



The Minneapolis Park and Recreation Board's Emerald Ash Borer Preparedness Plan

Introduction

The Emerald Ash Borer (EAB) is a non-native insect that was introduced to North America from Asia. It was discovered in the Detroit, Michigan / Windsor, Ontario area in 2002 and probably arrived in wood packing materials on cargo ships or airplanes. Despite eradication and suppression efforts, EAB has killed over 20 million Ash trees in Michigan, Ohio, Indiana, Illinois, Maryland and Ontario.

EAB is a beetle that is smaller than a dime. The adult does very little damage. However, this is not the case with the larvae (immature stage) that feed on the inner bark of Ash trees. This feeding disrupts the tree's ability to transport water and nutrients. Larval feeding takes place over a period of years and eventually kills the infested tree. All species of Ash are susceptible. Because EAB is hard to detect, it can be present for years before an infestation is confirmed.

There are currently no known control measures for EAB. This means that it has the potential of killing millions of Ash trees throughout the United States and Canada. In Minneapolis this means approximately 210,000 trees which compose the urban tree canopy on both private and public property. Of these, approximately 38,000 are boulevard trees.

No one can determine when EAB will arrive in Minneapolis but if left to its own natural progression it may be 60 years before it is present. This would give plenty of time to attrition existing Ash trees out of the Minneapolis Park and Recreation Board (MPRB) system. Unfortunately, EAB can travel easily in firewood and nursery stock. This means that despite state and federal quarantines of infested regions, EAB may already be established in the metro area.

Economic Impact

As noted above, there are an estimated 210,000 Ash trees on both private and public property in the City of Minneapolis. This means that when Ash trees begin to die, the biggest financial burden will be felt by private property owners. Utilizing a simple formula for removals, stumping and replanting helps demonstrate the magnitude of this cost. For example, consider an average removal cost of \$150, an average stumping cost of \$75 and an average replanting cost of \$150. At these rates, the economic impact of losing 210,000 trees would be about \$152,000,000.00.

Because of diminishing federal funds, the Minnesota Department of Agriculture's (MDA) EAB management plan is likely to include fewer eradication projects. Cities in Minnesota will probably need to address the EAB invasion with limited local funds. This is why it is important to establish state funded assistance as soon as possible.

Without eradication projects, efforts will be put towards monitoring and regulatory activities. Recognizing this reality, Jim Hermann and Ralph Sievert have become regular participants on the MDA EAB Strategic Planning Team.

"Beat the Beetle" – 15 steps to prepare for the arrival of EAB

The MPRB's Forestry Division has recognized the serious threat posed by EAB. As a result, a fifteen step plan has been developed to proactively implement procedures that will lessen the aesthetic, environmental and economic impact of EAB's arrival. Nicknamed the "Beat the Beetle" campaign; this plan was endorsed by the Minneapolis Tree Advisory Commission in 2006. It was unveiled on March 15, 2007 during an educational session of a meeting of the Minnesota Shade Tree Advisory Committee.

Step #1: Ordinance Revisions

Much of the success that the MPRB has experienced in controlling the spread of Dutch Elm Disease (DED) has resulted from the legislative authority prescribed in local ordinances. Article II of Chapter 10 addresses DED control by declaring DED to be a public nuisance. The ordinance then details the prohibition of the nuisance, the right to enter all premises for inspection, abatement procedures for public and private property, collecting assessments and not interfering with performing the duties that the ordinance imposes.

Because the current ordinance deals only with DED, a revision will be needed to prepare for the arrival of EAB. The obvious change will be to cover all tree threatening pests within Minneapolis. By necessity a pest will be defined as an injurious insect or microorganism that is harmful to trees. By broadening the scope of the ordinance, it will be possible to adapt to both known and future pests.

Step #2: Inventory Collection

The MPRB Forestry Division is in the process of collecting data on boulevard trees throughout Minneapolis. From data collected thus far, it is known that 19% of all boulevard trees are Ash. This percentage translates into an estimated 38,000 vulnerable trees. Considering that the cost of removing, stumping and replanting these trees can be three times the current Forestry Division budget, it's easy to see why delaying the arrival of EAB is so important.

As of the writing of this plan, about three fourths of the City has been inventoried. The Forestry Division is committed to the completion of this project and is working with the MPRB Information Technology staff on data storage. Having a functional inventory will provide the exact location of boulevard Ash trees. This information will be an important management tool for combating EAB when it arrives.

