



WEST WINDSOR TOWNSHIP

DEPARTMENT OF COMMUNITY DEVELOPMENT SHADE TREE COMMISSION

Emerald Ash Borer (EAB) Management Plan WEST WINDSOR TOWNSHIP, NJ Adopted - June 24, 2015

Introduction

The Emerald Ash Borer (EAB), *Argilus planipennis*, is an exotic, invasive pest from Asia that is killing Ash trees in over 25 states including New Jersey. This beetle is one of the most destructive invasive pests ever introduced into the United States. In its larval stage it will feed and bore tunnel like “galleries” underneath the bark of an Ash tree, quickly cutting off the circulation between the roots and leaves of the tree. Since its discovery in Detroit, Michigan in 2002, the borer has killed hundreds of millions of Ash trees. Emerald Ash Borer (EAB) has recently been found in West Windsor Township. The collected specimen has been examined by the NJ Department of Agriculture to confirm the identification.

Eradication of the beetle has proven to be impractical and is not an option. West Windsor Township must manage the protection, removal and replacement of all Ash trees located on public property over the next several years. Choosing to ignore or not manage the impact of this beetle will result in significantly higher costs as well as health and safety problems.

As of 2014, West Windsor Township inventories indicate that approximately 1,800 (9%) of the municipalities 20,000 street trees are Ash. The inventory of Ash trees in active recreation portions of Township Parks and properties reveals an additional 110 Ash trees. Thus, an estimated 2,000 Ash trees on Township property may be actively inhabited or frequented by the EAB.

Forest survey estimates indicate that two percent of the naturally occurring woodland trees in West Windsor Township are Ash species. The Township measures 26.9 square miles or 17,235 acres in area. Estimates indicate that 40% of the Township is in woodland cover. Utilizing these two factors it can be estimated that 137 acres of Ash trees are present. The Township Master Plan Greenbelt measures approximately 2,500 acres in area. Two percent of the Greenbelt woodland would equate to 50 acres of Ash trees in the Township Greenbelt.

These inventory numbers and estimates are provided to offer a degree of magnitude for the impact of the EAB in West Windsor Township. It seems apparent that the magnitude presented suggests that it would be prudent for West Windsor Township to prepare and manage for the influx of this pest and its impacts on Ash trees and thus the potential effect upon health, safety and welfare of residents.

Plan Purpose

By implementing the provisions in this management plan, the municipality will take a proactive approach to mitigate the disruption of its urban forest caused by the anticipated infestation of the EAB. Taking a proactive approach will enable the municipality to address public and private needs in an efficient and effective manner.

Goals

The goals of this plan are to:

- Preserve, or protect through treatment, valuable or specimen quality Ash trees within the municipality
- Remove potentially hazardous Ash tree to protect public safety
- Replant non-host trees to replace those removed and compensate for the impact of lost Ash trees on the health and welfare of the community.

Administration of Plan

The following elements of the West Windsor Township EAB Management Plan have been adopted, by the Shade Tree Commission, and are subject to periodic revision as new information about the EAB is available. This plan is also subject to change should state or federal policies dictate. The West Windsor Township Shade Tree Commission (STC) will be responsible for advising the Township Administration regarding the status of this matter and the provisions of this plan. This EAB Management Plan will supplement the current West Windsor Township Community Forestry Management Plan. The Shade Tree Commission anticipates the production and periodic update of a "Current Action Plan" listing objectives and actions that the STC will be actively pursuing to administer the goals of this plan.

