

VERMONT FOREST PEST PLANNING WORKSHEET

This planning worksheet will help your community identify the policies, resources, and actions needed to respond to invasive forest pests such as the Emerald Ash Borer (EAB). By preparing for forest pests, your community can minimize the impact of forest pests and reduce the risk of spreading them. We recommend that all Vermont communities plan for EAB. Some will want to plan for HWA and other pests as well.

You may not have answers for all questions posed in this worksheet because of unique situations in your community. Instructions and background information are provided in black text, while questions and considerations for your community to fill in are in red. In numerous cases you are referred to a Community Resource Toolbox. This online toolbox is available at <http://vtcommunityforestry.org/community-planning/tree-pests> and provides background information, links and other supporting resources.

This planning worksheet will guide you through the following **checklist** for developing your plan for action:

Action	Lead person	Date to complete
<input type="checkbox"/> A. Identify key stakeholders and develop a resource list		
<input type="checkbox"/> B. Convene an initial pest planning informational meeting.		
<input type="checkbox"/> C. Form a pest planning team.		
<input type="checkbox"/> D. Gather town documents & information.		
<input type="checkbox"/> E. Assess your community tree resource.		
<input type="checkbox"/> F. Define the purpose of developing a community preparedness plan.		
<input type="checkbox"/> G. Identify priority trees.		
<input type="checkbox"/> H. Monitor forest pests.		
<input type="checkbox"/> I. Plan for tree protection and removal.		
<input type="checkbox"/> J. Determine how infested wood will be disposed of & utilized.		
<input type="checkbox"/> K. Plan recovery efforts.		
<input type="checkbox"/> L. Evaluate your community's public policies.		
<input type="checkbox"/> M. Estimate costs.		
<input type="checkbox"/> N. Develop a plan for educating and communicating with community members.		
<input type="checkbox"/> O. Summarize your policies, resources and next steps.		
<input type="checkbox"/> P. Preparedness Plan Outline		
<input type="checkbox"/> Q. Definitions		

Some communities may choose to simply use this completed worksheet as their preparedness plan while others may choose to use this worksheet to organize information but prefer to develop a formal plan, for which a suggested outline is provided at the end of this document. The preparedness and response plan

should be a working document and will need to be updated as new information becomes available on management strategies, pest spread and available resources.

A. IDENTIFY KEY STAKEHOLDERS & DEVELOP A RESOURCE LIST

1. **Identify key people who can help develop and implement your plan, who represent groups to have in the communication loop, and those who may be able to provide assistance.** Towns may already have a resource list as part of their Emergency Operations Plan. Start by checking with your town’s emergency management coordinator or your Regional Planning Commission or town clerk.

Representing Role/Responsibility	Name	Contact
Mayor/Town Manager/ Selectboard Chair Public Information Officer		Phone: Email: Phone: Email:
Volunteer Forest Pest First Detector(s)		Phone: Email:
Tree warden/City arborist		Phone: Email:
Tree Board Member(s)		Phone: Email:
Municipal Utility Representative		Phone: Email:
Solid Waste District Delegate		Phone: Email:
Conservation Commission Member		Phone: Email:
Planning Commission Member		Phone: Email:
Director of Parks/Recreation Committee Member		Phone: Email:
Local Emergency Management Coordinator		Phone: Email:
Director of Public Works/ Road Foreman or Commissioner		Phone: Email:
Local tree/forest professionals		Phone: Email:
Certified pesticide applicators in category 3A. Go to http://www.vtinvasives.org/pesticide-treatment for an updated list		Phone: Email:
Certified arborists/tree removal contractors. Go to: http://www.isa-arbor.com/		Phone: Email:
Volunteer partners:		Phone: Email:
	Garden club	Phone: Email:
Vermont Coverts Cooperators. Contact Lisa Sausville at 388-3880 or lisa@vtcoverts.org		Phone: Email:
	Conservation Commission	Phone: Email:
Master Gardeners. Contact Lisa Chouinard at master.gardener@uvm.edu or (802) 656-9562		Phone: Email:

SOUL Tree Stewards. Contact Kate Forrer at Katherine.Forrer@uvm.edu or (802) 223-2389

Phone:
Email:

Other:

B. CONVENE AN INITIAL PEST PLANNING INFORMATIONAL MEETING

1. **Host an informational meeting** where you invite the stakeholders identified in Section A to learn about: EAB and other invasive forest pests, why planning is important and what the planning process entails. Invite individuals who you think would be good candidates to serve on your pest planning team. Staff from the Department of Forests and Parks are available to speak to your community.

