



## City of Saint Paul, Minnesota

# Emerald Ash Borer Management Program Annual Report December 13, 2011

Emerald Ash Borer was first discovered in Minnesota on May 13, 2009 in the city of Saint Paul's South Saint Anthony neighborhood. The City of Saint Paul, working with partners such as the Minnesota Department of Agriculture (MDA) and United States Department of Agriculture (USDA), responded immediately by removing all newly discovered infested trees. Simultaneously, the City drafted a comprehensive Emerald Ash Borer (EAB) Management Program which was adopted and implemented beginning in January, 2010.

2011 was Year II of implementation. The following summarizes the events of 2011 to date along with recommendations moving into Year III, 2012.

### **Budget**

As a result of the discovery of EAB in 2009 the State of Minnesota set aside \$2 million of the newly created Outdoor Heritage Legacy Fund to be used beginning in 2010 in the battle against this new threat. Access to the funding was made possible through the Forest Protection Reserve grant that the City applied for and was subsequently awarded \$722,600. It was through this grant, and a smaller amount of city funds, that the City began implementation of its EAB management program in 2010 with a total budget just under \$1 million.

The State grant, however, was one-time funding lasting only seventeen months, and ultimately replacement funding would be needed to sustain the program after May 31, 2011. In response, the City increased the Right-of-Way (ROW) assessment fee to city property owners an average of 2.0% for 2011. This new funding has allowed the EAB program to continue along city ROW boulevards at its current pace which is the removal and replanting of 1000 to 1,500 ash trees annually along with pesticide treatment of 300-500 trees. However, current funding will not be sufficient to handle future demands if infestation expands as expected. Testimonies from other affected communities warn that EAB will expand rapidly within ten years, and the numbers managed currently could easily double or triple requiring a proportionate increase in budget.

A complicating factor is that ROW assessment funding does not cover the cost of EAB management in parks, open spaces, or private property. As a result, sources of funding will be needed for these areas as well.

Finally, management of EAB requires knowledge of current conditions of the urban forest, i.e., an inventory to direct management needs. The City has been working on an inventory of ROW boulevard trees and thus far has completed 6 of the 17 districts. It is imperative that the City continue its investment in finishing this inventory, using Davey TreeKeeper software, to allow for the best management decisions going forward.

## **2012 Recommendations - Budget:**

- **Continue, and strive to complete, the inventory of street boulevard trees**
- **Monitor EAB demands and prepare accordingly during the 2013 budget process for all aspects of the program, including funds for reforestation**
- **Seek funding for non-ROW parks and open space work, including outside sources such as grants**
- **Seek ways to assist or ease the demands on property owners with ash trees, whether through increased communication/outreach or financial incentives**

## **Infested Ash Trees**

Removal of EAB infested trees is the first priority in the City's response plan with the goal of slowing the spread to other areas while providing the City the most time possible to manage its response. As such, the City removed 101 infested trees in 2011, all within one mile or so of the original infestation near South Saint Anthony (District 12). Despite this effort, a new discovery of EAB was made September 20, 2011 in the Summit-Dale neighborhood (spanning both Districts 8 and 16)

There, six trees were newly identified as positive for EAB and immediately removed. This new discovery is significant in that it is over three miles from the closest known EAB infestation, confirming that EAB is not confined to one area and is spreading as predicted. It will also require the City to add Summit-Dale to the more rigorous management strategies of an infested area, including increased inspection, sampling of 'suspect' trees (those thought to be infested based on amount of woodpecker activity), removals and pesticide use.

2011 also saw an increase of EAB in Minneapolis, southeast Minnesota and the city of Shoreview. The spread in Minneapolis included finds on both the East and West banks of the Mississippi river bluffs, indicating a potential presence on the adjacent river bluffs in Saint Paul. The concern is that once established in these difficult to access natural areas, which act as natural corridors, the spread of EAB could accelerate unabated.

