



## City of Saint Paul, Minnesota

# Emerald Ash Borer Management Program 2013 Annual Report

Emerald ash borer (EAB) was first discovered in Minnesota on May 13, 2009 (est. infestation of 2005) in the city of Saint Paul's South Saint Anthony (SSA) neighborhood. The City of Saint Paul, Department of Parks and Recreation, Forestry Unit took immediate and continued action in response to this finding, including the development and implementation of the City's EAB Management Plan. To date, management, in simplified terms, has focused on slowing the spread of EAB to other areas of the city and state using a variety of strategies. 2013 was Year IV of the EAB Management Program and this document summarizes the events of the year along with management recommendations and budgetary concerns moving into Year V, 2014. The following document is organized according to the original Management Plan core strategies listed below along with a category focused on budget:

- Monitoring/Inspection
- Inventory
- Sanitation
- Structured Removal
- Pesticide Use
- Reforestation
- Outreach

### Monitoring/Inspection

The prompt removal of EAB infested trees continues to be the first priority of the Management Plan with the goal of slowing the spread of EAB to other areas while providing the City an extended timeframe in which to manage its response. In order to accomplish this goal, regular monitoring and inspection for EAB is key information needed to act upon.

In 2013, the City implemented the more rigorous management strategies of an infested area including: increased inspection; removal orders and abatements of private property trees; removal and sampling (logs provided to Minnesota Department of Agriculture [MDA] for data collection) of public trees; and insecticide treatment of public trees in the Como Park neighborhood.

Metro-wide, the following infestations have been found since 2009 through monitoring:

<i>Location</i>	<i>Date Discovered</i>	<i>Date Infested (estimate)</i>
Minneapolis, Tower Hill Area	February 2010	2006-07
Shoreview	July 2011	2008
Summit-Dale neighborhood	September 2011	2007
Fort Snelling Golf Course	August 2012	2007
Minneapolis, NE neighborhood	November 2012	2009
Saint Paul, River corridor	November 2012	
Saint Paul, Como Park area	January 2013	
Saint Paul, Pigs Eye WRC	January 2013	
Minneapolis, Lakewood Cemetery	January 2013	
Roseville, New Brighton, Arden Hills	2013	
Saint Paul, Dayton's Bluff neighborhood	January 2014	

As listed above, 2013 was the year EAB was identified in Como Park, the surrounding neighborhood (McMurray fields and east into residential area), and southward along Lexington Parkway. Infested trees were also identified and removed along the roadside leading into the Pigs Eye Wood Recycling Center. Much of the area surrounding Pigs Eye will be difficult-to-access bluff land much like the conditions in the northwestern part of the city along the Mississippi River corridor.

The continued spread of EAB on private property undoubtedly lends to increased population build up. While city ordinance allowing for the inspection and condemnation of private property ash trees has helped, it is still difficult to confirm much less order the removal of a suspect tree on one’s private property. Thus, as before, many infested trees remain in the landscape, providing food and egg-laying sites for EAB, longer than they would on public property—potentially years longer.

Saint Paul Forestry has not been alone in the battle against EAB. Since the initial discovery in Saint Paul, the MDA had been a constant and invaluable partner in the fight. MDA employees spent hundreds of hours in assisting with the annual ash tree inspections in Saint Paul. In fact, a MDA staff person discovered the Summit-Dale infestation in 2011 while in the area. Unfortunately, in 2012-13, the MDA did not have the funding or staff levels to assist with the annual inspection of ash trees. In a reverse of fortune, however, the MDA has secured LCCMR funding for 2013-2014 and will be able to, once again, assist with inspections. While this assistance is both welcome and valued it is important to point out that increasing staff levels internally will be necessary in future years as Saint Paul Forestry are the ones to actually find and condemn infested trees, and MDA staff support most likely can’t be depended upon in future years.

