# Summary of the City of Menasha's Emerald Ash Borer (EAB) Readiness Plan Draft

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## I. Background

The Emerald Ash Borer (EAB) is an invasive species from Asia that is thought to have arrived in the United States in wood packing material. The pest was first detected in Michigan in 2002 and has since spread to Canada and 14 other states including Wisconsin. Having no natural predators or controls in North America, the pest kills all species of North American ash trees and has killed millions of trees to date as it moves across the country putting it on par with Dutch elm disease and chestnut blight.

In August of 2008, it was announced that EAB had been found in the Village of Newburg, Ozaukee County, WI. Since then, EAB has been found in Brown, Crawford, Milwaukee, and Vernon Counties causing a total of eleven counties to be quarantined statewide. Although quarantines are in place, EAB still has the potential to move long distances by hitchhiking in infested firewood, logs, and nursery stock making planning imperative for communities.

With the support of the City Council, the City of Menasha Parks and Recreation Department took steps to plan for EAB's impending arrival in the City. In 2010, they applied for and received a WDNR Urban Forestry Grant for $7,000 to conduct a tree inventory and write an EAB plan. The tree inventory and EAB plan will assist and guide the City in managing EAB and its urban forest. Some elements of the plan consists of the history of EAB in North America and how to identify both the EAB and an ash tree; tree inventory results; preparation, detection, and control management options; wood utilization options; outreach and education efforts; and costs/budgets.

## II. Assessment of Menasha's Public Trees

During the summer of 2010 a tree inventory was completed of the City's street, park, and other publically owned trees. With this information in hand regarding the number of trees and their condition the City can more effectively plan for EAB and evaluate the different management options available.

The results of the inventory showed that there are 4401 publically owned trees, over 700 or 17% of them are ash trees (Table 1.0 and Figure 1.0). However, upon review of the data, EAB and the number of ash are not the only issue of concern to the City. The City also has 123 dead or critical trees (26 of them ash) that could potentially fail putting the community at risk. There are also an additional 283 trees in poor condition that will need to be monitored over time (Table 2.0).

Table 1: Total number and percentage of publically owned trees by general tree type.

| Tree Type | Total | % |
|---|---|---|
| Ash | 733 | 16.7 |
| Elm | 186 | 4.2 |
| Honeylocust | 231 | 5.2 |
| Linden | 172 | 3.9 |
| Maple | 1446 | 32.9 |
| Oak | 168 | 3.8 |
| Evergreen | 338 | 7.7 |
| Ornamental | 743 | 16.9 |
| Other | 384 | 8.7 |
| **Grand Total** | **4401** | **100.0** |

Figure 1: Percentage of publically owned trees by general tree type.

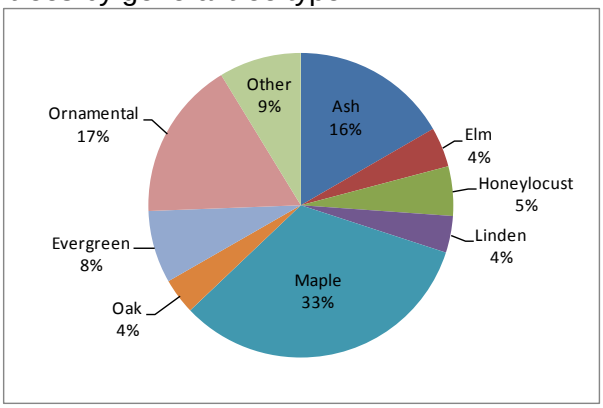


Table 2: Total number and percentage of publically owned trees by condition class and district.

| Condition | District 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Cemeteries | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Good | 941 | 423 | 224 | 147 | 214 | 454 | 193 | 244 | 84 | 2924 | 66.4 |
| Fair | 314 | 172 | 110 | 116 | 66 | 153 | 39 | 59 | 42 | 1071 | 24.3 |
| Poor | 75 | 29 | 32 | 29 | 9 | 63 | 10 | 21 | 15 | 283 | 6.4 |
| Critical | 33 | 11 | 9 | 14 | 4 | 13 | 1 | 5 | 8 | 98 | 2.2 |
| Dead | 7 | 3 | 1 | 1 | 0 | 0 | 1 | 10 | 1 | 25 | 0.6 |
| **Grand Total** | **1370** | **638** | **376** | **307** | **293** | **683** | **244** | **339** | **150** | **4401** | 100.0 |