Similarly, the spread of EAB on private property is undoubtedly occurring. While the City has an ordinance allowing access to private property in search of EAB, it is still difficult to confirm much less order the removal of a suspect tree on someone's private property. In 2011, the City ordered the removal of 74 trees on private property, making a grand total of 124 condemned private trees since EAB was first discovered. However, it is felt that this number is likely far less than the actual amount of infested trees on private property.

A possible new weapon in the fight against EAB, biological control, was introduced in 2011 by the USDA, first in Langford Park (and Minneapolis) and recently in the Summit-Dale area. In short, biological control is the release of natural predators of EAB with the goal of bringing EAB populations into balance and reducing damage to ash trees. In this case, the natural enemies are three species of parasitoid wasps approved for release. These wasps are tiny to the eye, harmless to humans, and have been tested to ensure that they will not negatively impact other species or the environment. These wasps attack either the egg or larval stage of EAB under the bark of ash trees. At this point, it remains to be seen if these wasps can become well enough established to be an effective control option. In any case, experts do not predict biological control to be a quick

or permanent solution to EAB alone, but rather it may give us a longer time frame to manage EAB by balancing the population and prolonging the EAB “explosion” that many managers claim to be a foregone conclusion.

### **2012 Recommendations – Infested Ash Trees:**

- **Prepare to remove 300 or more publicly owned EAB infested trees**
- **Investigate reasonable options for managing infested trees in difficult areas such as river bluffs**
- **Increase inspection and sampling to determine the spread of EAB**
- **Increase inspection for and removal orders of EAB infested private property trees**
- **Work with the USDA in monitoring the effectiveness of biological control**

### **Removal of Non-Infested Ash Trees**

Structured Removal, the proactive, systematic removal and replacement of non-infested trees in a planned or “structured” approach, continued successfully in 2011. The program has focused on larger pockets of declining ash trees, those with general health problems, structural defects or greater than 30% die back in the tree’s canopy. For 2011, the City adjusted Structured Removal to leave any trees in a project area that did not meet the criteria of a declining ash tree. With the exception of infested areas, Structured Removal focused on areas of the city that have the worst cases (highest rates or large monocultures) of declining ash trees rather than an approach that attempted to spread removals equally to all Council Wards, as was the case in 2010. Structured Removal is avoided in areas of known infestations (currently Planning Districts 12, 8 and 16) to satisfy the energy requirements of existing adult beetles (if all ash trees were immediately removed, i.e., ‘sanitation’, then adult beetles would be forced to fly further to find trees for food and reproduction).

Along with other individual ash removals and “opportunity-based” programs, such as RSVP street reconstruction projects, the City removed 1,310 non-infested ash trees in 2011. Most of these are along ROW boulevards where it is estimated there are approximately 25,000 ash trees alone. However, it is estimated that there may be twice as many ash trees in public parks and open spaces, as well. Since the beginning of the EAB program, including all types of ash removals, the City has removed a total of just under 3,000 publicly owned ash trees across the city, or approximately 5% of the total population.

With the expected spread of EAB to more areas of the city, the number of infested trees in need of removal will increase, thus reducing the number of Structured Removals accordingly unless funding is increased. In short, without increased funding as soon as 2013, the City may fall behind in its current pace to proactively manage this growing problem.

### **2012 Recommendations – Removal of Non-Infested Ash Trees:**

- **Continue Structured Removal, focused on non-infested areas of the city with the most/worst declining ash trees**
- **Continue to leave any ash in project areas that do not meet the criteria of a ‘declining’ tree**
- **Continue opportunity-based programs, such as RSVP street reconstruction, to**

**remove and reforest areas, allowing residents to ‘opt out’ where ash trees are in reasonable condition and are not in conflict with construction**

## **Pesticide Use**

2011 saw the City’s first use of pesticides as another tool in the fight against EAB. Limited pesticide use was originally proposed as part of the City’s management program in 2010 but not implemented due to a reduced State grant award (\$722 K rather than \$1 million). After developing treatment criteria, the city initiated use of a chemical (TREE-äge®, or Emamectin Benzoate) which is injected directly into the trunk of the tree. This past summer 299 trees in the infested area (one of the criteria), i.e., District 12 and surrounding area were treated with the chemical and “tagged” with aluminum tree tags.