**2014 Recommendations—Monitoring/Inspection:**

- **Increase inspection in infested and “high risk” areas (eg: Como Park & Mounds Park) to determine the spread of EAB**
- **Increase inspection for and removal orders of EAB infested private property trees**
- **Increase staff hours in terms of annual survey of ash trees**

**Inventory**

Successful management of EAB requires the knowledge of current conditions of the urban forest, i.e., an inventory to direct management needs. As such, Saint Paul Forestry has been working on an inventory of boulevard and parkway trees since 2009 using a web-based inventory/services management program. It is imperative that the City finish this inventory and, fortunately, it is coming closer to completion of the seventeen (17) Planning Districts.

To assist in this effort, the Friends of the Parks and Trails of Saint Paul and Ramsey County donated \$4,000 in 2013 to Saint Paul Forestry. This generous donation was put to good use as four additional districts were completed bringing the total now to fourteen, three shy of completion.

Forestry has also employed citizen volunteers to assist the inventory effort, beginning in 2012 and expanding the total number of volunteers involved to fifteen in 2013. The new volunteers were trained in May and spent the summer inventorying over 50 blocks in the Dayton’s Bluff area. A volunteer was also recruited to enter the collected data into the Davey TreeKeeper 7 program, eliminating a large number of staff hours that would have otherwise been spent working on this project.

<b>Year Completed</b>	<b>District Numbers</b>	<b># of Districts Completed</b>
2010	3, 11, 12, 13	4
2011	7, 10, 14, 15	4
2012	2, 9	2
2013	5, 6, 8, 16	4
<b>Total # of Districts Completed to Date</b>		<b>14</b>

Again, it is of the utmost importance that the inventory is not only completed, but that future funding is allocated to the continued maintenance of this dynamic system so that an accurate picture of the urban forest is available both for management and historical purposes.

#### **2014 Recommendations—Inventory:**

- **Plan to complete street tree inventory in the remaining 3 planning districts (1, 4 and 17)—all of which have been started.**
- **Continue to keep current inventory information up-to-date (new plantings, removals, etc) both related to ash trees and other species.**

## **Sanitation**

As stated earlier, the prompt removal of EAB infested trees is the first priority in the City’s management plan. As such, in 2013 the City removed 133 infested trees from the various infested areas, including 42 park trees. The City also ordered the removal of 191 trees on private property, making a grand total of 430 condemned private trees since EAB was first discovered.

Moving forward, the concern over infested private trees is matched by the concern for ash trees in difficult-to-access natural areas such as river corridor bluff land. The difficulty and cost of finding and removing these trees will likely prevent prompt attention and thus lead to unchecked population growth. As mentioned in previous reports, one tool for these areas is biological controls in the form of three species of parasitic wasps which have been released in Saint Paul since 2011. A promising discovery came recently in SE Minnesota when MDA staff found eggs of one of the parasitic wasp species showing that the wasps are in fact reproducing in the wild and killing EAB while doing so. To be clear, though experts predict that the wasps may extend the time frame to manage EAB by balancing the population and prolonging the onset of an EAB “explosion” experienced in other states, it is not thought to be a “silver bullet” solution to EAB.

#### **2014 Recommendations—Sanitation:**

- **Prepare to remove 150-200 publicly owned EAB infested trees**
- **Prepare for the condemnation of 250-300 privately owned EAB infested trees**
- **Investigate and begin implementation of reasonable management options for infested trees in the river corridor**
- **Continue to work with the MDA in monitoring the efficacy of biological controls (through branch sampling projects and wasp releases).**

## **Structured Removal**

Structured Removal (SR)--the proactive, systematic removal and replacement of non-infested ash trees in a planned or “structured” approach--continued successfully in 2013. The removal of non-infested ash trees, trees primarily in declining health, helps to reduce the number of ash trees that would eventually have to be dealt with while spreading out the available time, cost and resources to do so. Because Forestry is primarily budgeted through the City’s right-of-way (ROW) assessment, the vast majority of Structured Removal takes place on boulevard trees.

