

EMERALD ASH BORER **MANAGEMENT PLAN**

AUGUST 2014

Preparedness Plan to Reduce the Adverse
Impacts of Emerald Ash Borer in DeWitt, NY

Town of DeWitt 

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Preparedness Plan to Reduce the Adverse Impacts of Emerald Ash Borer in DeWitt, NY

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Contents

Executive Summary..... 3

Purpose: 5

Desired Outcomes:..... 5

Key Messages:..... 6

Background Elements 6

 EAB History..... 6

 EAB Biology 7

 Scope of NY Problem (as of August 2014) 7

 Scope of DeWitt Problem 8

 Community Specific Information 8

 Plan Oversight, Implementation, and Communication 8

Management Plan..... 8

 Management of Ash on Community/Public Property 8

 1) Inventory..... 8

 2) Assessment 9

 3) Treatments and Removals 10

 4) Special Considerations 12

 5) Wood disposal/utilization..... 13

 6) Tree Replacement..... 13

 Management of Ash Trees on Private Property 13

Education Plan 14

Budget..... 14

Remove and Replace All Ash Trees..... 14

 Treatments..... 15

 Do Nothing 15

 An Integrated Plan 15

Contacts 16

Works Cited..... 17

Executive Summary

Emerald Ash Borer (EAB) has arrived in Onondaga County, the City of Syracuse, and the Towns of DeWitt and Manlius. This insect will eventually kill every ash tree not treated with a pesticide. The loss of all the ash trees in DeWitt will have significant ecological, recreational, economic, public safety, and quality of life implications. If nothing is done to manage ash trees on public lands these dead or dying ash trees have the potential to pose a significant threat to public safety.

The main goal of managing ash trees on public lands is to balance 1) public safety with 2) retention of some of the ecological and social benefits that the ash trees currently provide. This Management Plan has been developed to guide the Town's efforts to manage ash trees on Town owned property.

The presence of EAB was confirmed in DeWitt in July 2013. The Town immediately joined the County Task Force and began strategizing a plan. The Town owns roughly 430 acres of land including 18 parks/park properties (parks, facilities, cemeteries, green spaces) and is responsible for 124 miles of Town right-of-way (ROW). ROW is defined on page 7.

Through funding from a DEC grant, we anticipate hiring a professional firm to perform a complete and comprehensive street tree inventory by the summer of 2015. To date, the Town's inventory is neither complete nor comprehensive. In making effective management decisions accurate data such as species, locations, concentrations, size distributions, and health of the ash trees are crucial. This plan may change depending on the data from the inventory.

The management options available to the Town for dealing with EAB and ash trees on public lands are relatively straightforward and include: 1) preemptive removal prior to tree mortality, 2) protection and preservation of ash trees with pesticides, 3) planting of new non-host trees to replace the functions provided by those trees lost to EAB and/or, 4) do nothing in specific areas.

This plan recommends implementing a balance or a selective ash tree management strategy. The benefit of this balanced approach is that management of ash trees can be optimized at each location, preserving tree functions where they provide the greatest value, restoring lost canopy over time in other locations, and preemptively removing less valuable trees before they become a safety hazard. The Town's program features the following key elements:

- 1) Preemptive removal of approximately 50% of inventoried ash over a period of 5 years on Town rights-of-way (ROW) (approximately 50 trees based on current inventory);
- 2) Replacement of approximately 90% of removed trees, phased over 5 years, primarily in the Town's parks and ROW, with non-invasive, non-host tree species (approximately 200 trees);
- 3) Preservation of approximately 50% of inventoried ash trees. These will be carefully chosen, high value ash trees that provide significant amenities for up to 25 years (approximately 200 trees);
- 4) Do nothing with trees growing in unmanaged areas that have little to no likely potential of causing damage to public or private targets;

