# Guidelines for Community Emerald Ash Borer (EAB) Preparedness and Response Plans

## Introduction

This document is to be used in conjunction with the "Community EAB Preparedness and Response Plan Outline."

These guidelines provide additional background, information and resources for each element of a community plan. Such plans are intended to assist communities in managing the threat posed by emerald ash borer (EAB). This document provides additional information that may be incorporated into your plan or referenced by your plan.

## 1. Title

EAB plans should address both activities to be accomplished *before* EAB is detected in your community (i.e. preparation) as well as activities that may occur *after* EAB has been detected (response). Thus, the title of your community plan should reflect the aspects of both preparation and response.

## 2. Purpose

The purpose of the plan should be clarified, including such items as mitigating the risk of introduction and spread of EAB, distributing the costs over a manageable time, and preserving the benefits of the urban forest. The plan should be considered a living document and should be reviewed annually, with revisions made as necessary.

## 3. Applicability

This section should describe which type of land ownership is addressed in the plan. Plans must apply to public land ownership, and those areas of the community should be described. The plan may also apply to private trees where such trees may negatively impact public right-of-ways or where infested trees may threaten the health of the urban forest or present a hazard.

## 4. Administration

This section should indicate who is responsible for implementing the plan and assuring that the elements of the plan are carried out. Some potential choices include municipal forestry staff, parks and recreation staff, public works staff, volunteers, and tree boards. Coordination will be necessary with various key public and private parties, and those parties should be listed.

## 5. Executive Summary

This section provides a brief summary of the potential significant impact of EAB on the community and the key features of the overall plan. The potential financial impact of emerald ash borer should be outlined, including the costs of ash tree removals and costs of replacement plantings.

> Purdue University offers an EAB cost calculator:
> http://extension.entm.purdue.edu/treecomputer/

(*Note: To run the calculator you will need: an inventory of the number and size of ash trees, an estimate of costs for removing and treating trees based on the size of each tree, and an estimate of costs for replacing each ash tree that is removed.*)

## 6. Ash Management Plan

Various actions that your community will take in preparation and response to the loss of ash resources due to EAB should be outlined. Some of the key elements to include are:

### a. Ash Tree Inventory and Assessment

The plan should reference any existing ash tree inventory or describe plans for developing an ash tree inventory.

A tree inventory is vital in order to understand the potential impact of EAB in the community, to take proactive measures including ash removal/reduction, and to effectively manage an EAB infestation. The inventory can range from very simple random sampling to an elaborate system integrated with a Geographic Information System (GIS). The most important thing is that the scope of the work is defined. At the very least, information on location, condition, and size of all ash trees should be collected. Ideally, this is completed prior to an EAB confirmation. It also needs to be determined if the inventory will include the whole community, only parklands, or only public street trees.

> *Tree inventory references:*
> "How to Conduct a Street Tree Inventory", Tree City USA Bulletin No. 23, James R. Fazio, Editor, Arbor Day Foundation.
>
> A summary of street and park tree inventory software programs has been compiled by the Michigan Department of Natural Resources:
>   http://www.michigan.gov/documents/dnr/Tree_Inventory_Software_287284_7.pdf

The North Dakota Forest Service has staff that can assist your community in determining the type of inventory needed and inform you of resources available to complete the inventory.

b. Ash Tree Removal Priorities and Plans

## Pre-mitigation

Removal of selected ash trees prior to EAB introduction, or "pre-mitigation," may be a useful strategy to diversify the urban forest and to spread the costs associated with EAB management over a longer period of time.

"Some communities have already begun to remove ash trees, replacing them with other tree species.  Even though EAB may not arrive in North Dakota for many, many years, this "pre-mitigation" may prove to be the best strategy in the long run.  Once it has been decided to use this approach, the community must then decide which specific trees to remove.  That's a difficult decision, and there are many different thoughts on the subject.