Communications

- The Mayor, Administration, Township Council, Township Department Heads, and the selected Township Staff will receive periodic updates from the Shade Tree Commission.
- The Shade Tree Commission will post periodic advisories on the Township web page reflecting this matter and the current status of the problem and options for treatment and mitigation.
- The Shade Tree Commission will attempt to disseminate accurate information regarding this matter to Township residents and property managers, including the current status of the problem and options for treatment and mitigation.
- The Shade Tree Commission will attempt to employ a wide range of methods to communicate accurate information regarding the EAB including but not limited to:
 - Township web page advisories www.westwindsornj.org
 - Presentations / Updates to the Township Council
 - Letters to the Editor of local news print
 - Requests for feature articles in local news print
 - Available channels of social or new media
 - Direct contact with adjacent municipal and county property managers
 - Targeting mailing or distribution of flyers to residents and/or landscape contractors
 - Posting of advisory posters in Township Park, Municipal and Library bulletin boards
 - Arbor Day presentation and Art Contest
 - Tree Tagging events
 - School Board coordination or presentations
 - Senior Center presentations

Management Options (See Appendix – A)

West Windsor Township will implement the management option B, Selective Management (See Appendix - A). High value, significant, healthy Ash trees will be chemically treated to protect them from the EAB infestation for legacy tree retention. Ash trees that pose a risk, are in decline, or are planted in inappropriate locations will be removed and replaced as appropriate with a different species of tree. Estimates or University developed calculators will be used to estimate the cost of Ash tree removal, treatment, and replacement over time and to determine budgets over the next several years.

In the Spring of 2015 the Township selected 66 specimen trees of the 110 Ash trees in public parks and properties to initiate pesticide treatments with the objective of saving these trees as legacy trees. These treatments will need to be continued annually through the period of infestation. The success of this effort will be monitored and communicated as part of the actions taken by the Shade Tree Commission.

Other or SLow Ash Mortality (SLAM) options will be analyzed for consideration as a management tool as needed (See Appendix B).

West Windsor Township will investigate programs, such as “Adopt An Ash West Windsor,” and “Tag an Ash,” to partner with residents, property managers, adjoining municipalities and the school board to confront the challenge of the EAB for public and privately owned trees

Wood Disposal

West Windsor Township staff or contractors will not dispose of any Ash wood outside the quarantine area (State of New Jersey) except at approved sites. The entire state of NJ has been placed under EAB quarantine, under US Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) and NJ Department of Agriculture regulations. Movement of Ash products (including firewood, nursery stock, logs) outside of the state boundaries is restricted, unless a Compliance Agreement from USDA AHPIS is received.

To minimize the continual spread of the EAB to non-infested portions of the state, it shall be the objective of West Windsor Township that all Ash trees that are removed by West Windsor Township staff and contractors will be kept within municipal limits and will be chipped or the bark removed.

Trees removed on residential or private property should be chipped or de-barked before it is removed or transported from the Township.

Canopy Replacement

As budgets permit, removed Ash trees, but particularly street trees, will be replaced with non-host specific tree species that will enhance the planting sites, are appropriate for the planting sites, and enhance the diversity of the West Windsor Township community forest.

Trees on Private Property

Property owners are urged to monitor for the EAB on their property. The decision to treat, remove, or retain private property trees rests with the property owner. Residents and commercial or institutional property managers should consider many variables when evaluating options, including tree size, location, and condition. Residents can contact the STC for more information and assistance.

West Windsor Township will enforce the relevant section of the Township Code, Chapter 170, through its code compliance procedures should it receive complaints about hazardous private trees. Private trees that are a threat to private property will be inspected only as complaints are received.

When contracting for insecticide application or tree removal it is encouraged that residents and property managers engage a Certified Tree Expert (CTE) with a Certified Pesticide Applicators License. All pesticide applications must be administered in accordance with all applicable regulations and standards.

West Windsor encourages residents and property managers to replace trees lost with species appropriate for the site, and to consider planting new trees in advance of the EAB infestation and Ash removal. The landscape of commercial properties may be subject to specific code standards and site plan approvals that could stipulate maintenance or replacement of Ash trees to retain compliance.

Why Re-plant Trees?

It's no secret that plants play an essential role in the health and well-being of our planet. But a recent study suggests that if the trees around us are removed, it may incur an unexpected and tragic expense - human lives.

