

## Memorandum

Date: September 3, 2014  
To: Hillsdale, NY Town Board  
From: Hillsdale Conservation Advisory Council  
Re: Very Destructive Pest, Emerald Ash Borer (EAB)

### What is EAB?

Emerald Ash Borer (EAB) *Agrilus planipennis* is an invasive wood-boring pest of North American ash (*Fraxinus* spp.) including white ash (*F. americana*), black ash (*F. nigra*), red ash (*F. pennsylvanica*), green ash (*F. pennsylvanica* var. *subintegerrima*) and several horticultural varieties of ash. First found in 2002 in southeastern Michigan, it may have been introduced in the 1990's on wood packing material from Asia. EAB has spread to 23 states including New York, Massachusetts and Connecticut. EAB was confirmed in New York in June 2009 and has since been found in twelve counties including Ulster, Greene, Dutchess and Rensselaer Counties and in Dalton, MA. The infestations in Ulster and Greene counties are the largest in the state with the smaller ones in Stephentown, Tivoli and Dalton adding potential invasion routes to Hillsdale from all directions.



mature beetle



larval stage

EAB is an enormous threat to our ash resources and forested ecosystems, aggressively killing healthy as well as stressed trees. Ash represent about eight percent of all trees in the county and are found throughout the area; along roads, in public and community spaces and on private property. EAB Larvae bore through the bark and into the cambium where they feed on the phloem. As the larvae feed they create serpentine-like galleries that disrupt the flow of nutrients, usually causing tree death within 2-4 years of infestation.

### Impact of EAB

The arrival of EAB and the sudden death of ash trees can have a variety of adverse impacts, foremost being the public health hazard posed by the dead trees. EAB kills many trees at once and relatively quickly. Dead trees rapidly fall apart, dramatically increasing the risk of personal injury, property damage and resultant liability. Additionally, the presence of so many dead and dying trees will be aesthetically damaging to the town. Hillsdale must take a proactive approach and plan for EAB by identifying potential impacts and developing a management strategy to minimize the costs and mitigate the negative impacts.

### Signs and Symptoms

EAB infestations are difficult to detect in early stages and at low densities. The upper parts of the tree are infested first, making the entrance cracks and exit holes in the bark nearly impossible to see early on. The best indicator of EAB is evidence of woodpecker foraging, which can be visible from long distances. When trees begin to decline rapidly signs may include bark splitting, canopy thinning and epicormic sprouting (water sprouts). Symptoms can also be caused by other problems, including the common disease ash yellows.