As mentioned, the SR program has focused on pockets of declining ash trees (>30% dieback in the canopy), those with general health problems, structural defects such as old bolt/cable installations, and those growing beneath utility power lines. SR has also been concentrated on areas of the city that have the worst cases (highest rates or large monocultures) of declining ash trees. In previous years these removals were restricted in infested areas so that energy requirements of current EAB are sustained (i.e., if they don’t have food they will just fly further to find it), but this approach is becoming increasingly difficult as more areas of the city become infested (currently

~1/3 of the city is considered infested). As such, overlap between strategies will inevitably begin to occur in 2014 and future years of SR and infested area removals (see 2014 SR map of Ward 5/Lexington Pkwy as an example).

Added together with individual ash removals and “opportunity-based” programs, such as the Department of Public Works’ Residential Street Vitality Program (RSVP), the City removed **1,170** non-infested ash trees in 2013. Most of these are along ROW boulevards where it is estimated there are still ~21,000 ash trees alone. Since the beginning of the EAB program, including all types of ash removals, the City has removed a total of just over 4,800 right-of-way ash trees across the city through then end of 2013.

With the inevitable spread of EAB to more areas of the city in coming years, the number of infested removals will eventually overtake the number of SR trees unless funding is increased to keep pace with current SR rates. In short, without increased funding, the City will fall behind in its efforts to proactively reduce the large number of non-infested ash trees throughout the city.

In planning for EAB in parks (non-ROW areas), Forestry has inventoried the mown areas of the large Regional parks along with smaller neighborhood parks. In so doing, just under 2,000 ash trees were found that will need to be dealt with in some way. Unfortunately, this inventory does not yet include parkways or the three municipal golf courses. Johnson Parkway alone has around 700 ash trees. Currently, Forestry’s best guess is an estimated 10,000 ash trees in parklands that will need to be dealt with over the course of the EAB program including trees on borderlines of wooded areas or along nature paths that may become hazardous once they die.

With the majority of the EAB program funded through ROW assessments, the City has relied upon the Parks general fund budget for work on ash trees in parks, a fund that is a fraction of what will be needed. Nevertheless, using limited funding in 2013, Forestry removed 58 non-infested ash trees from various parks this past year.

#### **2014 Recommendations—Structured Removal:**

- **Perform Structured Removal of ash to bring the annual total number removed from city ROW’s to 1,300 trees**
- **Continue to focus SR on areas of the city with high numbers of ash trees in decline, under utilities, or showing other signs of health issues.**
- **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.**
- **Continue with the removal of 100 ash trees in city parks (turf/managed areas) annually.**
- **Continue to leave any ash in project areas that do not meet the criteria of a ‘declining’ or structurally defective tree.**
- **Identify for the 2015 budget what is needed for increased Structured Removal resources, both in ROW and Parks general fund budgets.**

#### **Pesticide Use**

The City’s current goal for pesticide use for EAB on public trees is to reduce beetle populations in known infested areas, rather than for the purpose of preserving ash trees for the long-term. The City generally selects trees for treatment that meet certain criteria, depending on the goal of the particular treatment. In most cases, the trees selected are of better quality condition and candidates that could be kept in the landscape for the long term, if so decided. For a chosen tree’s survivability, treatments must be repeated at regular intervals (every 2-3 years) for the life time of the tree, creating an ongoing, ever-increasing expense to the City, both in number of trees treated and the cumulative amount of pesticide needed per tree.

One advantage of the treatment program is that in treating select ash trees, the city will continue to derive the many environmental and social benefits of large canopy shade trees while reforestation efforts take hold. Although concerns exist over use of pesticides, arguably, an equal environmental impact exists for the potential benefits lost that are provided by large canopy shade trees.

In 2013, the City planned to expand the pesticide injection treatment of ash trees both in area and quantity with a goal of treating 500 trees including those treated in 2011. However, due to constraints caused by the June 20-21 storms on staff resources, this goal was not reached. In total, 282 trees were treated in 2013 (215 retreatments of 2011 treated trees and 67 first time treatments). For 2014, sixty-seven trees from 2011 will need to be retreated as they were not completed in 2013.