Step #3: Informing Policy Makers

For over four decades, a key component to the success of the Forestry Division has been the support provided by elected officials. Specifically, the Commissioners of the MPRB have provided the resources and policy support needed to remove elm trees when it was not politically popular to do so. The same kind of support will be needed when EAB arrives.

As new information on EAB becomes available from the Minnesota Department of Agriculture, the Minnesota Department of Natural Resources and the US Forest Service, Forestry staff will relay what is pertinent to the MPRB Commissioners. This is in addition to formal updates that will be made during Operations & Environment Committee reports. Such Committee reports also help inform the public during broadcasts on cable television.

Step #4: Media Relations

The MPRB Forestry Division and the MPRB Public Information and Marketing Office are cooperating on monthly news releases that cover a variety of tree related topics. This helps with the dissemination of timely information regarding EAB. This can result in public interest stories like one that appeared on KARE 11 TV on May 22, 2007 during EAB Awareness Week.

However, the very nature of the work performed by the Forestry Division leads to regular contacts by TV, radio and newspaper journalists. Whether the subject is DED, new tree planting or the need for watering; Forestry staff is regularly asked to respond to the media. When such opportunities occur, every effort will be made to incorporate EAB awareness into the story subject.

Step #5: Inform the Public

In addition to cultivating media relations, there are other means whereby the MPRB can disseminate information about EAB. The most accessible are those that the MPRB has direct control over. These include the MPRB neighborhood recreation and community centers, MPRB District Newsletters, tree care clinics and cable TV. In February 2008 an EAB informational page was posted on the MPRB website with links to state and national web pages.

Still other avenues are available to the MPRB for spreading news about EAB. Neighborhood newsletters lend themselves to this cause because the editors are regularly seeking timely and relevant news. Another is neighborhood meetings and festivals where Forestry staff can reach a large number of people.

Step #6: Train the Staff

The key to responding to an EAB infestation is to identify the presence of the insect as early as possible. This will allow the MDA to determine the extent of the infestation and the best containment strategy to use. The MPRB Forestry Division is fortunate to have 70 Arborists, Crewleaders and District Foresters working in the field to assist with this task. Unlike DED, identifying EAB is often difficult. In places where EAB has been found it is believed to have been undetected for years.

The Forestry Division has responded by increasing the credentials required of its staff. The International Society of Arboriculture's (ISA) Certified Arborist and Certified Tree Worker programs that have been available for years has resulted in approximately 40% of Forestry staff having one of these titles. Now newly hired Arborists will need to obtain certification as a condition of employment. To ensure that certification is maintained educational opportunities such as the Minnesota Tree Care Conference, Shade Tree Short Course and in-house training will continue to be made available.

Step #7: Educate Contractors

For several decades the Forestry Division has utilized private contractors for the removal of diseased elm trees on private property. The relationships that have developed over time will enable these contractors to provide added help with the approaching invasion of EAB. Beginning in 2008, the Forestry Division is providing contractors with information on EAB so that they may assist with the identification and early detection.

Knowing that continuing education is a key to EAB identification, the Forestry Division has updated its private tree removal specifications to require contractors to employ at least one ISA Certified Arborist in their company. This requirement took effect in 2007. Since then the City's Department of Regulatory Services has established a similar requirement for all companies seeking a tree servicing license. The resulting workforce will be better informed about recognizing the symptoms of EAB and how to deal with its arrival.

Step #8: Adapt Maintenance

The pruning of boulevard trees can be very time consuming if the trees receive the kind of work that is necessary to increase their longevity. For example, pruning for proper branch structure and apical dominance helps a tree to withstand ice and storm damage. However, this may not be the best use of resources for a tree species that will not be around for the long term future.

Recognizing that the arrival of EAB is just a matter of time, Forestry Division crews are spending less time pruning ash trees than other types. Ash tree pruning now consists of two basic steps. These are the removal of low limbs that interfere with pedestrian and vehicle traffic as well as the removal of deadwood. The time saved pruning ash trees can be spent on longer lasting species. Ironically, one of these is the disease resistant elms that show promise in tough urban settings.

Step #9: Stop Planting Ash

The loss of thousands of elm trees to DED in the late 1970s caused a need for inexpensive yet fast growing trees that could endure tough city conditions. This resulted in the unintentional over planting of ash trees by home owners and municipalities. Unlike many cities and villages, Minneapolis adopted a Master Street Tree Planting Plan (MSTPP) in the early 1980s. This helped ensure species diversity and limited the number of ash planted on public properties.