C. FORM A FOREST PEST PLANNING TEAM

1. **Identify a Team Leader and other Team Members** to coordinate community planning and response activities. Your town may already have a tree board, if not consider recruiting subject matter specialists, including volunteer First Detectors, the town Tree Warden, foresters, arborists or nursery professionals. Consider recruiting the people who have the relationships and institutional knowledge for getting things done in your town. Include individuals who can make fiscal decisions, those with authority to make decisions about public tree management, and citizens who can help execute the plan, including the local emergency management coordinator. The Public Information Officer, identified in your town's Emergency Operations Plan, will be able to help with activities such as public awareness events, writing articles, and contributing to the town website.

Name	Responsibility	Contact
	Team Leader	Phone: Email:
	Public Information Officer	Phone: Email:
		Phone: Email:

D. GATHER TOWN DOCUMENTS & INFORMATION

1. **Gather town-specific documents.**
 - Current inventory data on community-owned trees.
 - Ordinances regarding community-owned trees.

- Maps of town/village streets and community-owned areas. (All the Regional Planning Commissions have road maps.)
- Satellite images of town/village parks and representative streets showing tree cover. Images are available from “Google Earth” or your Regional Planning Commission.

2. Determine where the town ROW is.

Most towns don’t own the land under the road or alongside of it; the landowner does and the town owns an easement – a right to use the land for highway purposes. These easements are a public right-of-way (ROW), usually three rods (49.5 feet) wide, which includes the power to manage the trees.

Knowing the extent of the ROW is important because it tells you who will be responsible for the management of the trees. If it is in the towns public ROW, it is town’s responsibility; if it is a state road it is the state’s responsibility or if it falls outside the ROW it is the landowners. To determine the ROWs, you should work with public works officials, road crews or the town clerk. When in doubt, go back to three rods – 49.5’ or about 25’ from the road center line.

E. ASSESS YOUR COMMUNITY TREE RESOURCE

- 1. Describe your latest community tree inventory.** A tree inventory helps identify liabilities before pests arrive. If your town does not have an inventory that was conducted in the last 10 years, with data on tree species and diameter, this should be one of your top priorities.

Question	Notes
When was the inventory conducted?	
Where was the inventory conducted (village center, back roads, etc.)?	
Did it include all tree species? If not, what species were inventoried?	
Who conducted the inventory?	
What data (i.e. species, diameter, etc.) was collected?	

2. **Summarize your inventory data.** (add rows and adjust columns, as needed, to describe your inventory of the tree population in your town):

The tree species at risk were tallied as follows:

Location	No. Trees	% Ash	% Maple	% Hemlock	%[other]
Street trees					
Town green					
Cemetery(s):					
School(s):					
Private					
Town forest(s)					
TOTAL					

Size ranges for the trees are as follows:

DBH Class	# All Trees	# of Ash Trees	# of Maple Trees	# of Hemlock Trees
1-6"				
6-12"				
12-18"				
18-24"				
24"+				

Condition ratings as follows:

Condition Class	# All Trees	# of Ash Trees	# of Maple Trees	# of Hemlock Trees
Good				
Fair				
Poor				
Dead				

3. If you don't have current inventory data, make a plan to acquire more information on community trees.

Question	Notes
<p>List action steps and timeline for conducting or updating your community tree inventory, timeline for completing each action and who is responsible. See the Inventory tab of the Community Resource Toolbox for guidance.</p>	

F. DEFINE THE PURPOSE FOR DEVELOPING A FOREST PEST PREPAREDNESS PLAN

1. Identify the plan goals and objectives.

By implementing the provisions in this preparedness and response plan the city/town/village of _____ is attempting to (check all that apply):