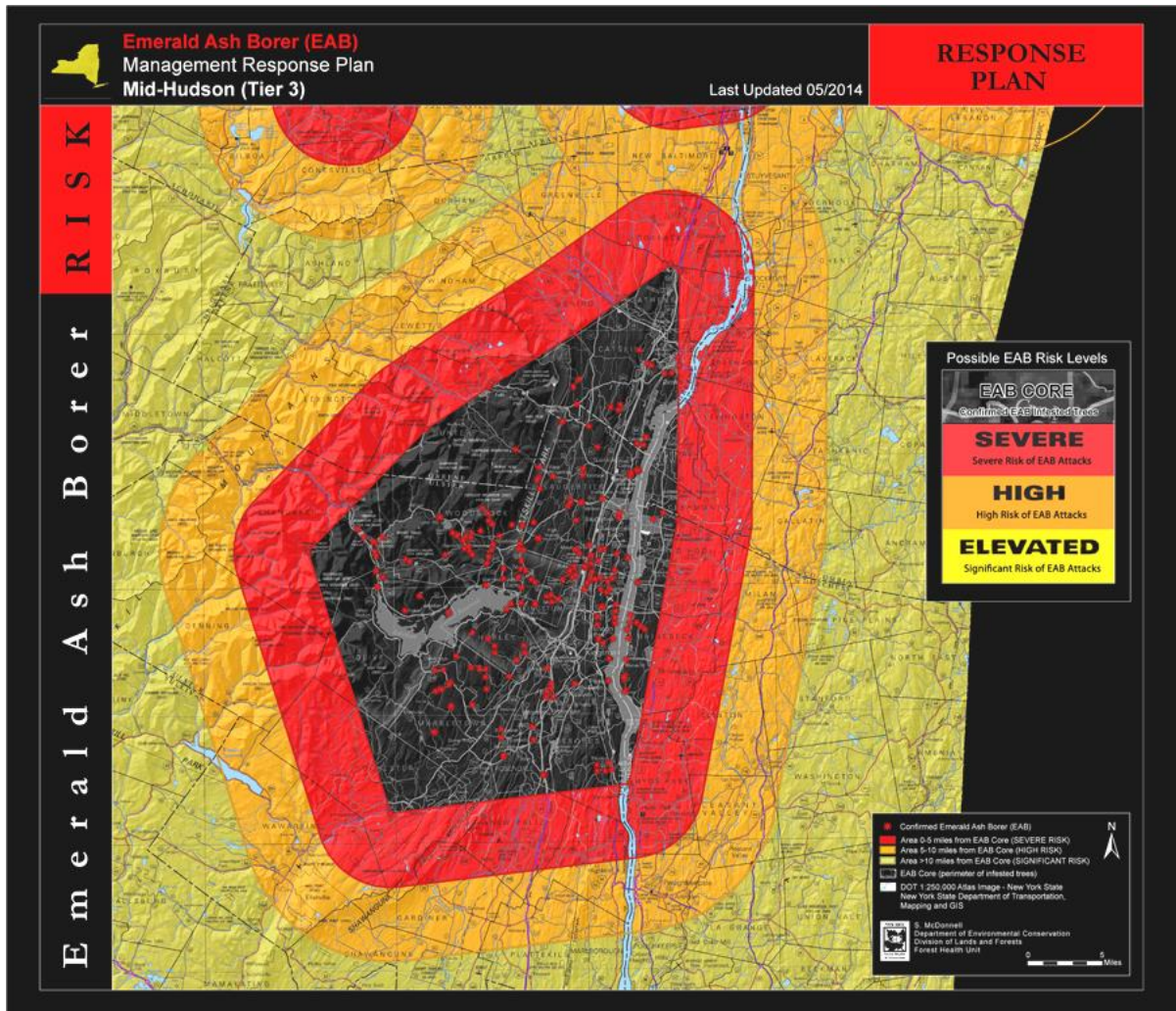


'D' shaped exit hole



'S' shaped galleries

Local EAB infestation



## **Management actions:**

An ash tree management plan should achieve the following goals:

- Reduction of public health and property hazards associated with EAB.
- Mitigate economic and social costs of ash damage and control efforts.
- Prevent further unintended human caused spread of EAB.

## **EAB Management Options**

There are four management options to respond to EAB:

1. Response -remove trees as they die
2. Preventive Treatment-Insecticide Applications
3. Pre-emptive Removal -Planned tree removal on predetermined time frames and specifications
4. Combination -combination of these three strategies.

These strategies are discussed below.

### **Response**

Simply wait until EAB damage is obvious and remove the trees as they die. It is unlikely the town would have much time between infestation and when trees begin to decline. This strategy puts the town at a higher risk for damages and could result in the need for all or most of the trees to be removed at once.

### **Preventative Treatment**

Insecticidal treatments are available to protect ash trees; primarily systemic insecticides applied by soil drenching, trunk spraying and direct injection\*. The efficiency, economy and safety of treatments is variable. Larger trees require more insecticide. Injection requires treatment every 2-3 years to retain protection. Basal drenching is less expensive (about ½ the cost of injection) and it's duration more variable. Trunk injection may carry less environmental risk because the insecticide is injected directly into the tree and limits exposure of people and animals to the insecticide. For this reason the injection method is recommended in public places and where the risk of runoff or groundwater contamination from soil drenching is high. Trees must be 6 inches in diameter for trunk injection, so this method cannot be used on young trees.

A schedule could be developed to spread these costs over a number of years, for example treating one third of the trees each year. The duration ash trees will need to be treated to protect them from EAB is presently estimated at 15 years. This scenario does not include the cost to remove trees where treatment is ineffective.

\*Herms DA, McCullough DG, Smitley DR, Clifford CS, Cranshaw W. 2014. **Insecticide options for protecting ash trees from emerald ash borer**. North Central IPM Center Bulletin. 2nd Edition. 16 pp.

### **Pre-Emptive Tree Removal**

The pre-emptive removal strategy employs removing all of the ash trees over a predetermined project duration prior to an EAB infestation in the Town. This strategy allows work planning and a more favorable distribution of costs. The strategy can be implemented over several years with pre-emptive removal of trees annually, prioritized based on their location and condition. Prioritizing the trees in the poorest condition may also serve to inhibit the spread of EAB. However, this strategy assumes the loss of all Ash in or near public spaces.

### **Combination Strategy**

A combination strategy employs treating and preserving a select number of trees for an unknown number of years and pre-emptive removal of a select number of trees per year for a predetermined duration. This strategy, like pre-emptive removal provides for work planning and a favorable distribution of cost for completing the tree removal and tree injection work.

## **Recommended Management Actions**

The first step in managing EAB is to learn about it. Appropriate departments -highway, facilities and grounds departments and committees should learn ash tree identification and the signs of EAB infestation.

### **Ash Tree Inventory**

The purpose of an inventory is to identify and enumerate Ash trees along or close to public streets and on public lands and provide a baseline of information to guide management actions and priorities. The information is important for assessing costs determined by the diameter of the tree. Ash trees should be tagged with specialized tags containing information about EAB that will provide an additional opportunity to raise public awareness.

Assign a condition rating. Note general condition (good, fair, poor), signs of stress (canopy dieback, epicormic branching, etc.), EAB damage (bark splitting, woodpecker damage, exit holes, etc.) and tree location relative to public contact and electrical and communication utilities. Stressed trees near wires pose the greatest threat to infrastructure as they are more likely to cause an array of damage if they fall. These trees should be prioritized.

The combination strategy may be the best options for the publicly owned trees and could be implemented immediately utilizing the information from a tree inventory. Departments responsible for tree removals should review the inventory and prioritize insecticide treatments and removals. The list of the most hazardous can then be divided into manageable sets of trees that can be scheduled for removal on a monthly or yearly basis. The town should also publicize tree removals or treatment on the website to encourage homeowners to take action.

The town should request that state and county DOT's treat or remove ash trees along state and county highways. Opportunities to collaborate with surrounding towns on ash tree management should be investigated.

Shade trees are an important part of the landscape. They provide added property value and are an important part of scenic character. Insecticidal treatment of the town's important, large Ash trees is recommended to protect this valuable resource. Treatment costs can be estimated by qualified arborists or insecticide applicators allowing the town to develop a budget for treatment. Treatment costs can be distributed over time by treating a portion of the trees on a rotating basis, as described in the preventative treatment section above.

## **Summary of Recommended Actions**

- Educate appropriate staff and form an EAB Task Force
- Inventory and evaluate trees on town property and on private property overhanging town property
- Prioritize and schedule treatment or removal of inventoried Ash trees

## **Closing**

Unfortunately, the Town must face the social and economic costs associated with EAB. Although there is little time to prepare, the negative impacts of EAB can be minimized. The urgency for Hillsdale to take action is very real.