A U.S. Forest Service team, led by Geoffrey Donovan, Phd., analyzed the effect that the wide spread loss of Ash trees was having, if any, on human health. The researchers examined mortality data from over 1,200 counties where Ash borers are present, comparing pre-invasion figures to those after the massive tree loss, from 1990 to 2007. Adjusting their findings for demographic variables, like education and income, the researchers discovered a devastating correlation: the loss of trees aligned with an increase in human deaths.

The study, published in the *American Journal of Preventive Medicine*, uncovered an increase in mortality related to cardiovascular and lower respiratory-tract illness in counties infested with the Emerald Ash Borer. The magnitude of this effect was greater as infestation progressed and included counties with above-average median household income. Across the 15 states in the study area, the borer was associated with an additional 6,000 plus deaths related to illness of the lower respiratory system, and over 15,000 cardiovascular-related deaths.

In an interview with PBS News Hour, Donovan said of trees, "Not only do they do the things we would expect like shade our houses and make our neighborhoods more beautiful, but maybe they do something more fundamental. Maybe trees are not only essential for the natural environment but just as essential for our well-being."

Outreach

Outreach efforts to increase awareness of the EAB in West Windsor Township are noted above in the Communications portion of this plan. The Shade Tree Commission will lead this effort but will solicit and need the assistance of Township residents to help meet this challenge.

Contacts and Information:

West Windsor Township (<http://www.westwindsornj.org/>)

New Jersey State Forestry Services (www.forestry.nj.gov)

New Jersey State Forestry Services EAB Webpage (www.emeraldAshborer.nj.gov)

National Tree Benefit Calculator (<http://extension.entm.purdue.edu/treecomputer/index.php>)

Emerald Ash Borers (www.emeraldAshborer.info)

USDA APHIS ([http://www.aphis.usda.gov/planthealth/plant_pest_info/emerald Ash b/ regulatory.shtml](http://www.aphis.usda.gov/planthealth/plant_pest_info/emerald_Ash_b/regulatory.shtml))

USDA Forest Service (<http://na.fs.fed.us/fhp/eab/>)

EAB Pesticide Options

(http://www.emeraldAshborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf)

Slow Ash Mortality (SLAM) (<http://www.slameab.info/>)

Appendix A - Ash Management Options

Option A. No Action

In this option, Ash trees will be treated and maintained the same as other species in the community. No survey will be conducted to detect and monitor the spread of the EAB, and no control actions will be undertaken even when the EAB becomes established in the community. No tree replacement plan for affected areas is in place. It may cost nothing up front. However, the community is still responsible for the removal of hazard trees along roadways and woodland trails. Significant changes in neighborhoods and local landscapes can also be expected. The result will be that most Ash trees will be killed by the end of the infestation.

Option B. Selective Management

In this option, high-value Ash trees in selected areas (streets and parks) within the community will be managed actively, whereas those in other areas, such as woodlots, will be left alone. Ash trees will be monitored for their health and levels of the EAB infestation. Chemical control and tree removal will be applied wherever appropriate in a cost-effective manner. Tree replacement (1:1 or 2:1) will be prioritized towards community needs. As a result, most Ash trees in the natural areas will be killed by the end of the infestation, whereas a great portion of high-value Ash trees are protected for future generations to enjoy. In addition, dead or dying Ash trees in streets and parks will be replaced with non-host species to prevent major canopy gaps in neighborhoods.

Option C. Preemptive Management

In this option, Ash trees on streets and in the parks will be removed preemptively and replaced with non-host species. No EAB survey activity will be conducted. As a result, treatment areas will contain no Ash trees, with no concerns over the EAB in the future either. The initial cost of this option could be very high because of expenses associated with tree removal and replacement. Streets and parks also need to deal with major canopy gaps temporarily at the beginning before replacement trees become well established. However, no annual cost will be incurred after the completion of the project.

Option D. Aggressive Management

In this option, all Ash trees in the community will be managed actively with all available management tools. EAB survey activities will be carried out on both roadways, parks and in yards. Information from the surveys will be used to determine proper management actions across the Municipality. Chemical control will be actively pursued to protect the maximum portion of Ash trees and their canopy. Only dead or dying Ash trees will be replaced with non-host species. As a result, most high value Ash trees will be saved from EAB damage, whereas a small portion will be replaced with non-host species. The community suffers the least socially and environmentally from the infestation, with less risk of losing urban canopy cover. However, the annual cost to the community is potentially the highest.