5) Develop a plan specific to Ryder Park—the Town’s signature park—for preservation, removal, and replacement of ash trees. This park contains between 200 and 500 ash trees of various sizes, health, and concentrations. The sudden loss of ash trees in Ryder Park will have a devastating impact on the ecology of the park as well as the recreational benefit the tree canopy provides. Ryder Park floods annually during heavy rain events due to the close proximity of Butternut Creek. Ash, willow, red maple, box elder, and cottonwood species grow relatively well in the heavy clay, riparian zone, and disturbed soils. Additionally, trees that can endure salt spray from the adjacent I-481 have shown a higher rate of survival than less tolerant trees. The abundance of ash trees draw up several thousand gallons of ground water each season as well as provide beneficial habitat to riparian and wetland species. A surge of new lighting will change the aesthesis and comfort of the park but may also create favorable conditions for invasive species to colonize.

Risk Assessment Rating	DBH Range (inches)	Number of trees
3	3 - 56	19
2	8-40	41
1	7-25	4
Size <6 AND >36	3-49	29
TBD	6-33	43
	Total	136

Cost Chart Based on Current Inventory:

Treatment costs, 1 st year of implementation (includes approximately 100 ash trees in Ryder Park)	\$	11,000.00
Recommended Total Removal Costs (over 5 years)	\$	27,100.00
Recommended Replacement Costs (over 5 years)	\$	19,200.00
Recommended Removal and Replacement Costs (over 5 years)	\$	46,300.00
Total Treatment (1 st year) & Total Removal and Replacement Costs	\$	57,320.00

An Inverse Relationship

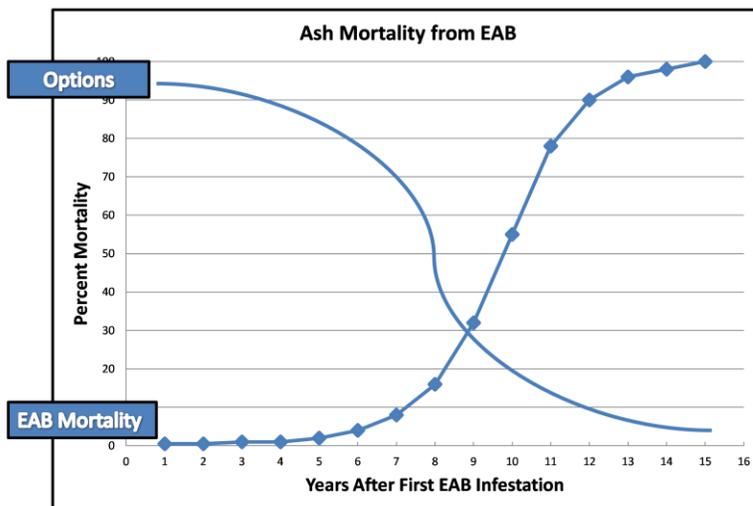


Figure 1: "Death Curve"; As EAB densities increase management options decrease. It is estimated that the current infestation is somewhere between years 5 and 7.

We expect these estimates to change after the results of the comprehensive street tree inventory are completed.

Purpose

The top six priorities of this plan are to:

- 1) Minimize the economic and social impact, disruption, and costs of EAB management. We will also improve the health, resilience, maintenance efficiency, and beauty of the urban (community) forest and street trees.
- 2) Identify potential ash hazard trees now.
- 3) Reduce the public safety hazard by reinforcing the urgency of infested/dead ash tree removal on private property by owners. Begin the removal or treatment process in public and ROW areas thus reducing the risk and liability.
- 4) Determine property ownership and the responsible party for trees impacting public property and/or Town streets and roads.
- 5) Explore opportunities for inter-municipal and inter-departmental cooperation to reduce duplication of efforts, reduce costs, and ensure effective and appropriate management techniques for ash trees on Town, County or ROW.
- 6) Outline an educational strategy for homeowners, tree service workers, and municipalities.