One idea is to remove and replace the smaller trees now.  Compared to larger trees, there has not been as much time and money invested in smaller trees.  Smaller trees are providing fewer services right now, so relatively little will be lost by removing and replacing them.

Another thought is to pre-mitigate by removing large trees before EAB arrives.  The reason behind this is that it is more expensive to remove a dead tree than a live tree.  As tree size increases, that cost differential goes up.  This approach – removing large trees before they die – has been used in many eastern communities, such as Toledo, Ohio, where EAB has already arrived.  For North Dakota, I'm very hesitant to recommend this method until EAB is imminent.  For now, those large trees are providing valuable community services, and may continue to provide services for many years.

A third approach is already being used in North Dakota.  Urban foresters place trees of all species into risk categories – high-, medium-, and low-risk – based on structural defects.  High-risk trees are removed immediately because of concerns for public safety.  Medium-risk trees are normally left standing, with careful observation until their condition changes.  The Fargo Forestry Department has already begun to remove medium-risk ash trees as the city works towards diversifying the urban forest.  Trees that are growing into power lines are also being removed and replaced with shorter-statured trees.  As mentioned earlier, communities may be able to partner with their local utility companies to help share the financial burden of removing and replacing trees under power lines.  In Fargo, this pre-mitigation approach will lessen the impact that EAB will have on the city's forest, which currently has over 19,000 ash trees on the boulevards alone. "

(From:  Zeleznik, J.  2009. Economic Impact of Emerald Ash Borer on North Dakota Communities. City Scan, 77(8,9 and 10)).

## Mitigation

After EAB has been detected, mitigation efforts will be necessary and some ash removal must be planned.

Mitigation efforts can range from attempting eradication (removal of all infested trees), using a trap tree method, or doing nothing at all in some locations. Refer to the State EAB Plan for detailed information on mitigation techniques & recommendations.

Communities should solicit quotes or develop estimates of the cost of removals, based on tree size.

c. <u>Insecticide Treatment of Trees</u>

The current joint position statement by the ND Department of Agriculture, ND Forest Service, and NDSU Extension Service should be referenced:
http://www.nd.gov/ndda/files/resource/InsecticidePositionStatement-NoMap.pdf
This statement currently does not advocate the consideration of insecticide treatment on a site prior to the detection of EAB within 15 miles of that site.  However, actions to maintain ash tree health are good practices, including watering, fertilizing, pruning of dead wood and defects, proper mulching, etc.
Once EAB is confirmed in an area, insecticide treatments may be an option worth considering for selected trees.  It is important to stay current on insecticide options and considerations for use.  Biological controls may also be considered as a viable component of a management strategy.  Some excellent publications have been developed and are available for review at the following websites:

Coalition for Urban Ash Tree Conservation – Emerald Ash Borer Management Statement
http://www.entomology.wisc.edu/emeraldashborer/EAB%20Consensus%20Document.pdf

Insecticide Options for Protecting Ash Trees from Emerald Ash Borer
http://www.emeraldashborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf

Frequently Ask Questions Regarding potential Side effects of Systemic Insecticides Used to Control Emerald Ash Borer
http://www.emeraldashborer.info/files/Potential_Side_Effects_of_EAB_Insecticides_FAQ.pdf

SLAM, Emerald Ash Borer Slow Ash Mortality Pilot Project
http://www.slameab.info/

d. <u>Wood Disposal and Utilization</u>

Communities may face a large challenge in determining how to dispose of increased volumes of wood waste if EAB is introduced, so planning ahead to determine options is very important.  Factors to consider include where the stockpiles will be located, how they will be managed, and processing costs.  Consider the possibilities of a local firewood market or the use of chipped materials for mulch.

In all likelihood, quarantine restrictions will limit the ability to move the waste from a quarantined area.   State and Federal Rules and Regulations must be followed, regarding the movement ash material out of any quarantined area.  Refer to the North Dakota State Response plan for information on regulatory requirements and treatment options that must be met.