## III. Private Trees and Community Outreach

When considering the overall health of the community's forest, another concern is that the majority of a community's trees are typically located on private property, not public. Although the exact number of ash trees in citizen's yards is not known, a general rule of thumb is 10 private ash trees for every 1 ash street tree. Therefore, with the potential of thousands of trees being infected with EAB and removed within a short amount of time, the City will be faced with the question of what to do with the wood debris.

In addition, with the potential number of ash trees on private property it will be important to have effective communication and outreach with citizens to help them understand their options for managing ash trees in their own yards and to increase awareness, understanding, and support for the City's EAB Readiness Plan. One way in which this will be done is through an Open House that will be held during the second week of December 2010.

## IV. EAB Control Management and Wood Utilization/Disposal Options

The City will need to manage its urban forest both before and after EAB is detected. Control management options vary and there is no one all-inclusive method. However, management options generally fall into one of two categories, preemptive and reactive management efforts in which there are pros and cons to each (Table 3.0). Preventative efforts entail education, preemptive removals, and chemical controls. Reactive efforts delay actions taken until EAB has arrived, and usually entail removing a tree once it is dead or infested with EAB. It could also mean treating a tree with insecticides before it declines in health.

Table 3: Preemptive vs. Reactive Removals

| **Preemptive Removals: Removing ash trees not infested with EAB** | |
|---|---|
| Pros:<br>• Opportunity to spread removal costs over longer time frame.<br>• Reduces problem of dealing with many dead and/or hazardous ash trees at one time.<br>• Opportunity to start the replanting/recovery process right away.<br>• Greater flexibility in organizing removal and routine work schedules.<br>• Ability to utilize ash wood for products or use it as a local source of firewood. | Cons:<br>• Immediate impacts to tree canopy and aesthetics.<br>• Removing healthy ash may create negative feeling in the community.<br>• Does not take into account that research may find an effective control of EAB. |

Table 3: Continued

| Reactive Removals: Removing ash trees which are either infested with EAB or dead | |
|---|---|
| Pros:<br>• Delayed impacts to tree canopy and aesthetics.<br>• No negative public perception or removing healthy trees.<br>• Delayed budgetary impacts until EAB hits.<br>• Further EAB research may offer effective control, minimizing need for removals. | Cons:<br>• If no action is taken to control EAB infestations, studies have shown that the rate of spread will be much faster.<br>• Budget impacts can be severe once EAB is in community.<br>• Replanting funds may not be available due to extreme removal costs.<br>• Cost of removals is usually higher for dead trees. |

When dealing with preemptive removals the City can utilize current wood utilization methods. However, when EAB is found locally, the county(s) will be placed under quarantine. A quarantine puts in place regulations on certain wood products to prevent further spread of EAB through human assisted means. Having a quarantine in place, along with the potential of a significant amount of wood debris coming from citizens, the City will need to evaluate and change current wood utilization and storage methods.

## V. Recommended Strategies and Associated Costs

After careful review of the numbers and budget, a preemptive management effort strategy is recommended for the City of Menasha that will not only manage for EAB but help improve the overall well being of the City's urban forest. Due to the number of dead and critical trees in the city, the strategy will remove and replace all trees rated as dead or critical over a period of two to four years. All trees rated as poor will be monitored yearly for deteriorating conditions and will be progressively removed and replaced over the next ten years. In addition, when EAB is found in closer proximity to the City the use of chemical treatments should be considered as a way to spread removal costs over a longer length of time and to preserve the economic, ecological, and environmental benefits of the trees until replacement trees fill in the urban canopy. This method will be considered as an option for maintaining the tree canopy in some of the parks due to the density of ash trees. However, chemical treatments are not considered a long-term solution.

