Naperville Area Homeowners Confederation
Naperville's Neighborhood Network

Emerald Ash Borer Risk Management Workshop – Meeting Agenda

December 8, 2011

8:00 AM	Registration
8:30 AM	Welcome – Dr. Bob Buckman, NAHC; George Pradel, Mayor, City of Naperville; Doug Krieger, Naperville City Manager Meeting Goal: Motivate immediate action by municipalities to mitigate the negative public safety, budgetary and environmental repercussions of reactive EAB management
8:35 AM	*Near-Term Impact of EAB on Local Municipalities* Dr. Fredric Miller, Morton Arboretum
8:50 AM	*Don't Wait: The Repercussions of Exponential Tree Death Due to EAB* Chad Tinkel, Manager of Forestry Operations, Ft. Wayne, IN
9:35 AM	*What You Can Do Now: Municipal Planning for EAB Management in 2012* Brad Bonham, Municipal Consultant, Wyoming, OH
10:00 AM	*Naperville EAB Management Plan* Jack Mitz, Naperville City Forester
10:15 AM	Break
10:30 AM	EAB Management Resources (approx. 15 min. each) • *Municipal Law and EAB* o Margo Ely, Naperville City Attorney • *EAB Myth Busting* o Dr. Fredric Miller, Morton Arboretum • *Economics of Management Options* o Dr. Rich Hauer, University of Wisconsin • *Homeowner Outreach* o Peggy Drescher, Glen Ellyn Village Forester • *Management Success Stories* o Brad Bonham, Municipal Consultant • *"What I Would Have Done Differently"* o Craig Schaar, City Forester, Toledo, OH
11:55 AM	Call to Action & Closing Remarks – Dr. Bob Buckman
12:00 PM	Lunch Provided – Table Discussions
1:00 PM	Adjourn

DEPARTMENT OF PARKS, RECREATION & FORESTRY

Douglas A. Schachtner, Director

Rebecca Lane, City Forester

M E M O R A N D U M

DATE: December 12, 2011

TO: Kim Sebastian and Olivia Witthun,
DNR Regional Urban Forestry Coordinators

FROM: Rebecca Lane, Oak Creek City Forester

RE: **Emerald Ash Borer Risk Management Workshop Notes (Naperville IL, December 8, 2011)**

Hi Kim & Olivia,

To follow are a few notes from the Naperville, IL EAB workshop last week. Next I'll fax over a couple things like the agenda and Rich Hauer's handout.

Approximately 100 Naperville home owner associations are connected collectively through an umbrella association known as Naperville Area Homeowners Confederation (NAHC). NAHC is very active in the promotion of ash treatment for EAB control.

Dr. Fredrick Miller of the Morton Arboretum, entomologist, spoke re-emphasizing the exponential explosion rate of EAB infestations. Possible to have no symptoms for 2-3 years.

0 to 4 years	little tree decline
5 to 8 years	slow tree decline
8 to 12 years	exponential/rapid tree decline

Chad Tinkel, Manager of Forestry Operations, Fort Wayne IN
(Human population 256,000)
(in exponential ash decline phase)

Manages 51,000 trees – street and 86 parks
Prior to EAB city had 14,000 ash trees – 25% of Street trees (I think)
4,000 trees slated for removal in 2011
5,000 trees estimated for removal in 2012

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Originally had a 5 year plan - that turned out to be way off; for a while he thought he was keeping up well but it just ran away from him
Local arborist companies couldn't keep up with their needs – began coming from further way

12 months after death ash trees were dropping scaffold limbs; houses and cars have been hit with limbs; they have pending court claims

When in this fast pace time of decline, bark strips off trees all at once and creates a huge – more than imagined – amount of wood debris to pick up – lots of calls on this

4 full time employees – all they do is removals; emphasizes that other things are not being addressed

Their first removals were ash under powerlines

EAB issues according to Chad:

1. Economic
2. Environmental
3. Public safety
4. Political

The got a Great Lakes Basin Plan grant for removals (I think)

- 150 trees removed a week
- Sawmill buys the logs for a nominal amount (not shared)
- **Ash wood quickly degrades**
- Ash hard on blades and saws

Their equipment and personnel:
17 employees
4 chip trucks
4 bucket trucks
7 chippers
3 dump trucks
1 log loader
2 cranes

Breakdown of one removal project (might have been his grant):
Contractor: 2,500 removals, including stump grinding for $573,900 ($229.56 per tree)