Desired Outcomes

- **Prevention:** Local governmental officials; community and business leaders; public utilities and private individuals are fully aware of the risks associated with and understand steps required to prevent human-assisted, long-distance transport of EAB and other pests.
- **Preparedness:** Local governmental officials; community and business; public utilities and private individuals are aware and have prepared for the potential detrimental effects of EAB and are able to respond to the infestation before it occurs.
- **Manage/Mitigate Impacts of EAB:** Local governmental officials; community and business; public utilities and private landowners and individuals have the tools and resources available, either directly, or through awareness of available contracted services, to respond to an EAB infestation.
- **Suppress EAB Populations:** Local governmental officials; community and business; and private landowners and individuals have options to reduce EAB populations or slow the EAB invasion process while densities are low.

- **Utilize Salvage Removed Wood:** Local governmental officials; community and business; and private landowners and individuals have options for marketing and utilizing uninfested salvaged or harvested ash trees, other than landfill/disposal.
- **Preserve Ecosystem Functions:** Local governmental officials; community and business; and private landowners and individuals are fully aware of the economic, social, and ecological benefits and services that healthy and productive forests provide. Long-term management of forests along the urban-rural gradient is focused on conserving and enhancing these functions with or without ash trees.
- **Replant and Reforest:** Local governmental officials; community and business; and private landowners and individuals are enabled and encouraged to replace trees that have been removed due to EAB infestation.

Key Messages

- EAB is the most destructive forest insect introduced into North America in recent history.
- Our present ability to detect, contain, eradicate, or manage EAB infestations is limited. The eventual loss of the vast majority of ash trees in DeWitt should be anticipated.
- EAB infestations are distributed across a much greater geographical region than originally hoped. Most of these infestations have been caused by people transporting infested ash wood (logs, firewood) from place to place.

Background Elements

EAB History

EAB is a destructive beetle believed to be accidentally introduced in ash wood used as shipping material from Asia. *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae), was first identified in July 2002 as the primary cause of rapid tree decline and mortality in portions of Michigan and Canada (Schneeberger, 2013). Experts estimate the beetle was first introduced in the mid 1990's. EAB is indigenous to northeastern China, the Korean peninsula, and eastern Russia, where it functions as a secondary colonizer of ash trees native to Asia that are stressed, declining, or dying. In North America it is currently present in Canada, 18 states, and twenty counties in NY including Onondaga (County, 2013).



Figure 2: Adult beetle shown with a US penny for size comparison.

EAB will kill all ash trees if left untreated within 2-4 years on average. EAB attacks all species of ash (*Fraxinus*) trees. In Onondaga County four different species are found: white ash (*Fraxinus americana*), green ash (*Fraxinus pennsylvanica*), black ash (*Fraxinus nigra*) and blue ash (*Fraxinus quadrangulata*) with white and green ash being the most predominant. The mountain ash (*Sorbus americana*) is not a true ash and is not attacked by EAB. A dead or declining ash tree infested with EAB poses significant

safety hazards to public and private properties, buildings, overhead infrastructure, highways, and park areas. The tree tends to break off unpredictably in large chunks or fail catastrophically and has been shown to fall soon after death (usually about 1- 2 years), especially during moderate winds.

EAB Biology

The female emerald ash borer beetle lays eggs in the crevices or under bark flaps on the trunk or branches of ash trees. After hatching, the larvae feed on the phloem tissue (living tissue) of the tree during its developmental cycle, just under the bark forming serpentine galleries. This feeding activity and aggregation of galleries essentially girdles the tree and typically kills it within 2 – 4 years. It is estimated that each female probably lays between 30-60 eggs in a lifespan. The larvae overwinter in the tree and begin to emerge through D-shaped exit holes as adults between late April or May to repeat the process with the next generation. (Schneeberger, 2013).



Figure 3: Heavily infested ash found in DeWitt. Trees were cut up and used for firewood.

At this time, only the use of appropriate, approved insecticidal treatments have been found to prevent and/or control the insect infestations on individual trees, while research continues on the possible use of biological controls such as predator insects and/or biological controls. No large scale treatment to control the insect on forested sites is yet available.