The EAB Management Plan will not only help the City mitigate damage to its urban forest caused by a pending EAB infestation; it will also help lessen the impact to its budget by spreading tree removal, disposal, and planting costs over time. However, it is important to understand that the overall costs of EAB can be significant (Table 4 & 5). And not knowing exactly when EAB will arrive, it is hard to know how many years the costs can be spread over.

Table 4: Costs of removing all trees in dead, critical or poor condition.

| Condition | # of trees | Removals | | Replacements Costs |
|---|---|---|---|---|
| | | Costs 1* | Costs 2** | |
| Dead | 24 | $936 | $4,104 | $1,374 |
| Critical | 98 | $50,760 | $60,252 | $5,611 |
| Poor | 283 | $115,992 | $148,944 | $16,202 |
| **Grand Total** | **405** | **$167,688** | **$213,300** | **$23,186** |

* Contractor costs, assuming staff can conduct removals on all 0-6" trees and all 6-18" trees not under powerlines.
** Contractor costs to remove all trees.

Table 5: Costs of removing all ash trees

| Condition | # of trees | Removals | | Replacements Costs |
|---|---|---|---|---|
| | | Costs 1* | Costs 2** | |
| Dead | 6 | $0 | $1,284 | $344 |
| Critical | 20 | $7,920 | $10,608 | $1,145 |
| Poor | 57 | $22,968 | $28,548 | $3,263 |
| Fair | 195 | $56,688 | $83,628 | $11,164 |
| Good | 455 | $81,648 | $153,636 | $26,049 |
| **Grand Total** | **733** | **$169,224** | **$277,704** | **$41,964** |

* Contractor costs, assuming staff can conduct removals on all 0-6" trees and all 6-18" trees not under powerlines.
** Contractor costs to remove all trees.

## VI. Conclusion

Although EAB has not been found locally, it is inevitable that it will work its way to the City of Menasha. The potential loss of trees, along with their aesthetic, ecological and environmental benefits, makes EAB the biggest threat to Menasha's urban forest since Dutch Elm Disease. The effects can be detrimental and overwhelming to a community, both financially and physically. However, with proper planning effects on budgets and to the urban forest can be minimized. The recommendations outlined in the City's EAB Readiness Plan will help ensure that the City of Menasha has an effective response to EAB while planning for a healthy sustainable urban forest resource.

## VII. Appendices

Map 1.0: Ash Trees Located in District 1

Map 2.0: Ash Trees Located in District 2

Map 3.0: Ash Trees Located in District 3

Map 4.0: Ash Trees Located in District 4

Map 5.0: Ash Trees Located in District 5

Map 6.0: Ash Trees Located in District 6

Map 7.0: Ash Trees Located in District 7

Map 8.0: Ash Trees Located in District 8

Map 9.0: Ash Trees Located in Resthaven & Oak Hill Cemeteries

# Ash Trees Located in District 1

August 2010

Menasha

1,500 750 0 1,500

Feet

Ash Trees (96)

District Boundary

Map 1.0

# Ash Trees Located in District 2

August 2010

Ash Trees (116)

District Boundary

1,000 500 0 1,000

Feet

Map 2.0

# Ash Trees Located in District 3

August 2010

Ash Trees (74)

District Boundary

440 0 880

Feet

Menasha

Map 3.0

# Ash Trees Located in District 4

August 2010

Ash Trees (65)

District Boundary

225 0 450

Feet

Menasha

Map 4.0

# Ash Trees Located in District 5

August 2010

Ash Trees (42)

District Boundary

1,600 800 0 1,600

Feet

Map 5.0

# Ash Trees Located in District 6

August 2010

Ash Trees (160)

District Boundary

1,000 500 0 1,000

Feet

Map 6.0

# Ash Trees Located in District 7

August 2010

Ash Trees (69)