They were calling in 80 to 100 Digger's locates per day for various projects and they overwhelmed them to the point that they couldn't keep up, had to delay projects

Amidst these hardships his budget (basically EAB) was cut: They may do no planting in 2012 due to a combo of economics and labor

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Brad Bonham, Municipal Consultant, Wyoming, OH

EAB advances at a pace of 15 to 20 miles per year

She suggests:

Treat ash as a herd not individuals – most economic with optimal outcome
-removal rate manageable
-safety issues decreased
-resources best protected
i.e. order prevails

Sort herd (access for worthiness in treatment):

1. Good structural integrity
2. Set a threshold for canopy thinning >> removal
3. Proximity to utilities
4. Individual condition scores

Worst possible strategy to her way of thinking is remove-as-infested, because it can get away on you quickly

Temporary treatments (treat to stage removals TSR she calls it) slow decline and control schedule

Windshield survey with estimated DBH is better than nothing

Makes mention of a 16-page Multi-State Reference

Keep website material current

After treatment tree canopies may appear to decline for a year or two before rebounding

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Jack Mitz, Naperville City Forester

60,000 total trees; 25% ash

Confirmed EAB in Naperville June 2008
-treated right away
-initially found in small diameter trees
-so far have treated 6,000 trees for 148,000 ($24.67 average per tree)

Ongoing inventory

Stump removal has been an issue for them, not sure which part of it

Slide showed of a large tree where every part of the bark and bare trunk was overlapping galleries

They found contractor treatments to be very competitively priced

They have a donate-a-treatment program

Generally, if an exit hole exists at eye-level, indicates too infested to treat

They have an updated ordinance for viewing on their website

Prefers to plant every other tree varying species - style of replacement

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Richard Hauer – Trees have value!

Extreme Urban Forest Make-over
The Green Reaper Edition

Title quote from an old article regarding DED management: *An Orderly Transformation of an Urban Forest*

Frame questions:

1. How much to remove dead trees?
2. Value of lost trees
3. Cost to replace
4. No. of trees remaining

Value models:
CTLA – (compensatory)

iTree – (functional)
Definitely check out new online calculator (Purdue?)

Handout

Peggy Drescher, Glen Ellyn Village Forester
Homeowner Outreach
1400 ash, affluent community

They sent letters to residents that had ash trees (private)

Threshold of deadwood set to determine removals
Established group rates for treatment – rate included private trees

Keep outreach up-to-date

She trained volunteers to ID and tag ash trees

Checkout Purdue Extension

David Bienemann, City of Toledo

Initially they were in state mandated zone that left no choice; they were forced to remove due to eradication law

They tub grind most wood in horizontal tub grinder, which they have

They are forced also to use prevailing wage

Things happen elsewhere when you are concentrating on ash

They had 8% ash

If he could do it all over:

1. Take more pictures
2. Would have treated 100 to 500 ash trees
3. Would have sprayed stumps – sprouts were a drain to keep up with
4. Wouldn't have let politicians keep them from continuing removals (?)

At the end he said they had plans to start planting ash trees again, and treating them from the start

Money and Ash Tree Management: Prioritizing Decisions in the Face of EAB

Andrew VanNatta and Richard Hauer

The practice of arboriculture and urban forestry has evolved with many standards and best management practices used to advance green infrastructure. From the ANSI A300 Standards for Tree Care Operations and ISA Best Management Practices to the CTLA's tree appraisal system and i-Tree assessment tools, urban forest management continues to grow as a positive component of many municipalities. Even so, the management of trees often falls beyond the scope of traditional capital asset administration (Knight 2008, Hawken 1997). Because urban forests do not generate much real revenue, managers must frame their decisions on a "triple-bottom-line" approach of social, ecological, *and* economic factors (Clark et al. 1997). The integration of these three components necessitates that practitioners make efficient, effective and equitable urban forestry decisions. Effective means you complete the task at hand. Efficient is the cost of completing the job per unit effort. Equitability occurs when no one is treated better or worse off. Urban forest improvement is demanding, and recent pests – such the emerald ash borer (EAB, *Agrilus planipennis*) – have only highlighted the need for a holistic visioning and management process.