- Do nothing.
- Minimize the impact of _____(pest) by:
 - Reducing public safety hazards posed by dead or dying trees by removing trees as they become infested.
 - Identifying large canopy and high value ash for preventive insecticide treatment.
 - Preemptively removing uninfested ash trees in priority order.
 - Filling existing vacant planting spaces with diverse tree species.
 - Maintaining all new and existing trees.
 - Distributing costs over a manageable time period.
- Reduce the risk of introduction and spread of _____(pest) by:
 - Educating and involving elected officials, business and private property owners
 - Enacting or strengthening ordinances
 - Facilitating early detection of EAB
 - Developing disposal and utilization sites, methods and markets before quarantines are imposed.
 - Contacting the Vermont Agency of Agriculture, Food & Markets regarding compliance agreements
 - Avoiding pruning or removing ash during the adult EAB flight period (May-July)
 - Identifying trees or areas to use for sinks or lethal trap trees once EAB is found
- Prevent future catastrophic losses by:
 - Avoiding over-planting any tree species
 - Designing new planting spaces with tree success in mind
- Other _____

2. **Identify which publicly owned trees are a management priority.** Dead trees soon become structurally unstable. You can reduce hazards in public areas, by developing a process for prioritizing tree removal. Rank by high (H), medium (M) or low (L). Expand this list, as necessary. You may want to add specific properties or other locations such as the town center, schools, etc.

Street trees in densely settled/high use areas. List area(s):

Trees in parks/other town-owned recreational or natural areas. List area(s):

Trees in the right-of-way (ROW) on back roads.

Trees on private land that impact town properties or the town ROW.

Other privately owned trees.

Other _____

3. **Who is responsible for making sure the plan is implemented?**

G. IDENTIFY PRIORITY TREES

1. **Develop a list of priority trees**—large structurally sound and/or valuable trees in culturally or economically important locations, such as the town green, main street, or school, that you would like to preserve.

Tree Location	Description (species, diameter, any significance)	If ash, will you preserve it with an insecticide?
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H. MONITOR FOREST PESTS

- 1. Describe pest detection efforts.** Early detection is critical to slowing pest spread and limiting their impact. The timing of certain management actions is optimal when the pests are within 5-10 miles. The only way to know this is to monitor host trees. Surveying is not incumbent on the town. The state and federal government are doing their own surveying but there's a lot that volunteers can do as well!

Identify areas in your town that are a high risk for pest introduction. For EAB and ALB this includes nurseries, newly landscaped public, commercial, and residential areas, campgrounds, recreational lakes, cottage communities, sawmills, firewood producers, pallet operations, and other wood utilization firms. Contact Forests and Parks staff for a starting list and map of these areas. See the Monitoring tab of the [Community Resource Toolbox](#) for more information.

Question	Notes
If you are going to monitor, then of the areas identified, where will you focus your efforts?	
Who can help survey?	
What time of year will you conduct the surveying?	
Describe your actions steps, timeline for completing each action and who is responsible.	

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- 2. Know who to contact if signs of invasive pests are detected.** Because many “detections” are false positives, protect confidentiality. The recommended process is described below.

If a municipal staff member or resident think they have an invasive pest, then they can visit <http://www.vtinvasives.org/tree-pests/report-it> for pest identification information and contact information for state and federal staff.

If a forest pest infestation is suspected, it must remain confidential until it is verified and the information has been made public by the appropriate authority. APHIS is the lead organization on the identification, eradication, management and quarantines for Asian longhorned beetle (ALB) and emerald ash borer (EAB). If ALB or EAB are found in Vermont then a federal quarantine will be established. In contrast, hemlock woolly adelgid (HWA) is regulated at the state level. The state quarantine is enforced jointly by Vermont’s Agency of Agriculture, Food and Markets, and the Department of Forests, Parks and Recreation.

It is important that residents protect sensitive information about the presence of ALB, EAB, and HWA until the proper authorities have released the information to the public. Privileged information also includes the pest name, location, and name and contact information for any landowner or individual requesting assistance with pest identification.

I. PLAN FOR TREE PROTECTION AND REMOVAL

- 1. Plan for preserving municipal trees using pesticides.** If there are trees designated as high value (See Section G), they can be protected from certain pests, such as EAB and HWA, with pesticides. Systemic insecticides containing the active ingredients imidacloprid, dinotefuran or emamectin benzoate are commonly used to protect ash trees from EAB. The environmental impacts of these insecticides are discussed in the document, Frequently Asked Questions Regarding Potential Side Effects of Systemic Insecticides Used To Control Emerald Ash Borer, available at: http://www.emeraldashborer.info/files/Potential_Side_Effects_of_EAB_Insecticides_FAQ.pdf

Town employees (on payroll) need to be certified as a non-commercial applicator in Vermont category 3a - Ornamental & Shade Tree pest control or the town needs to hire a company that employs at least one person certified in Vermont Category 3A to treat street trees. Specialized equipment is often required.