Scope of NY Problem (as of August 2014)

New York State has the highest density of ash in the country. Onondaga County forests are comprised of roughly 13% ash trees. Ash is a valuable hardwood species; uses include baseball bats, tool handles, firewood, and lumber. Black ash is used by Native Americans for basket weaving (Hills, 2010). Green ash and its many cultivars have been widely planted as street trees due to its exceptional site tolerances, form, and fall color (Leopold, 2005). The economic and environmental impact will be significant. White ash often occupies abandoned, marginal farmlands, developing almost contiguous stands of somewhat even aged trees.

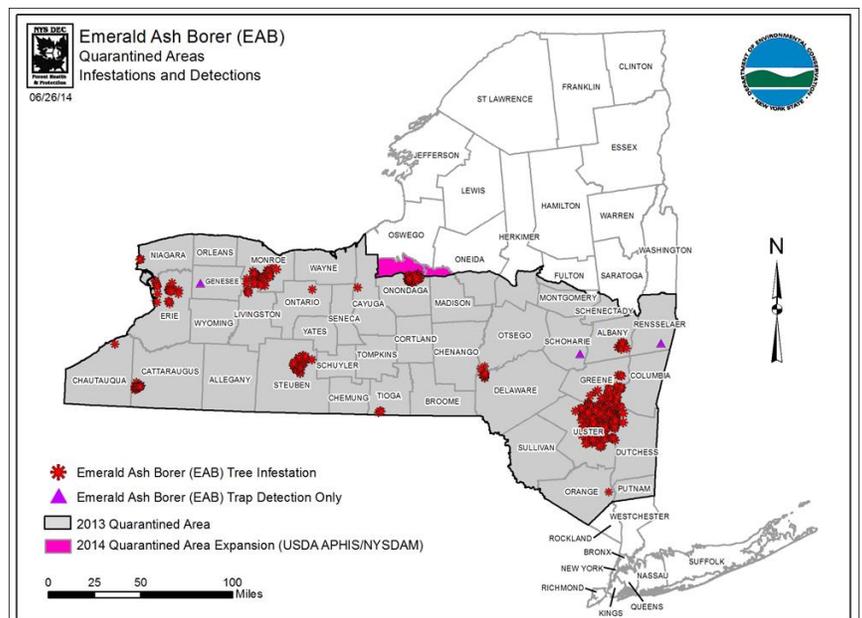


Figure 4: The grey area indicates the quarantine area as of 2013. The pink shows the new infestation and associated expansion area. A quarantine is a governmental imposed restriction of the transportation of infested wood.

Scope of DeWitt Problem

The US Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) confirmed the presence of EAB on a purple prism trap in the Town of DeWitt in late July 2013. Immediately following the confirmation, a team of experts and officials from Cornell Cooperative Extension, SUNY-ESF, Cornell University, NY DEC, City of Syracuse, and Town of DeWitt inspected trees deemed as “suspicious”. Areas off Court Street near Carrier Circle, wooded areas in Franklin Park (north of East Syracuse), areas in the Village of East Syracuse, and vicinities in the Meadowbrook area in the City of Syracuse were found to be heavily

infested. Since then, Townline Road—an eastern border with the Town of Manlius—was also found to be heavily infested requiring immediate removals.

Researchers from SUNY-ESF have been studying the trunks of two of the removed infested trees. One removal from Townline Road indicates a 2 year infestation. Through observations and samplings they have surmised that the heaviest infestations appear to be surrounding the previously infested trees. They also believe that the beetle has been in the area for longer than 2 years, possibly as many as 6 or 7 years.

Community Specific Information

It is estimated that 13% of Onondaga County forests are comprised of ash. DeWitt’s street tree inventory is not yet complete. Of the 1,833 total inventoried street trees 136 have been identified as ash trees and assessed for health. Some should be removed while others are good candidates for treatment.

Plan Oversight, Implementation, and Communication

The Town Naturalist will have the primary responsibility for oversight and implementation of the plan. The Tree Committee will provide input, review, and present the plan to the Town Board for approval. The Town Board has the responsibility of approving the plan prior to implementation. Residents living within known current infestations have been notified through door-to-door flyers. Several public forums have been held in various communities including East Syracuse to inform residents. Although a regular schedule is not anticipated, communication attempts will continue to occur through the website, press releases, media outlets and, the quarterly mailing of the Recreation Department’s Brochure.