Another strategy to minimize the chance of spread is to halt all movement of ash wood during the period of adult emergence (May 1 – August 31).

North Dakota Department of Health – Waste Management has some excellent information summarized and available via the website:
    http://www.ndhealth.gov/wm/Publications/WoodWasteInformation.pdf

http://www.ndhealth.gov/wm/Publications/WoodProcessingRecyclingFacilitiesAndEquipmentVendors.pdf


e. <u>Permits and Licenses</u>
    Check with the state health department for permit and license requirements for landfill, burning, kiln operations, etc.

    City ordinances should address any permits or license requirements for contractors involved with maintenance, removals or planting of trees.  Assurance should be made that any firms providing these services are qualified and have appropriate liability insurance coverage.


f. <u>Tree Planting and Reforestation Plans</u>
    Every EAB management plan should address reforestation and diversification.
    - Develop a recommended tree planting list for your community.  Contact the local city forester, departments in neighboring communities, NDFS or your local County Extension Agent when looking for hardy species that perform well in our region.
    - Develop a strategy for tree replacements.  Update the tree inventory with available planting spaces as trees are removed.  Likewise, the inventory should reflect any new tree plantings.
    - Strive for a tree population in which no single species dominates the total tree population. Santamour (1990) established guidelines for tree planting within a community or landscape:
    Plant no more than 30% of a family:  i.e. Aceraceae
    Plant no more than 20% of a genus:  i.e. *Acer x freemanii, Acer rubrum*, etc.
    Plant no more than 10% of a species:  i.e. *Acer saccharinum*

    Avoid the trap of creating monocultures. Try planting a block of different species with similar size and shapes.  Diversification is paramount to avoid similar pest problems in the future. Finally, replant to maximize tree benefits and remember to plant the right tree in

the right place.  Keep in mind the possibility of utilizing mulch produced from the tree removals as part of the replanting process.  The use of mulch is beneficial in terms of weed control, moderation of soil temperatures, moisture control, and an overall reduction in maintenance costs.

Developing reforestation goals and finding cost-effective ways to replant large quantities of trees will be a challenge.  Discuss the cost of replanting and brainstorm on how the community will pay for reforestation efforts.  Contact the NDFS for information on grant programs available to assist with replanting.

## 7. Detection, Reporting and Monitoring

Keeping a watchful eye is the best way to detect an infestation as early as possible and will provide the best management opportunity.   Monitoring a confirmed infestation is the first step in managing it.

ND Forest Service, ND Department of Agriculture and NDSU-Extension have developed a First Detector Training Manual and have provided training to interested parties on detection techniques and proper reporting protocols if EAB is suspected.  Communities should take advantage of courses offered and encourage their citizenry to become better educated about EAB detection. Visual surveys should be routinely conducted.  Additional detection methods include the use of trap trees and branch sampling
(*see:  North Dakota First Detector Manual*.)

The North Dakota Department of Agriculture and USDA-APHIS also coordinate an annual EAB trapping program using purple sticky traps baited with lure.  These traps serve as a detection mechanism, but have also proven to be a powerful tool for increasing public awareness of the potential threat of EAB.

### *Contact Information*
Understand who to contact for **EAB information or suspect finds:**
- North Dakota Forest Service - http://www.ndsu.edu/ndfs
- North Dakota Department of Agriculture - http://www.agdepartment.com
- USDA-APHIS, Bismarck
  http://www.aphis.usda.gov/wildlife_damage/nwrc/field/bismarck/indexnd.shtml

Understand the **specimen submission protocol**.
All suspects should be sent to NDSU plant diagnostics Lab - Box 5012 Fargo, N.D. 58105.
Phone 701.231.7854 or http://www.ag.ndsu.edu/pdl page 6

Once a find is confirmed, a delimiting survey will most likely be conducted by the ND Department of Agriculture and/or USDA-APHIS to determine the extent of the infestation.  The extent of the infestation will determine boundaries of any necessary quarantines.  Intrastate quarantines will be determined by the ND Department of Agriculture, while

interstate quarantines will be determined by USDA-APHIS. At this point it will also be important to monitor how work is being conducted to ensure minimizing the spread of the insect.