Over time the MSTPP developed into a dynamic document. Species that were prescribed in the 1980s proved unsuitable over the next twenty years. Even when following the MSTPP, the number of ash on boulevards and in parks increased. It was not uncommon for the MPRB to plant over 300 ash each year. With the realization of EAB's destructive nature, the Forestry Division reduced the number of ash planted to 44 in 2005 and 9 in 2006. Since 2007, no ash trees have been planted by the MPRB.

Step #10: Replacement

The perfect scenario for any urban forest would be one in which there were no disease or insect pest to deal with. However, even in this ideal setting there would still be a need to remove aging trees and replace them with new ones. This is because much of an urban forest is manmade. Without replanting, the urban forest would suffer from senescence and eventually die off.

One of the goals in the battle against EAB is to slow the insect's arrival to Minnesota for as long as possible. During that time, there are ash trees that will reach the end of their life cycle and need to be replaced. The MPRB Forestry Division will use this opportunity to replace ash with other species.

Other opportunities for ash replacement will also be pursued. These include situations where ash was probably not the best choice at the time of planting.

The best example of this is ash trees that have been repeatedly “topped” for utility line clearance.

Step #11: Attrition

Each year the MPRB and the City of Minneapolis undertake improvement projects that are within close proximity to public trees. These projects may involve pathways, trails, streets, bridges, playgrounds, buildings and utilities. Even with the incorporation of tree preservation techniques, such projects occasionally impact trees in a negative way.

During these improvement projects, the Forestry Division will look for opportunities where desirable types of trees may be preserved by sacrificing neighboring ash. For example, the construction of a new pathway may require choosing between the removal of large ash trees or young oak trees. Even though the ash may be larger and possess a bigger canopy, it makes more sense in the long run to sacrifice them and save the smaller less mature oak trees.

Step #12: Empathy

There is a personal side to the removal of ash trees that the Forestry Division will consider as it prepares for the arrival of EAB. Many property owners have developed a connection with the boulevard ash bordering their residence. Occasionally such trees mark a significant event that only the adjacent resident can appreciate.

With the exception of hazardous trees, ash trees will not be removed with the goal of replacement (as outlined in Step #10) if the adjacent property owner objects to the removal. The Forestry Division has determined that the loss of goodwill is not worth the benefits gained from a controversy with a resident. This is especially true considering the fact that EAB will indiscriminately destroy such trees anyway.

Step #13: Cooperate

The earlier that EAB is found, the sooner it can be dealt with. The lead agency in Minnesota for preparing for and detecting EAB is the Minnesota Department of Agriculture (MDA). The MPRB Forestry Division has been actively cooperating with the MDA in this effort for years.

Forestry Division staff have participated on the MDA’s EAB Strategic Planning Team. This led to the creation of an EAB Response Plan. Cooperation has also meant the provision of wild grown ash trees that are sacrificed as EAB bait. Such trees are called trap trees and are removed, dismembered and examined for the presence of EAB.

Step #14: Advocate

When the devastation from DED was at its peak in the late 1970s, public demand resulted in state assistance to municipalities. Tens of millions of dollars were made available to help with removals and replanting. Rather than wait for the arrival of EAB to spur a similar response, the ideal approach would be to have state assistance in place ahead of time. Steps in this direction have been taken by MPRB lobbyists at the state level.

In 2007 the Forestry Division participated on the Forest Protection Plan Task Force (FPPTF) which was created by the Minnesota State Legislature. The FPPTF was charged with developing a plan to prepare the state for early detection, appropriate response, and educating the public regarding invasive pests that threaten tree cover in Minnesota. The creation of the Forest Protection Plan in 2008 outlines what is needed at the state level to help Minnesota's cities and villages prepare for EAB. The MPRB will advocate for the need to implement this important plan.

Step # 15: Follow the Leader

Once EAB is found in Minnesota, the MDA will implement it's EAB Response Plan. A variety of options are laid out in the plan. These range from suppression which limits the spread of EAB to eradication which seeks the total removal of EAB. The extent of an infestation will determine which course of action will be pursued.

The longer it takes EAB to arrive in Minnesota, the longer the MDA will be able to learn from other states and municipalities where the insect has become established. Procedures nationwide for dealing with EAB have already changed dramatically since the initial discovery in 2002. As one of MDA's cooperating partners, the MPRB Forestry Division will have an intimate knowledge of what to expect when EAB arrives.

Links to Websites

U.S.D.A. Forest Service:

<http://www.emeraldashborer.info/index.cfm>

Minnesota Department of Agriculture:

<http://www.mda.state.mn.us/plants/pestmanagement/eab.htm>

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