Management Plan

Management of Ash on Community/Public Property

1) Inventory

The Town of DeWitt is responsible for all publicly owned trees in Town Parks, lots, and on the ROW. This includes street trees and Town campus trees. Chapter 175 of the Town of DeWitt codes defines a Street



Figure 5: DeWitt in relation to the surrounding Towns and the City of Syracuse. The Village of East Syracuse is located on the western edge of DeWitt and Syracuse’s east side.

Tree as a tree planted within the right-of way (ROW) between the pavement edge and the right-of-way boundary (or property line). A ROW is defined as the area within the designated right-of-way line(s) of a highway, street, road or lane within the Town. Said right- of- way lines are delineated and /or defined by applicable Town, state or county law, rule or ordinance ("ROW"). The ROW distance varies between roads, however, based on recommendations from the Highway Superintendent and for the purposes of maintaining safety and clear roadways, the Town will assume responsibility for all trees 30’ from the center of the road.

White ash is site sensitive and prefers rich, moist, well-drained soils. It has an average life span of approximately 100 years or less. Black and green ash trees are naturally found primarily in wetlands. Green ash has been widely planted as a street tree and is very tolerant of urban stresses, harsh sites, and environmental conditions. It has an average life span of around 100 years. As a result, many ash trees are growing in parks and undeveloped lots. Black ash has a significantly longer life span of 200 to 300 years.

Currently, we have identified 136 ash trees growing in Town ROW’s. All have the potential of causing damage to public or private property and overhead utilities if they fail. Parks and open spaces have not been inventoried, however it is anticipated that a complete street tree inventory will be completed by early 2015 that will also include all Town campus trees. Ash growing within 100 feet of trails or other public targets must be included for management under this plan. The ‘domino effect’ of falling dead ash trees may have an impact on access roads or trails a considerable distance from the causal tree. Trees growing in unmanaged areas that have little to no likely potential of causing damage to public or private targets will not be assessed.

2) Assessment

Ash trees will be managed following some of the guidelines established by Onondaga County. However, DeWitt will evaluate ash using criteria that is specific to DeWitt’s interest. Ash trees will be assigned a Risk Assessment Rating (RAR). Only ash trees that are growing in moderately populated (frequented) areas that will likely cause damage to public or private targets if failure occurs—regardless of the presence of an EAB infestation—will receive a RAR.

	Risk Assessment Rating	DBH Range (inches)	Number of trees
Risk Assessment 3=Trees that are targeted for removal	3	3 - 56	19
	2	8-40	41
Risk Assessment 2=Trees that are moderately healthy	1	7-25	4
	Size <6 AND >36	3-49	29
Risk Assessment 1=Trees that are currently healthy	TBD	6-33	43
		Total	136

Risk Assessment is determined by the condition of the tree, location, conflicts, and size. The stem (1) and canopy (2) are evaluated and rated separately by level of decay, damage, or structural defects.

A=<5% dead branches or decay-small amount of decay, No structural issues

B=6% - 39% dead branches or decay- moderate amount of decay, some decay or structural defects

C=over 40% dead branches or decay-large amount of decay or growing under a utility line requiring cyclic line clearance pruning.

In addition to percent decay or dead branches, if an ash possesses the following characteristics, it will be marked for removal and not treated:

1. Any ash that is less than a 7" DBH;
2. When adjacent, non-host trees provide nearly comparable function(s) and the loss of the ash will not have a significant ecological impact;
3. Trees exhibiting excessive lean;
4. Trees exhibiting storm damage and/or that are structurally unsound;
5. Trees with power line conflicts;
6. Trees that have been excessively/improperly pruned;
7. Trees with roots that threaten nearby infrastructure or other assets (sidewalks);

Trees with a DBH of 36" or greater will be evaluated more intensely due to the assumed age of the tree, potentially higher risks that exist and/or benefits that are provided.