As EAB has spread across the U.S. and Canada, practitioners are faced with difficult questions. Do I treat to retain, preemptively remove, or replace my ash trees? Should I preemptively plant trees before ash die? Should we just get rid of all urban trees since they cost money to plant, maintain, and remove? Answers to these questions should address what is the most economically efficient solution. Quantifying costs *and* benefits is an important part. If you see no value in urban trees, the answer is easy, get rid of the trees. The science says this not the case and urban tree populations typically exceed the life cycle cost of managing the asset. Unlike roads, utilities, and vehicles that depreciate in value, urban forest value appreciates over time. While recent research has provided valuable insight on the economics of EAB management (Sadof et al. 2011, VanNatta et al. 2012), it's up to the practitioner to apply these tools in the right place, at the appropriate time, for a dedicated purpose. The following steps highlight some important factors for EAB management that considers the community and its inherent limitations.

Step 1: Inventory

Keeping an account of existing inventory has long been an accepted practice in capital asset management (GFOA 1998, Calia et al. 2000). Knowing your ash is an important step to addressing EAB management costs. Recognizing community constituents is as important. Urban foresters manage people as much as they manage trees, and citizen involvement is a key component of the decision-making process (Johnston & Shimada 2004, Westphal 2003). Urban forest projects are more effective if the community is integrated into the planning process (Burch 1993), and "repositioning" the urban forest in the minds of city leaders and residents can be an effective approach for garnering budgetary support (Crompton 2002). An inventory of community resident perceptions and desires of the urban forest is crucial to developing an EAB response that best fits the community. An assessment of available equipment and human resources is also important to see if the response is internal, external, or both.

Step 2: Assign Priority

A successful EAB management decision rests not on any single variable, but on the complete needs and desires of the community. Is the lowest cost option desired or is the conservation of the greatest number of trees over time the goal? Is the size of future forest stock most important, or do community members want to get the most "canopy for the currency?" Management decisions will change with the goals of the community, so it is important to define these before delving into the numbers routine. The following are important considerations when assigning priority to an EAB management plan.

Risk & Liability: Priority should be given to the health, safety, and welfare of the general public. Tree risk assessment and storm response models are management approaches that can be adapted to an EAB response. Decreasing the number of dead or dying trees due to EAB can effectively reduce risks. Consider removing ash in poor condition first and maintain those with the greatest functional or compensatory value. Risk prioritization improves safety and reduces urban forest liabilities. Using a medical triage analogy, "remove the worst first."

Cost Considerations: Economic decision-making models are one important component of the planning system. Community finance managers use economic criteria daily and EAB management becomes more defensible by such use. Consider: does the specified alternative lower or raise an opportunity cost?; does spreading out costs lead to greater efficiency?; can EAB management projects be coordinated between departments? Whether one likes it or not, EAB will cost society money and reducing management costs and maintaining net urban forest value are important goals.

Citizen Coverage: Determining who receives community benefits has significant equity implications. Treatment to retain ash in areas with existing tree canopy deficiencies is an idea to consider. Citizen involvement plays an important role forging equitable urban forestry decisions (Shoup 1996, Dorfman et al. 2007). Finding common ground is central to the development of equitable goals and objectives (Zhang & Zheng 2011).

Political Feasibility: While politics should not be the only consideration when assigning priorities, these realities must certainly come into play. Education, collaboration, and outreach are important components of engaging politically significant stakeholders (Wolf 2001, Wolf 2007). Moving forward with EAB management plans without a clear education, collaboration, or outreach plan can result in political bad will.

Established Standards: Conditional or functional performance standards can be established internally (comparing past with current output) or externally (between municipalities, agencies, or third parties). For instance, will the selected alternative change existing or proposed standards? Is the stated action in agreement with an area's comprehensive plan?

Forest Structure: Whether or not one chooses to manage EAB, costs will be incurred and the urban forest structure will be impacted. The community must envision what the desired forest structure will be today and years down the road. For instance, by not replacing a removed ash tree, one incurs no direct costs, but also forgoes any future benefits. If this is a shared community goal, then it is the right one. In contrast, a newly planted tree will provide little immediate benefit, but over time will produce net benefits. By considering the long-term implications of management decisions on forest structure, the most efficient, effective, *and* equitable outcomes can be achieved.

Step 3: Selecting the Preferred Alternative

Urban forest sustainability is an iterative, innovative process and must be performed not only at the municipal level, but on a block-by-block, person-to-person basis. Current research demonstrates that treatment of ash for EAB is an economically viable option; however, relying solely on numbers is a dangerous proposition. Likewise, relying too heavily on any one management option can result in an inefficient, ineffective, and inequitable situation. The use of a scorecard for evaluating numerous alternatives at the same time is a valuable and worthwhile activity. When used in conjunction with a community visioning process, the application of such a system can prove both economical and beneficial to community well-being.

