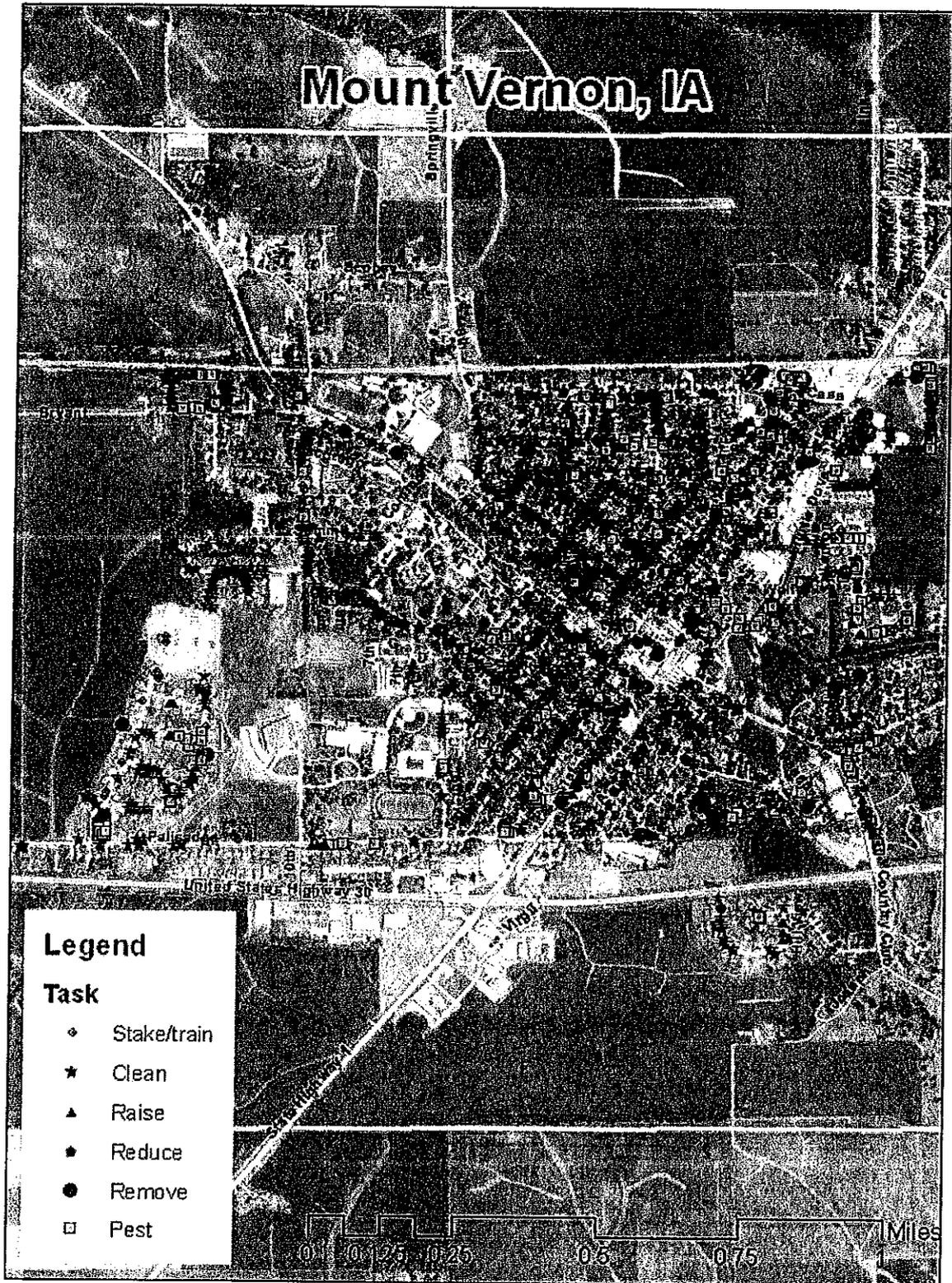


Figure 4: Location of Trees with Recommended Maintenance



Appendix C: Mount Vernon Tree Ordinances

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

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

If you need accommodations because of disability to access the services of this Agency, please contact the Director at 515-281-5918.

Appendix C: Mount Vernon Tree Ordinances

CHAPTER 151 TREES AND GRASS

151.01 Definition 151.05 Disease Control
151.02 Planting Restrictions 151.06 Inspection and Removal
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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 trees 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 Richard Leopold at 515-281-5918.