Ash trees that receive a condition designation of 1A or 2A will receive a RAR of 1. Ash trees that receive a condition designation of 1B or 2B will receive a RAR of 2. All ash receiving a RAR of 1 or 2 will be candidates for injection with the insecticide Tree-Age (emamectin benzoate).

Trees receiving a condition designation of 1C or 2C will be assigned a RAR of 3 and be targeted for immediate removal.

3) Treatments and Removals

Treatments began in the spring of 2014 by Municipal Agreement with Onondaga Soil and Water Conservation District (OCSWD). Eventually treatments may be performed by Town staff, once proper certifications and licenses are obtained.

Several options were open to the Town but based on efficacy with increased pest pressure, emamectin benzoate--Tree-Age, was chosen to be the treatment option. The following chart outlines the various choices.

	Active Ingredient	Product Names	Treatment Frequency	Application Method	Pros/Cons
Professional Application	emamectin benzoate	Tree-Age	Every 2-3 years	Trunk injection	Tree-Age is the most popular treatment and most effective. More costly than homeowner application.
	Imidacloprid	Merit	1-2 times per year	Trunk injection	
		Xytect Ima-jet Imicide		Soil injection Soil drench Soil drench	
	Azadirachtin	TreeAzin	Once per year	Trunk injection	
Homeowner Application	Imadacloprid	Bayer Advanced Tree & Shrub	Once per year	Soil drench	Less expensive than a professional application, but not effective with increased pest pressure.

Removal of street trees on Town ROW will typically be performed by contractor. Park take downs will be performed by Town staff. Onondaga County and the State of New York will have the responsibility of managing ash trees on their respective ROW. Removed trees on the Town ROW will likely be replaced with a suitable species appropriate to infrastructure and space limitations while maximizing species diversity. Removals began over the winter of 2013 during non-flight season.

Priorities for Treatments

Street trees with a Risk Assessment of 1 will be treated first followed by trees with a Risk Assessment of 2. Treatment of the Springfield Garden’s Apartment complex street trees will occur the first year.

Parks trees will be inventoried and assessed:

- A) Ryder Park- First priority, Accessible trees and trees growing within 60’ of the managed area will be assessed and assigned a Risk Assessment. Trees with a Risk Assessment of 3 will be removed immediately.
- B) Tow Path-Will follow the criteria for Ryder Park.
- C) Cedar Bay- Will follow the criteria for Ryder Park.
- D) Fiddler’s Green-Will follow the criteria for Ryder Park.
- E) Butternut Creek Trail-Trees will be assessed. Only specimen quality ash trees will be considered for treatment. Trees that pose a threat to the trail or visitors will be felled and left on site.
- F) Maxwell Park-Will follow the criteria for Butternut Creek Trail.

Regulatory Requirements/Considerations

Several aspects of ash tree management are subject to State and Federal regulations, which will generally fall under the jurisdictions of three agencies:

- A) New York State Department of Environmental Conservation (DEC): Regulates the use of pesticides with respect to applicator certification and pesticide use notification. The DEC also regulates the movement of ash firewood and protecting “endangered species” (in Onondaga County this would include roosting sites for the Indiana bat and the proposed northern long-eared bat).
- B) New York state Department of Agriculture and Markets: Responsible for regulating the movement of EAB infested ash wood in all forms (logs, branches, mulch, etc.) and requires those involved in the movement of infested ash wood to enter in a Quarantine Infested Materials Compliance Agreement in an effort to slow the spread of EAB.
- C) U.S. Fish and Wildlife Service: Responsible for administering the Federal Endangered Species Act—similar to the DEC role—involving the presence of roosting sites for the Indiana bat and the proposed northern long-eared bat and the requirements to limit impacts to these two species.

Visible Notification

Notifications will follow regulations of Article 33 of the NYS Department of Environmental Conservation Law. Pesticide application signage will be placed on day of treatment at least 12” above the ground.