The scorecard illustrated in Figure 1 demonstrates the dynamic nature of the planning environment. An EAB cost calculator developed at the University of Wisconsin – Stevens Point provides a method to analytically compare alternatives. The model allows urban forest managers to use their specific date evaluate their ash tree population, simulate tree growth and mortality, add management cost data, and make decisions based on their unique goals (Table 1).

Decision making for EAB management options should be based on community goals and objectives. If your goal is to spend the least amount of money, then the preemptive removal of all ash trees preemptively is the least costly option. However, this is the worst option if your goal is to maximize net urban forest value (benefits – costs). Preemptive removal provides approximately one-third of the net value of the urban forest over 20 years compared to removing ash after they die (doing nothing). Conservation of ash through treatment, in contrast, provides the greatest net urban forest value, approximately twice the value as doing nothing. Preemptive ash removal followed by tree planting is intermediate between preemptive removal only and treatment of ash trees.

Step 4: Evaluation

In any planning process, a solution today may not appropriately meet tomorrow's needs and goals. By continually appraising conditions, balancing priorities, and reevaluating the most appropriate, time-sensitive alternative, managers can evolve with changing circumstances and plan for the most environmentally, economically, and socially sustainable results.
The science and management approaches to EAB are evolving and, ideally, makes decision making easier. Managers faced with EAB decisions need to determine community goals and plan accordingly if they change. Economics and urban forest ecosystems are another equally important aspect of managing EAB. You can wish EAB goes away, yet it won't. Taking the time to develop a comprehensive management plan will make the difficult decisions easier.

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VanNatta, A.R. and R.H. Hauer. 2012. *Money and Ash Tree Management: Prioritizing Decisions in the Face of EAB*. Arborist News. (in press, 21(1):? – ?).

GOELLER SCORECARD					
Goals & Objectives	Options				NO EAB
	CONTROL	TREATMENT	REMOVAL	REMOVE/REPLANT	
CTLA Relative Ratio: Retained[1]	1.00	1.98	0.52	0.62	2.10
Mean Net Value Retained Per	289,761	574,367	151,424	180,542	608,316
CTLA Relative Ratio: Lost[2]	1.00	2.52	1.01	0.71	2.95
Mean Net Value Lost Per Year	39,956	17,195	39,638	28,830	13,564
Mean DBH Per Year	10.0	11.7	9.0	5.6	11.8
Mean # of Trees Lost Per Year	46.2	19.7	47.6	61.1	15.8
Trees Retained at Year 20	291	585	0.0	709	667.6
Total Maintenance Cost	230,262	77,150	102,157	230,401	387,330
Total Removal Cost	68,088	27,425	77,958	65,542	22,363
Total Treatment Cost	0	216,000	0	0	0
Total Cost	298,350	93,575	180,425	568,885	409,693
Mean Per Year Cost	14,207	29,692	8,592	27,080	19,509
Mean Per Tree Cost	31	18	10	27	23

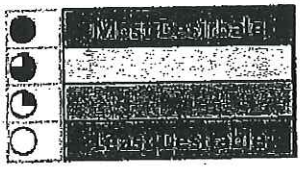

Figure 1. Comparison of four EAB management alternatives using the Goeller Scorecard method and the outcome without EAB using methods of VanNatta et al. 2012 for a 1000 ash tree population. ([1]Relative ratio = Management option / Control option; [2]Relative ratio = Control option / Management option; management options include treatment, pre-emptive removal over five years, pre-emptive removal and replanting over five years, and no EAB; See Table 1 for modeling assumptions.)

Table 1. Model assumptions used in UWSP EAB Cost Calculator.

VARIABLES	UNIT	VALUE
Starting Diameter	Inches	8.1
Starting Population	Number	1000
Preemptive Years	Number	5
Growth Rate	Inches/Year	0.4
Maintenance Cost	$ (USD)/DBH	3.23
Removal Cost	$ (USD)/DBH	10
Injection Cost	$ (USD)/DBH	3.75
Injection Time	Years Between	2
Injection Survival	Percent	0.99
Natural Survival	Percent	0.98
Control Survival (EAB)	Percent	0.8
Replacement Size	Inches Cal.	2
Replacement Cost	$ (USD)	100
Installation Cost	$ (USD)	200
Unit Tree Cost	$/sq. in.	31.83
Species	Percent	0.70
Condition	Percent	0.75
Location	Percent	0.70
Interest Rate + 1	Percent	1.06