The town also needs to obtain a ROW permit from the Agency of Agriculture to apply pesticides in the ROW. For more information on Pesticide ROW permits go to http://www.anr.state.vt.us/dec/permit_hb/sheet72.pdf or contact Matthew Wood at Matthew.Wood@state.vt.us. How will you review environmental impact, ensure public safety, and notify the public? Go to the Management tab of the [Community Resource Toolbox](#) for more information.

Question	Notes
If the town wants to preserve high value trees with pesticides then who will conduct the insecticide applications (town employees or contractors)?	
If municipal employees will be doing the work, what training, certification, and equipment do they have and what additional training, certification, and equipment are needed to safely complete the task?	
How will you review environmental impact, ensure public safety, and notify the public?	
Describe your actions steps, timeline for completing each action and who is responsible.	

- 2. Plan for trees through a prioritized process.** Some invasive pests, like EAB, kill trees within a few years. After being killed, trees deteriorate quickly. If left in place, they may become hazardous, and allow more rapid spread of the pests they harbor. Priority areas for removing trees are identified in Section F. The Tree Warden is the only person authorized to approve removal of municipal trees, unless a town tree ordinance dictates otherwise. Reference the Management tab of the [Community Resource Toolbox](#).

Question	Notes
<p>Describe the process for prioritizing and designating trees for removal. If you have a large number of trees in poor condition, hazardous, or growing in undesirable locations will you pre-emptively remove them?</p>	
<p>Who will conduct the removals (town employees or tree care companies)?</p>	
<p>If municipal employees will be doing the work, what training and equipment do they have and need (chainsaw training?) to safely complete the task?</p>	
<p>How will you notify the public?</p>	
<p>Describe your actions steps, timeline for completing each action and who is responsible.</p>	

3. Consider private property trees. The decision to treat, remove, or retain private trees rests with the property owner, unless a private tree poses a threat to public safety or public property. A town is liable for hazardous trees that threaten public property or a public right-of way, which can also include private trees. The Vermont Tree Warden Statutes only give a town tree warden authority over shade trees on public property. Some towns have tree ordinances that clarify removal and treatment of private trees. See the Policies tab of the [Community Resource Toolbox](#) for more information.

Question	Notes
Will your town require the removal or treatment of private ash trees that affect public areas or rights-of-way?	
If so, who has to pay for it?	

J. DETERMINE HOW INFESTED WOOD WILL BE DISPOSED OF OR UTILIZED

A key aspect of reducing the spread of forest pests is properly disposing of or utilizing the wood, brush and stump grindings generated by the removal of infested trees. The disposal method and government regulations that apply to the movement, storage and disposal of woody material varies by pest. Collaborating with adjacent towns on wood disposal areas, chipping equipment, tree care crews, and utilization of ash materials – e.g., chip marketing, will save staff time and resources.

1. Locate at least one wood disposal site in your town or nearby.

The purpose of a debris disposal yard is to help prevent wood which could potentially house forest pests, such as the emerald ash borer (EAB) or hemlock woolly adelgid (HWA), from being transported out of a quarantined area. They can be used as staging sites for wood processing, such as chipping, grinding, and debarking, and related marketing activities. The yards also serve as temporary or emergency storage sites when trees are removed. They allow municipalities, tree service companies, utilities and individuals to drop off cut material for processing and disposal in a manner to prevent artificial spread of EAB and HWA. Disposal sites or wood recycling centers may also accept various species, not just ash and hemlock, and can make wood disposal more efficient and economical. Locate at least one wood disposal site in your town or nearby. See the Disposal & Utilization tab of the [Community Resource Toolbox](#) for more information on siting disposal yards.

Site 1 – Location: _____

Contact Name:

Phone:

Mobile:

Site 2 – Location: _____

Contact Name/Role:

Phone:

Mobile:

Site 3 – Location: _____

Contact Name/Role:

Phone:

Mobile:

2. **Consider how to best utilize the wood to minimize environmental impact, offset disposal costs, or even create a value-added product.** What wood utilization options and local markets for infested wood exist in your town, county, or region? See the Disposal & Utilization tab of the [Community Resource Toolbox](#) for links for utilization and disposal options in Vermont. Create a directory of local markets for ash wood to distribute to residents.