Street Trees: Individual street trees will be clearly marked with visible pesticide application signage. In addition, residents will be mailed a notice. Park Trees: For trees in groups, a perimeter will be established. For single trees, each individual tree will be marked with pesticide application signage.

4) Special Considerations

Trees on Onondaga County roads and NY State highways will be the responsibility of the governing agency to manage. The County currently plans to remove all ash trees growing in ROWs beginning with Level 3. They will inform the Town of DeWitt prior to any removals.

However, in unique situations where the tree is highly valued due to location, quality, or form the Town of DeWitt may enter into an Inter-municipal Agreement with the governing agency allowing pesticide treatment at Town of DeWitt expense. Only Level 1 or Level 2 trees would be considered for treatment.

Treatments will continue in perpetuity or until pest pressure diminishes significantly (possibly 10-15 years or more with retreatments every 3 years). Efforts will be made to preserve specimens on public property of superior quality and form. Additionally, every attempt will be made to preserve and conserve the trees growing in Springfield Garden Apartment complex—Section 8 housing—until another tree canopy matures. Ash is the dominant tree species in this complex and the only tree providing shade and a wind break. To protect the quality of life to the residents we will consider this complex a priority. This is an environmental justice concern.

We recognize that the street tree inventory is not complete and that some non-ash trees may have been inadvertently included. Many misidentifications have already been corrected. Any additional misidentifications will be corrected during the upcoming street tree inventory.

5) Wood disposal/utilization

All removed ash trees will be assumed to be infested with EAB. Due to the quarantine restrictions, options for transportation and utilization are limited.

Trees that are known to be infested with EAB can only be transported between October 1st and May 1st of the following year. Any planned removals and transporting of street trees will occur between these dates. Park trees can be felled anytime and kept on site until October 1st. To minimize the expense of tipping fees, Clifton Recycling or Onondaga County Resource Recovery Agency (OCRRA)—both approved disposal/processing facilities—will be the receivers of infested material from the Town of DeWitt. There are no plans for the Town of DeWitt to store materials on site.

The contractor and Town personnel will be transporting material. Currently, all woody debris and brush are transported to an approved disposal/processing facility. Options to utilize non-infested material are being explored. Utilizing wood from ash trees is particularly difficult due to the advanced state of the infestation in the local area.

6) Tree Replacement

The Town of DeWitt is committed to improving the Urban Forest. The Town Naturalist oversees the tree planting efforts and works in conjunction with the Tree Committee to improve the urban tree forest. Every effort will be made to ensure that new plantings follow the 5-10-20 rule, meaning our ideal planted forest will consist of no more than 5% of one species, 10% of any one genus, and 20% of any one family. No new ash will be planted by the Town.

Park Hill and Franklin Park are two key neighborhoods targeted for aggressive replanting with funds through a Save the Rain Grant from Onondaga County. Residents outside these areas can also request free street trees through a recently adopted Street Tree Program. The Tree Committee coordinates ordering and planting the trees under this program. Grants and municipal sources fund this program.

Management of Ash Trees on Private Property

EAB is confirmed in several communities within the Town. The Town recognizes that many ash trees are on private property and it may be a costly for property owners. The Town encourages property owners to monitor their own ash trees and seek reliable information in regards to EAB biology and management options. In addition, the Tree Committee and the Planning and Zoning Department have plans to update the current Tree Ordinance to possibly include provisions for diseased and infested trees on private property that could potentially cause property damage or personal injury to adjacent properties.

The Town has established a webpage focused on EAB with additional links to external sources. The Town hosted a public forum on EAB in conjunction with Cornell Cooperative Extension (CCE Onondaga) in the East Syracuse Community Room attached to East Syracuse Fire Station #2. This location was chosen because it is located in the epicenter of the infestation. More forums will be planned in the upcoming

year. Management of infested private ash is at the discretion of the property owner, however the Town encourages the removal or professional injections of high risk trees before they become a hazard.

Any removal or treatment costs of controlling EAB are at the discretion and expense of the landowner and the success of insecticides are not guaranteed. Removals should be carried out by reputable, experienced, and qualified ISA Certified Arborists who are properly insured, bonded, and complete the work by written agreements and contracts.