Appendix B - SLAM

The goal of SLAM (SLOw Ash Mortality) is to slow the spread and reduce the population of the EAB so as to delay the onset of mass Ash mortality. Here are some methods that can be used to achieve the goals under SLAM*.

Trap Tree

Select Ash trees are girdled (a ring of bark is removed, restricting the movement of water and nutrients up and down the tree) in the spring (April/May) prior to the EAB emergence. This tree is then cut down in the winter or early spring prior to the EAB emergence. A girdled Ash tree will attract more EAB's than a non-girdled tree because the EAB are attracted to the chemicals emitted from the stressed Ash tree. After cutting down the tree, either peel the bark or buck (cut) into 3-4' sections (or smaller). Peeling or bucking the tree will increase EAB mortality by exposing the larvae and promoting drying out the wood. **Girdled trap trees must be removed the following winter/early spring, otherwise they will serve as breeding grounds if left standing after EAB emergence.** This method can be applied to a single tree or a cluster of trees.

Lethal Trap Tree

Similar to the Trap Tree method, except the selected Ash tree is chemically treated 3-4 weeks prior to girdling. The girdled Ash tree will attract the EAB and the chemical will kill any adult or larvae that feed on the tree. The lethal trap tree does not need to be cut down because it will not harbor live EAB. This can be applied in areas where tree removal is difficult or not an option. This method can also be used without girdling the tree.

Phloem Reduction

Tree phloem is the thin layer of living tissue found just under the bark of a tree. The amount of phloem in a tree is directly related to the tree's size; larger trees have larger amounts of phloem than smaller trees. The EAB larvae feed on the phloem, and the more food (phloem), the more EAB's. If chemical treatments are not an option, and tree removal is the main method used for EAB management, then the removal of larger diameter trees should be prioritized in order to reduce the most phloem at a time. Also, the Trap Tree method can be used on these larger trees prior to tree removal to attract more EAB's before the tree is cut down.

Delayed Tree Removal

In order to spread the cost of tree removal over time, a portion of Ash trees can be chemically treated with the intent of removal at a later time. Treatment will protect this portion of Ash trees from EAB attack and allow the municipality to delay the need to remove these otherwise infested or hazardous trees. For example, if 100 Ash trees are slated for removal, instead of scheduling the removal of all 100 trees at one time, remove 50 in year one and treat the other 50 and plan for removal the following 1-2 years.

Diameter Consideration Tree Removal

When deciding which Ash trees should be removed, consider the diameter and value of the Ash tree. For instance, Ash trees that are <10" in diameter could be slated for removal, regardless of health and location, and then replaced with a non-host tree. However Ash trees that are >10" in diameter should be looked at more closely and protected via chemical treatments if they are in healthy condition and planted in a good location. The purpose of this is that a large Ash tree (>10") will provide greater ecological value that may take many years for a newly planted tree to provide. So preserving this ecological value in larger Ash trees may be more economical in the long run (via shade, energy costs, carbon sequestration, watershed protection, etc).

** Ash tree removal alone does not support SLAM, but rather may increase the spread of the EAB, as EAB's will fly far distances until they find a suitable host. Integrating multiple SLAM methods concurrently is the best option to slowing the spread of the EAB.*

Appendix C - EAB Attachments

West Windsor Township Shade Tree Commission – Current Action Plans

- June 24, 2015 – STC – Current EAB Action Plan
-

West Windsor Township Shade Tree Commission – Public Notices and Outreach Documents

- 12-2-2014 - WW Emerald Ash Borer Notice
- 2-2-2015 – “Life or Death” Letter to Editor
- 6-25-2015 – “The EAB Challenge” Letter to Editor
- 7-6-2015 – EAB Fact Sheet