K. PLAN RECOVERY EFFORTS

1. **Plan for the routine maintenance of public trees,** which include high value host trees, structurally sound non-host canopy trees and newly planted trees. Routine maintenance ensures a longer life span for the tree and a better return on your investment. For example, proper pruning can remove disease or infected wood, improve structure and reduce the likelihood of limb or structural trunk failure during storms.

Question	Notes
<p>Does the town conduct routine maintenance of public shade trees? If not, is this a priority and what trees would you focus maintenance on (high value host trees, structurally sound non-host canopy trees and newly planted trees)?</p>	
<p>What staff, training, certification or equipment are needed?</p>	

2. **Fill vacant planting spaces with a diversity of species.** Planting vacant spaces now before EAB or other forest pests are identified in your town will not only give your community a head start on tree replacement, but will give those new trees a chance to grow and spread the age of your urban forest out more evenly. The general rule of thumb is to strive for no more than 5% of one species (ie. sugar maple) and 10% of one genus (ie. maple). It's also important to make sure you select the right species for the right site.

Identify location and size of existing vacant planting spaces in your town. Vacant planting spaces can either be identified during the tree inventory or using aerial photography through Google Earth or Google Maps. Considerations for increasing species and age class diversity, planting the right tree in the right place, proper planting and maintenance and other resources are found in the Recovery tab of the [Community Resource Toolbox](#).

Question	Notes
What species are over-represented in your urban forest and thus should avoid planting more of?	
By whom and when will these vacant spaces be planted?	
Does your community require new developments to provide and plant street trees within the public right-of-way as part of its subdivision site planning and permitting process? If so, how and what criteria are used to review and inspect landscape design plans?	
Describe your actions steps, timeline for completing each action and who is responsible.	

L. EVALUATE YOUR COMMUNITY'S PUBLIC POLICIES

1. **Make sure your town has the authority needed** to enter private property for inspection of diseased or hazardous trees, the ability to order the removal or treatment of diseased/infected tree(s), and the ability to remove or treat diseased/infected tree(s) upon non-compliance of a property owner. The Vermont's Tree Warden Statutes authorizes a town warden to conduct recommended control measures to deal with infestations, the cost of which shall be paid by the municipality however they do not establish the procedures for inspection, public notice, control, and abatement of diseased, infested, and hazardous trees. In order to prepare for invasive forest pests, protect public safety and maintain community forest health, your town may want to consider developing a municipal tree ordinance. See the Policies tab of the [Community Resource Toolbox](#) for guidance.

Question	Notes
Describe action steps needed, timeline for completing each action and who is responsible for creating an ordinance so the town has the authority needed to prevent and respond to invasive pests.	

2. **Develop a policy for residents who wish to save right-of-way trees through pesticide treatment.** Many towns in other states have incentivized treatment with a cost share program where residents are reimbursed 50% of the treatment costs up to \$50 per ash tree if they agree to treat the tree with the Village's preferred method, a trunk injection of TREE-age (http://www.vah.com/departments/public_works/eab.aspx).

Question	Notes
If your community decides not to treat trees, will homeowners be able to pay a Commercial Pesticide applicator for the treatment of trees in the town Right-of-Way? If so, describe your policy, including limitations, such as whether this should be permitted by the tree warden?	

M. ESTIMATE COSTS

- 1. Estimate costs and resources needed (funds, materials and labor) for each forest pest response action for public trees and private trees affecting the right-of-way or public land.**
Because EAB is the most immediate threat, start with estimating costs for ash. (In communities affected by HWA, or close to known HWA infestations, you will also want to estimate costs for hemlock.) This information will show you the direct impact EAB (and HWA) will have on your budget and staff. It will help you make choices on whether to treat or remove trees, whether to spread the costs over time or deal with them all at once and what kind of training, equipment, supplies and contracts you'll need. For each management option, consider the resources needed to implement this in your community. For EAB, start with the EAB Cost Calculator. More information is available on the Management tab of the [Community Resource Toolbox](#). Attach the budget to your final plan.

- 3. How will the town fund the implementation of the plan?** Identify any financial constraints that may hamper the plan implementation. What additional financial resources are available to assist in implementation? Describe the plan for securing any additional funding and overcoming any barriers identified.