The City’s goal for pesticide use on boulevard trees is to reduce beetle populations in infested areas, rather than the purpose of saving trees in the long-term. Ash pesticide treatments must be repeated at regular intervals (every 2-3 years) for the life time of the tree in order to insure long-term survival, creating an ongoing, ever-increasing expense to the City, both in number of trees treated and amount of pesticide needed per tree.

An added benefit to the treatment program is that in treating the healthiest ash trees, the urban forest will continue to derive the many benefits of large canopy shade trees while reforestation efforts take hold. Although concerns exist over increased use of pesticides, arguably, an even greater environmental impact exists for the loss of the many benefits provided by large canopy shade trees.

### **2012 Recommendations – Pesticide Use:**

- **For the City to continue use of TREE-äge® pesticide injection as one of its tools to slow the spread of EAB, limited to areas of known infestation (currently District 12 and now Districts 8 and 16) and working outward**
- **Prepare to treat 400 new trees in 2012 using criteria developed in 2011: public trees in good health and structural condition; between the size of 10-20 inch caliper dbh; and in favorable locations (no overhead utilities, wide vs. narrow boulevards)**
- **That pesticide use is limited to easily accessible boulevard and park (should park funding become available) ash trees and harder to access natural areas are avoided**
- **That the City continue to issue permits to residents who would like to treat their boulevard ash tree at their own expense so long as it meets permit criteria**
- **That the City evaluate an expanded pesticide budget, if it chooses to increase the use of that management option (see following spread sheet analysis of projected costs through 2020)**

Pesticide Expense Projection Scenario Treating Trees Every Three Years with TREE-äge®

	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	Total trees	x \$100
<i>2011</i>	<b>300</b>										300	\$ 30,000.00
<i>2012</i>		<b>400</b>									400	\$ 40,000.00
<i>2013</i>			<b>500</b>								500	\$ 50,000.00
<i>2014</i>	<i>300</i>			<b>600</b>							900	\$ 90,000.00
<i>2015</i>		<i>400</i>			<b>700</b>						1100	\$ 110,000.00
<i>2016</i>			<i>500</i>			<b>800</b>					1300	\$ 130,000.00
<i>2017</i>	<i>300</i>			<i>600</i>			<b>900</b>				1800	\$ 180,000.00
<i>2018</i>		<i>400</i>			<i>700</i>			<b>1000</b>			2100	\$ 210,000.00
<i>2019</i>			<i>500</i>			<i>800</i>			<b>1100</b>		2400	\$ 240,000.00
<i>2020</i>	<i>300</i>			<i>600</i>			<i>900</i>			<b>1200</b>	3000	\$ 300,000.00

- In this scenario, **8,400** total ash trees are in treatment program by year 2020 (bolded numbers).
- Italicized numbers are retreated trees every third year, per guidelines using TREE-äge®.
- Costs rise with more trees treated and/or more years beyond 2020.

## Reforestation

Replanting as ash trees are removed may be the most important part of the EAB Management Program. Reforestation with a diverse pallet of young trees is the primary objective in retaining our urban forest and reducing the chance of future wide-spread, devastating tree loss events caused by biological factors. While it is impossible to avoid the onset of pests and diseases, avoiding monocultures through diversity and mixed planting schemes can help reduce the impact.

The goal of the EAB Management Program from the beginning has been to replant a new tree for every ash tree lost. So far, we have been able keep that commitment. However, if EAB spreads rapidly and funding does not keep pace, replanting could well fall behind the number of trees removed. All the more important that both residents and officials understand the many benefits that trees provide and the financial as well as environmental impact that will occur if we do not maintain adequate reforestation as part of the program.