Forestry continues to use the same insecticide, TREE-äge®/active ingredient emamectin benzoate, administered through trunk injection (versus soil drenches or other methods). Injecting the chemical directly into the tree is meant to reduce exposure of pesticide to other non-targets. Further, the chemical emamectin benzoate is not a neonicotinoid-based chemical which has come under increased scrutiny for the possible decline in bees. All treated trees have an aluminum tag attached to them with the most recent year of treatment, e.g., “EAB 2013”.

Year Completed	Annual Goal	Actual Total # Treated	1 <sup>st</sup> Treatment	Retreated	Notes
2011	300	299	299	0	
2012	400	400	400	0	Will be retreated in 2015
2013	500	282	67	215 (2011)	282 of 299 2011 trees to retreat (some removed and others in poor condition)
2014	900			67 (2011)	733-new ROW, 100-new PKS

**2014 Recommendations—Pesticide Use:**

- **Continue use of TREE-äge® pesticide injection as one tool to slow the spread of EAB, geographically limited to areas surrounding known infestations (as of this writing, planning Districts 4, 6, 7, 8, 9, 10, 11, 12, 13 and 16).**
- **Prepare to treat 900 trees in 2014 using criteria developed in 2011:**
  - ✓ **public trees in good health and structural condition**
  - ✓ **10-20 inch diameter at breast height (DBH)**
  - ✓ **in favorable locations (no overhead utilities, wide vs. narrow boulevards)**
- **That pesticide use is limited to easily accessible boulevard and park ash trees while harder to access natural areas are avoided.**
- **That the City continue issuance of free 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 the need for an expanded pesticide budget, if it chooses to increase the use of that management option.**

**Reforestation**

Replanting as ash trees are removed is arguably 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, the City has been able keep that commitment. However, if EAB spreads rapidly and funding does not keep pace, the concern is 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 2013, the City planted over 2,400 trees, nearly half directly related to ash removal/reforestation efforts. The remaining trees are replacements for trees of other species lost under other circumstances. All new planted trees in the EAB program trees are 2 inch minimum caliper trees planted by a private contractor. The above information does not include thousands of trees planted in parks through the Environmental Services unit of the Parks Department. The slight decrease in number of trees planted by Forestry in 2013 compared with 2012 exhibits the impact of increasing tree prices in conjunction with a decrease in CIB funding since 2011. This is a trend that is expected to be amended in 2014.

To assist in maintaining the commitment to replanting, in 2013, the City of Saint Paul/Forestry completed the planting of 771 trees (started in 2012) with monies awarded through a DNR Bonding Grant in the amount of \$150,000 on city right-of-ways. These replacement trees do not necessarily replace an ash tree, but rather any vacant planting site in the right-of-way within one mile of an infested ash tree. Forestry is currently working on final grant paperwork so that reimbursement can be sought in early 2014. Future grant opportunities for additional tree planting are always searched out and applied for when relevant.

### **2014 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 to develop planting goals, guidelines and policy using the results of the Urban Tree Canopy Study, especially in areas with higher ash tree populations**

### **Outreach**

Public meetings in regards to EAB and Structured Removal were again held in affected communities prior to the removal and replacement of trees. Direct mail postcards, information in community newspapers, up-to-date information on the website, social media, and district council offices were all utilized to inform the community of the public meetings. Information on EAB is posted at [www.stpaul.gov/EAB](http://www.stpaul.gov/EAB) and updated frequently. Additional information on all aspects of forestry can be found at [www.stpaul.gov/forestry](http://www.stpaul.gov/forestry) (new link in 2012).

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 Neighborhood community took place in 2012 when 18 boulevard trees were planted in the spring and another 24 shade and edible fruit trees were planted on residential property in the fall. All work took place as a designed partnership/collaboration between City Forestry staff and community volunteers. The hope is that programs like this can be expanded in future years to other communities.

### **2014 Recommendations - Outreach:**

- **Continue EAB public meetings for areas that will be effected by structured removal**
  - **A community member suggestion was to plan meetings in neighborhoods in conjunction with other community meetings in order to achieve higher attendance**
- **Outreach materials (mailings, etc.) should be multi-lingual**
- **Expand citizen forestry, including forging partnerships with other interested organizations or community groups**
- **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**