Question	Notes
Identify any financial constraints that may hamper the plan implementation.	
What additional financial resources are available to assist in implementation?	
Describe action steps, timeline and who is responsible for securing funding and overcoming barriers identified.	

N. DEVELOP A PLAN FOR EDUCATING & COMMUNICATING WITH COMMUNITY MEMBERS

1. What communication method(s) will your community use to relay decisions and updates to your residents, elected officials and local businesses? Developing an outreach and education plan is key to keeping your community informed with up-to-date information, fostering support for pest management activities and budgeting, making sure infested material is properly disposed of and residents don't facilitate the spread of pests. The Outreach tab of the [Community Resource Toolbox](#) provides more information.

Describe the communication methods you will use to keep residents, elected officials and businesses informed:

Communication Method	Target audience	Timing (i.e. monthly, quarterly, etc.)
<input type="checkbox"/> Town newsletter		
<input type="checkbox"/> Town website		
<input type="checkbox"/> Front Porch Forum/email List		
<input type="checkbox"/> Local newspaper:		
<input type="checkbox"/> Public meeting:		
<input type="checkbox"/> Display at town events:		
<input type="checkbox"/> Other:		

Question	Notes
What informational resources do you need?	
Who is responsible for communicating with town officials, residents and local businesses?	

O. SUMMARIZE YOUR POLICIES, RESOURCES & NEXT STEPS

It is important to realize that the decision makers will most likely not have time to go over the fine details in your entire plan. Therefore, the summary must define the problem with forests pests and emphasize important plan aspects that will influence decision makers to support the recommended actions, including costs, recommendations and consequences. Sample text is provided below. *Text in italics indicate the type of town-specific information to include in your summary.*

This document outlines an action plan for the city/town/village of [*municipality name*] to follow before and after the arrival invasive forest pests such as the emerald, ash borer (EAB), Asian longhorned beetle (ALB) or hemlock woolly adelgid (HWA). The emerald ash borer is an introduced forest pest that is currently killing all species of ash trees across the north central and northeast United States. The introduction of EAB into Vermont is expected to have devastating consequences to our ash resource in both forest and urban areas. As an agent of lasting environmental change in the northeast, this insect is on par with Dutch elm disease and chestnut blight of the last century. The Asian longhorned beetle is another introduced forest pest that attacks maple and 12 other tree genera. HWA has infested hemlock trees in southern Vermont. While this pest has yet to lead to hemlock mortality in Vermont, it has killed thousands of hemlock in the mid-Atlantic. The maples, ash, hemlocks and other host species that could be attacked by these forest pests make up nearly two-thirds of the trees in Vermont's woods. Their introduction could have devastating impacts on the forest products industry, tourism, water quality, streetscapes and wildlife habitat.

This action plan consolidates essential information within one useable reference document and details what the city/town/village of [*municipality name*] will do before these pests are detected, what we will do when they are detected, and what we will do once they become established.

The action plan presented here covers municipal actions that will be taken in cooperation with private, state, and federal partners. Specifically, it outlines partner authorities and responsibilities, identifies our local forest pest project leader and forest pest team members, addresses internal communications, public relations and outreach, provides protocols for a public tree inventory and a local forest pest survey, outlines a strategy for managing our community ash trees including waste wood disposal and utilization, comparative cost analysis of removals vs. pesticide insecticide treatments, assessment of needed equipment and other resources, and tree replacements.

Ash and other Host Species at Risk

Summarize your inventory data and management costs, if available. Here are some examples:

There are [*number*] ash trees at risk on public land or in areas affecting public right-of-ways based on tree inventory data that was recently updated in [*year*]. This represents [%*___*] of the total street tree population. [*If you have a more thorough street tree inventory then summarize the species distribution and diameter class here.*]

Estimated cost to remove [*number*] ash trees over a 5yr period is [\$_*___*], which is based on inventory data and projected costs from past removals.

Estimated cost to replant vacant planting sites over 5 years with diversified tree species and providing necessary after care to ensure establishment is [\$_*___*].

Estimated value lost from the loss of the [number] community ash trees is approximately [\$___] based on accepted industry standards for estimating tree value. Note: this does not include monetary values for environmental benefits such as reducing storm water run-off, mitigating air-pollution and reducing heating and air conditioning costs.