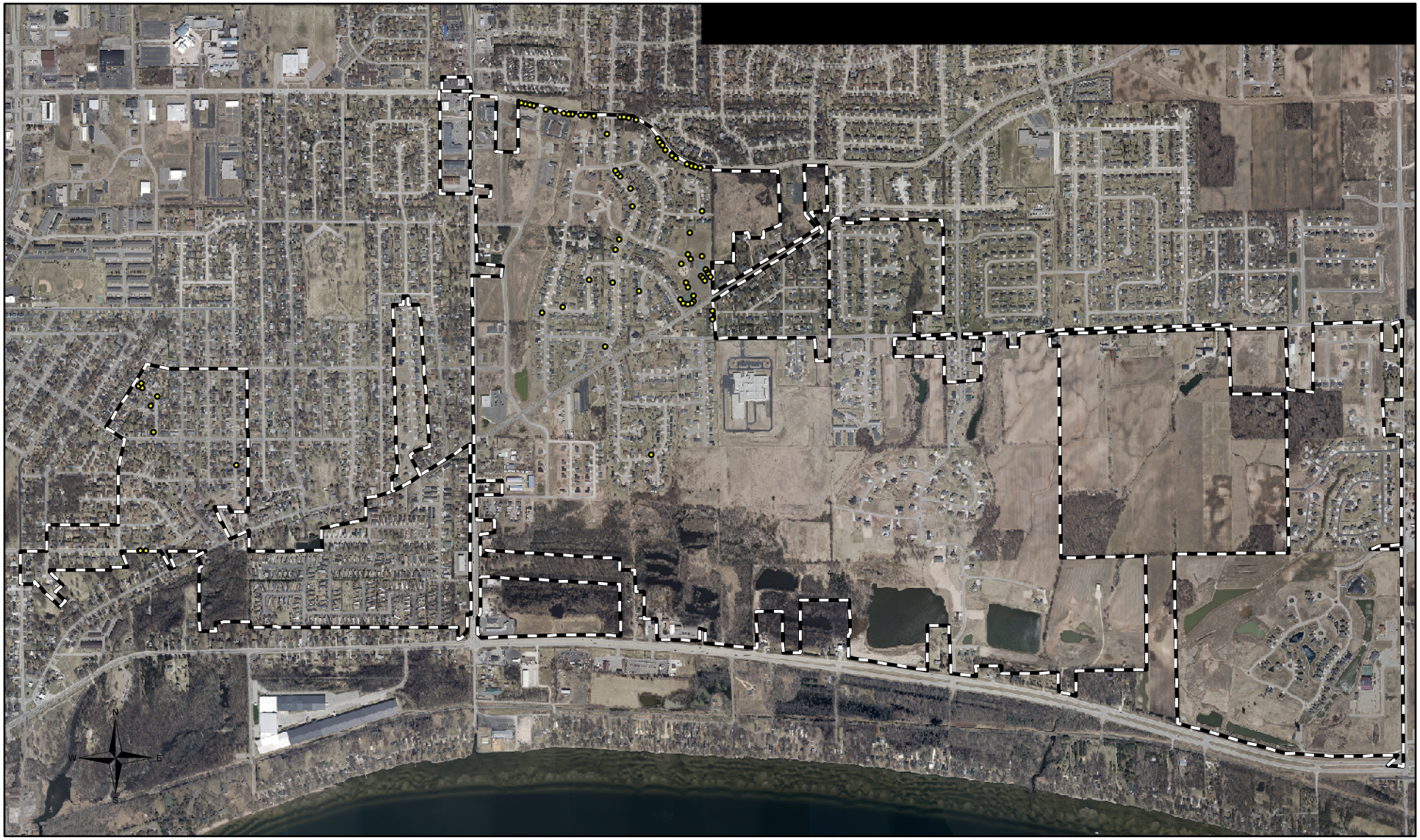
District Boundary

240 0 480

Feet

Menasha

Map 7.0



# Ash Trees Located in District 8

August 2010

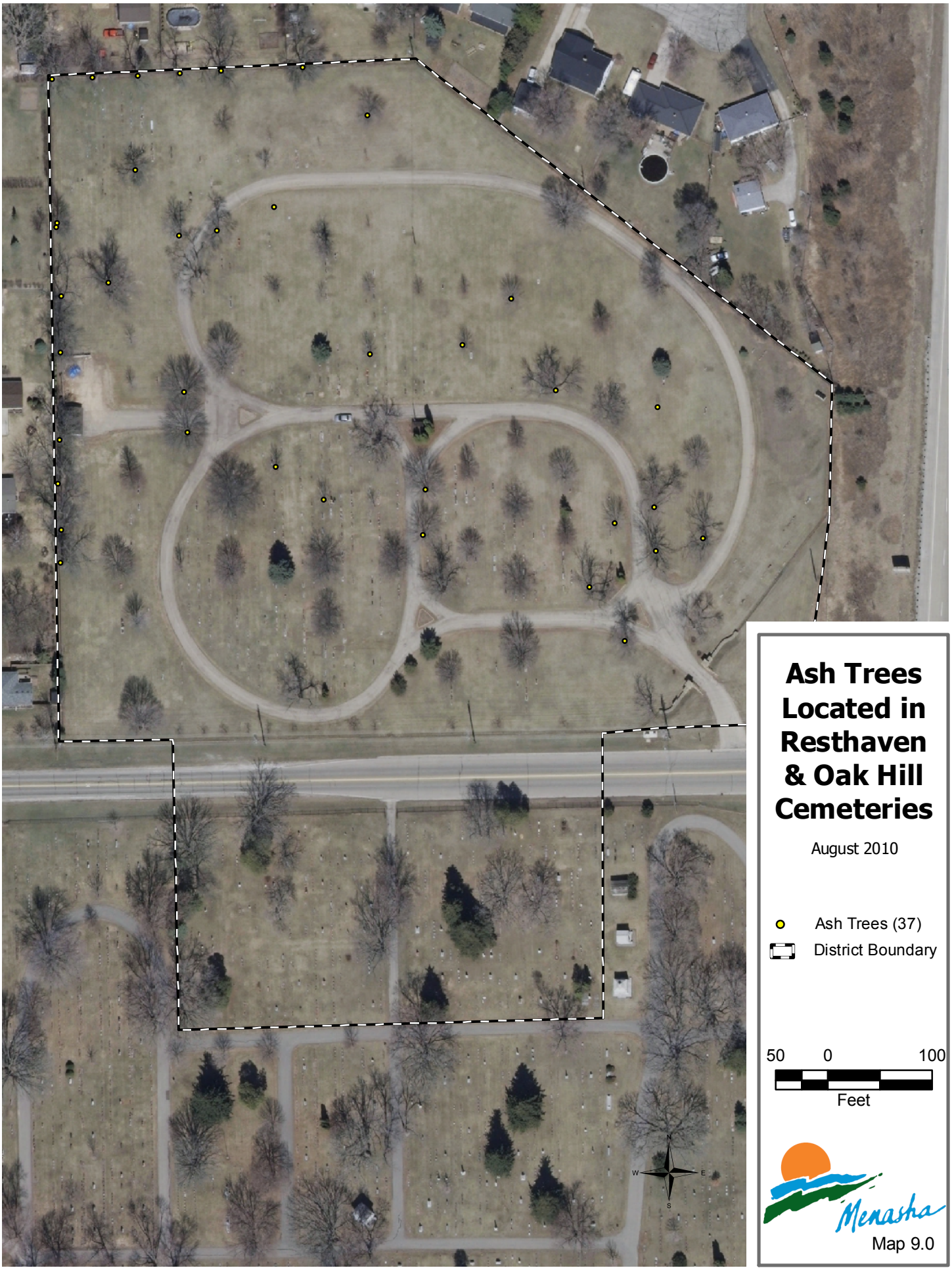
Ash Trees (74)

District Boundary

2,000 1,000 0 2,000

Feet

Map 8.0




# Ash Trees Located in Resthaven & Oak Hill Cemeteries

August 2010

Ash Trees (37)

District Boundary

50 0 100

Feet

Menasha

Map 9.0