In 2011, the City will have planted 3,316 trees, nearly half directly related to ash removal/reforestation efforts. The remaining trees are replacements for trees lost under other circumstances. All of these trees are 2 inch minimum caliper trees planted through a private contractor.

The City annually plants thousands of other, albeit, smaller trees through other natural resource projects, some using volunteers or service projects. Though not directly related to the EAB Management Program, these trees nevertheless add to efforts in maintaining the urban forest. For example, a City-led Arbor Day planting utilized volunteers and service members to plant thirty-eight 1 ½ inch caliper trees and three thousand oak seedlings in Crosby Park.

The City also completed its third year of an agreement with the University of Minnesota, Department of Horticultural Science, in planting 165 trees raised for research and monitored for long term health and success in the urban environment.

Citizen forestry outreach efforts aimed at engagement of communities in planting and maintaining trees are ongoing. The goal is to have citizens actively assisting the City with public spaces, or helping neighbors plant on private property. A successful pilot demonstration project working with the Frogtown community took place in October where nearly 20 trees were planted on city boulevards. The hope is that programs like this can be expanded in future years to other communities.

Finally, the City received the results of a tree canopy assessment by the University of Minnesota earlier this year. The information from the assessment has been utilized by Forestry staff to demonstrate areas that may benefit significantly from increases in canopy. All information on the study is available to citizens on the Forestry web site. Information from it will be used to help guide and create goals and policy for both maintenance of existing trees and planting new trees in the future.

### **2012 Recommendations - Reforestation:**

- **Continue to plant a replacement tree for every ash tree removed on boulevards, using mixed planting schemes and a diverse palette of tree species**
- **Continue natural resource related planting projects in park spaces to off set the loss of ash trees, seeking grants and other funding opportunities**
- **Continue with year four of the partnership with the University of Minnesota to plant up to 200 new research trees in our park system**
- **Continue to develop planting goals, guidelines and policy based on the results of the Urban Tree Canopy Study, especially in areas with higher ash tree populations**

### **Outreach**

Citizen forestry is just one example of the outreach efforts made by Saint Paul Forestry. Additionally, a Community Forest Management Plan is in the final stages of completion expected early in 2012. Public meetings, especially in regards to EAB and Structured Removal, have been held in affected communities. Information on EAB is posted at [www.stpaul.gov/EAB](http://www.stpaul.gov/EAB), and additional information on all aspects of forestry can be found at [www.stpaul.gov](http://www.stpaul.gov) (follow links to Forestry page). The Natural Resources Unit, of which Forestry is a part, has its own Facebook page, allowing for a connection to the community through social media. 2011 even saw a foray into YouTube, creating an educational piece on watering trees during a drought. The results of the canopy assessment are available via the Forestry web site.

Several web accessible and paper hand outs were created in 2011, some directly or indirectly related to EAB outreach or management work. These include:

- “Missed You” door hanger explaining service provided
- Tree Planting door hanger
- FAQ for private property owners who have an ash tree
- Update FAQ on EAB
- Structured Removal post cards and mailings
- And a soon to be distributed hanger on Tree Watering Bag availability and usage
- An updated Tree Work Permit available both electronically or hard copy

**2012 Recommendations - Outreach:**

- **Continue EAB public meetings as needed as the infestation spreads**
- **Increase social media connections by coupling incentives, such as giveaways or “exclusive deals”, to visitors of our site, e.g., discounts to a commercial tree nursery**
- **Expand citizen forestry, including forging partnerships with other interested organizations such as the University of Minnesota**
- **Continue to improve and update the Forestry and EAB web sites to provide critical information that citizens need, especially regarding EAB and ash trees**
- **Expand efforts to assist citizens in dealing with private property ash trees, whether in guidance on the use of pesticides, or managing removal and planting of replacement trees**