Town Resources Available to Mitigate Impact and Reduce Risk

Summarize the labor, equipment and funding available to mitigate the impact of forest pests. Here are some examples:

The city/town/village of [municipality name] has an updated street tree-inventory with information on tree attributes, condition data and recommended actions items which is critical to effective forest pest planning and management. This essential data will allow staff to focus monitoring and management efforts in high-risk and priority areas.

The town has a tree warden who is an ISA Certified Arborist, 4 road crew members who report to the Director of Public Works and a Forest Pest First Detector to help with education and outreach. The crew size is adequate to handle EAB related tree work if distributed over a multi-year plan. However, there is insufficient administrative support due to the lack of a dedicated Town Forester to respond to forest pest public inquiries, hazard inspections, training, scheduling, contracting, and media relations that are inherent with forest pest management.

Equipment needed to perform forest pest related tree work is adequate but could be improved significantly to increase crew efficiency and safety.

Plan Recommendations

Summarize the recommended actions from the plan. Here are some examples:

- Establish budget for forest pest related activities. Although timelines are uncertain, funding used to implement this plan will greatly increase the town's capacity to respond to current demands and to address future threats to the community forest.
- A key weakness identified in the city/town/village of [municipality name] is the lack of a tree ordinance that gives the town authority to enter private property for inspection of diseased or hazardous trees, the ability to order the removal or treatment of diseased/infected tree(s), and the ability to remove or treat diseased/infected tree(s) upon non-compliance of a property owner. It is recommended that a tree ordinance be developed to address the management of public trees and pest infestations.
- Engage citizens, business owners and decision makers to educate and inform them of forest pests. Utilizing the town website, newsletter, mailings, and public meetings will help prevent early introduction and help garner public support.
- Implement 5 year management plan to reduce the town ash component to reach 10% of the total population by removing trees that are identified as being in poor health due to non-forest pest related factors. Estimated cost distributed over the next (10) years is \$_____.

- Increase town capacity to move and store pest infested generated wood waste by purchasing, leasing or renting equipment such as large chippers, log loaders or grinders. This may also be accomplished by retrofitting existing equipment used by other departments to accept chipper boxes and grapple buckets.
- Cultivate beneficial partnerships with neighboring towns. Similar municipalities have used partnerships to effectively find cost-effective solutions to equipment needs and wood utilization programs.

Our understanding of forest pest management is constantly expanding as managers gain experience dealing with these invasive pests and as new research is conducted. Accordingly, this plan will be updated on an as-needed basis. Many of the actions accomplished from this plan will have positive, long term benefits for the community. Our citizens will have a greater understanding and appreciation for our forest and urban tree resource, our community will be much better prepared for future invasive pests, and we will have established relationships with people and organizations that will be invaluable to us in maintaining the many environmental, economic and societal benefits of a healthy urban forest.

P. PREPAREDNESS PLAN OUTLINE

As mentioned above, some communities may choose to simply use the completed worksheet as their preparedness plan. For those who choose a more formal plan, we recommend the following outline for organizing the information and action items from the planning worksheet. The types of information and details included in your plan will depend on your community, therefore the outline should guide -- not dictate -- the contents of your community's plan.

Purpose—*This section identifies the reasons for developing a forest pest preparedness and response plan, the geographic extent the plan applies to, administration of the plan, and the intended results.*

Executive Summary—*It is important to remember that the Executive Summary may be the only document read by decision makers who do not have time to go over the fine details in your entire plan. Therefore, the summary must define the problem with forests pests and emphasize important plan aspects that will influence decision makers to support the recommended actions, including costs, recommendations and consequences.*

Definitions—*It is often helpful to include an explanation of technical terms not commonly used by the general public.*

Local Authority—*This section should address the legal framework for forest pest prevention and management. Describe your local tree ordinance, what needs to be done to strengthen it or action steps for creating an ordinance that will provide your municipality with the authority and process for preventing and responding to tree pests.*

Community Tree Assessment—*Summarize your inventory data if you have a current inventory. Example text is included below. If you don't have current inventory data, then provide information in this section on action steps for conducting or updating your community tree inventory, including the inventory methods you will use.*

Management Recommendations, Preparations & Actions—*This section should describe the actions that the community will take in preparation and response to the loss of its forest resource from forest pests such as EAB, ALB and HWA, including:*