## 8. Update Ordinances or Policies

Ordinances are the tools by which communities have the authority to manage natural resources. You may get help drafting tree ordinances at the website for the International Society of Arboriculture http://www.isa-arbor.com. You can also look at successful ordinances from other cities.

If you already have ordinances in place, make sure they are updated to include EAB, or preferably are general enough to include any new invasive tree pest. Assess current policies and ordinances to consider prohibition of planting ash trees on public and/or private property, address the use of chemical control on public trees, and the process to abate nuisance and/or infected ash trees. Be sure to review any policies and ordinances regarding the licensing of private tree care firms. The community must ensure that firms performing tree maintenance (or removals) are qualified and have appropriate liability insurance coverage. *See Appendix 1, Ordinance / Policy Templates*

## 9. Identification of Available and Needed Resources

Determine and describe the resources that will be necessary to manage EAB
- FINANCIAL-summarize the costs of:
    - Conducting or updating tree inventory
    - Removals of ash
    - Tree replacement
    - Wood disposal
    - Other expenses
- PERSONNEL / VOLUNTEERS:
    An Incident Command System (ICS) will be established to respond to an EAB detection. The ICS will involve the North Dakota Department of Agriculture (NDDA), the US Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS), North Dakota Forest Service (NDFS), and the affected county and municipality.
    - Define tasks and numbers of people needed for each task:
        - Monitoring the ash tree population for EAB infestations
        - Coordination with local emergency response staff and communications team
        - Removals
            - Contractors vs. in-house work
                - Compile a list of local contractors qualified to do maintenance and removals
        - Disposals
        - Replanting (refer to reforestation goals)
        - Communication with residents (refer to section on communication & outreach)

## 10.  Authority

Local authority:

Once the local statutes have been updated to address EAB, include those ordinances and policies verbatim in the plan.

State and Federal regulatory authority:

*Emerald ash borer is a quarantined pest under the regulatory authority of USDA-APHIS and the North Dakota Department of Agriculture.  As such, areas where EAB is detected and placed under state or federal quarantines and movement of any material that could pose a threat of moving EAB out of the quarantine area will be regulated. The North Dakota Emerald Ash Borer Readiness and Response Plan should be referenced for further details.*

## 11.  Communication and Outreach

A multifaceted approach will be needed to educate policy makers, professional staff, and the public about EAB and how to deal with an infestation. Outreach efforts should begin as soon as possible.

Policymakers need to know both the costs and liabilities relating to an EAB outbreak. Professionals may need extra training in performing certain tasks like tree felling, rigging techniques, and chemical application.  Officials need to communicate how to minimize the spread of EAB during the tree removal process, and must enforce policies to ensure the safety and health of residents and natural resources.

Finally, the public needs to be included in the outreach process. You can anticipate a varied reaction to the large scale removals that will likely occur. Make sure to explain the risk involved with leaving dead, standing ash trees near a target. A variety of methods to educate the public should be used and may include public service messages, door hangers, notices in monthly water bills, newspaper articles and even town hall meetings to allow for questions and answers. Utilize resources such as your city website to help keep the public informed with updated information.  The NDFS and your local NDSU County Extension agent can assist in the education efforts.

For information on the identification of the various life stages and other signs and symptoms of EAB and related concerns, excellent web sites include:

http://www.emeraldashborer.info

http://www.mda.state.mn.us/en/plants/pestmanagement/eab.aspx
(Minnesota Department of Agriculture's EAB site)

## 12. Contact List

Provide the contact information for the writers of this plan, or responsible local community officials.

This document was modeled after other plans, including the MN EAB Response Plan, and was developed for North Dakota communities by the ND Urban and Community Forestry Association (NDUCFA) with support from the ND Forest Service (NDFS).