- *Insecticide Treatment of Historic/Significant Trees*
- *Tree Removals on Public and Private Property*
- *Wood Utilization and Disposal*
- *Planting and Restoration*
- *Forest Pest Monitoring and Reporting*

Assessment of Resource Needs—*Summarize the resources needed to implement the Forest Pest Preparedness and Response Plan.*

Community Outreach and Education Strategy—*Summarize the communication method(s) and timing to be used to relay decisions and updates to your citizens.*

Local Resource Directory—*Summarize the contact information for individuals involved in forest pest preparedness and response.*

Q. DEFINITIONS

ALB—the Asian longhorned beetle insect, as an adult it measures approximately 1-1.5" long, black & white banded antennae longer than the insect's body, black patent leather body with white spots. Host species include maples and other hardwoods.

compliance agreement— means a written agreement between the State of Vermont and any person engaged in growing, handling or moving regulated articles, plant pests, plants, parts of plants, or regulated plant products, where the person agrees to comply with stipulated requirements.

DBH – diameter at breast height; represents the diameter in inches of a trunk cross-section measured at 4½' above ground level; a basis for estimating or identifying tree volume, value, management needs and costs, utilization options, etc.

delimit – to establish geographic limits or boundaries; emerald ash borer quarantine areas are determined after delimiting or determining the extent of area infested by EAB.

EAB – the emerald ash borer insect; as an adult it measures approximately ½" in length by 1/8" wide, is metallic green in color and somewhat bullet shaped. The larvae can reach a length of a little more than 1" in length, are white to cream colored, have a 10 segmented abdomen with a pair of brown, pincer-like appendages on the last segment.

Readiness team – a group of people responsible for all aspects of preparing for forest pests within a particular jurisdiction/municipality; team members have specific roles and tasks.

Preparedness plan – a document delineating local forest pest readiness activities and processes; includes scope & purpose, authority, responsibility, policies & procedures, actions/tasks, available resources, forms & contracts, technical references & support information (such as surveying and reporting protocols), and similar content.

eradication – total elimination of host trees within a specified geography area where specific pest has been verified. This was the initial and only thought process when EAB first became established in the U.S. With the research and lessons learned from the Midwest, other management controls are now being considered.

host – means any plant pest, plant, plant product or other organism upon which a pest or beneficial organism is dependent for completion of any portion of its life cycle.

HWA – hemlock woolly adelgid insect, 1/16" to 1/4" white woolly masses, cotton ball-like texture attached to undersides of twigs at the base of the needles

infestation – refers to an area where the trees have been positively identified as having an established population of a forest pest.

marshaling yard – a fenced-in location within a quarantine area where infested or quarantine-area trees are collected and held for further handling.

preemptive removal - in the case of EAB it refers to removing trees prior to them becoming infested with EAB. At this time (October, 2012) it has not been recommended by either the VT Agency of Agriculture or VT Department of Forests Parks and Recreation to perform this practice, however it is up to each municipality



dependent on their fiscal and personnel resources along with the amount of ash trees within their community and the distance from known EAB infestations. It does seem reasonable that if a community has ash trees that are declining or are in conflict with buildings or utilities, that instead of performing a remedial pruning, removal may be a strong option.

Quarantine – means a legal declaration by the Vermont Secretary of Agriculture to prevent the spread of highly injurious plant pests which specifies the plant pest, plants, parts of plants, plant products or the regulated articles, conditions governing movement, the area or areas quarantined, and any exemptions.

quarantine area – a defined geographic area from which goods may not be transported; quarantines will be established by federal or state agencies to restrict ash wood movement out of infested areas to avoid emerald ash borer infestation of new areas; quarantines can be applied to an individual property, township, county or entire state.

regulated article – means an article of any character, i.e. logs, firewood, or other plant material, carrying or capable of carrying a plant pest.

This template was adopted from the “Emerald Ash Borer Community Preparedness Plan” © 2008, Michigan Departments of Natural Resources and Agriculture, the “EAB Toolkit for Wisconsin Communities”, Wisconsin Department of Natural Resources, Urban Forestry Program © 2008, “Reducing the Impact of Emerald Ash Borer, Guidelines for Managing Ash in Wisconsin’s Urban Forests” © 2010, Wisconsin Emerald Ash Borer Program and the “New York State Emerald Ash Borer Community Preparedness Plan Development Workbook” © 2010, Cornell University Cooperative Extension. Text reprinted with permission.