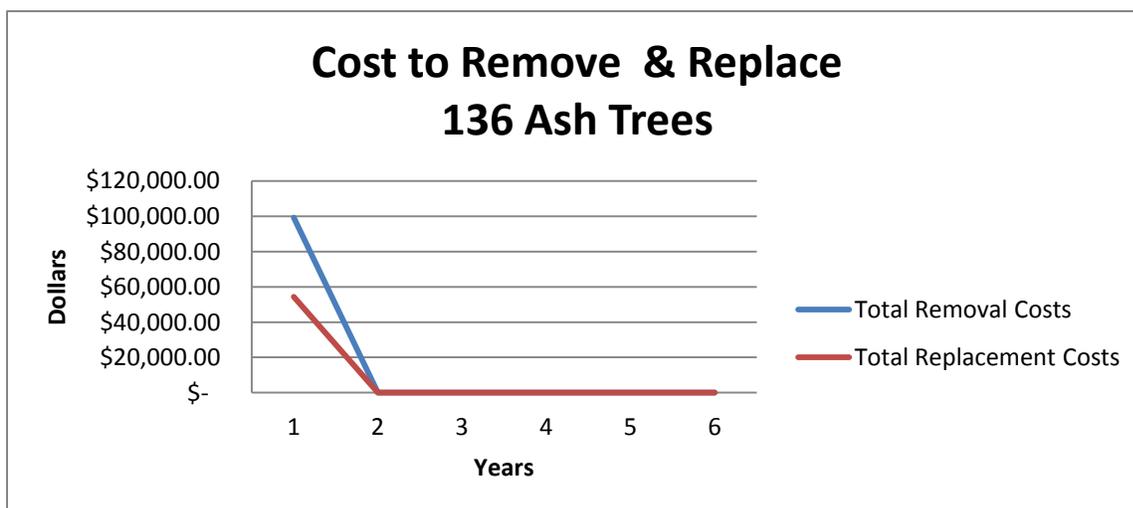
Education Plan

The Town established a webpage under the Town website dedicated to Nuisance and Invasive Species. EAB has its own tab. Information covered includes: ash tree identification, EAB biology, symptoms of ash infestation, potential safety impacts, control methods, tips for homeowners, Don't Move Firewood campaign information, replanting options, along with other important information. We are working with Cornell Cooperative Extension Service of Onondaga County attending regular EAB Task Force Meetings and we will host forums and workshops to further educate property owners.

Budget

Remove and Replace All Ash Trees

Estimated removal costs were calculated using the bid sheet from the current tree removal and trimming contract. We estimated the approximate time to remove a tree based on the recorded diameter then multiplied that by the unit price. The first year of implementation roughly 30 ash trees were removed for an approximate cost of \$11,000.00. It is anticipated that each subsequent year roughly 30 ash trees will be removed until only the specimen ash trees and ecologically significant ash are remaining for an anticipated yearly cost of approximately \$11,000.00. The cost to remove all the ash at one time is roughly \$100,000 and the associated replacement costs are roughly \$55,000, for a combined total of \$155,000.



Total Removal Costs	\$99,300.00
Total Replacement Costs	\$54,400.00
Total Removal and Replacement Costs	\$153,700.00

Treatments

Estimated treatment costs were calculated using the quotation for services from Onondaga County Soil and Water District. We selected the ash with Risk Assessments of 1 and 2 and multiplied the total DBH by the cost per caliper inch. Treatments need to be repeated every 2 to 3 years.

We anticipate the cost to treat the publicly owned ash trees in ROWs the first year of implantation to be approximately \$2,500.00. This number does not include parks and green spaces. Ryder Park, the Town’s signature park has a significant number of ash trees. These trees have a high number of targets in the drop zone. The cost to treat Ryder Park is approximately \$7,000. We estimate that there will be a yearly cost of \$1,500.00 as new ash trees are identified in the complete street tree inventory.

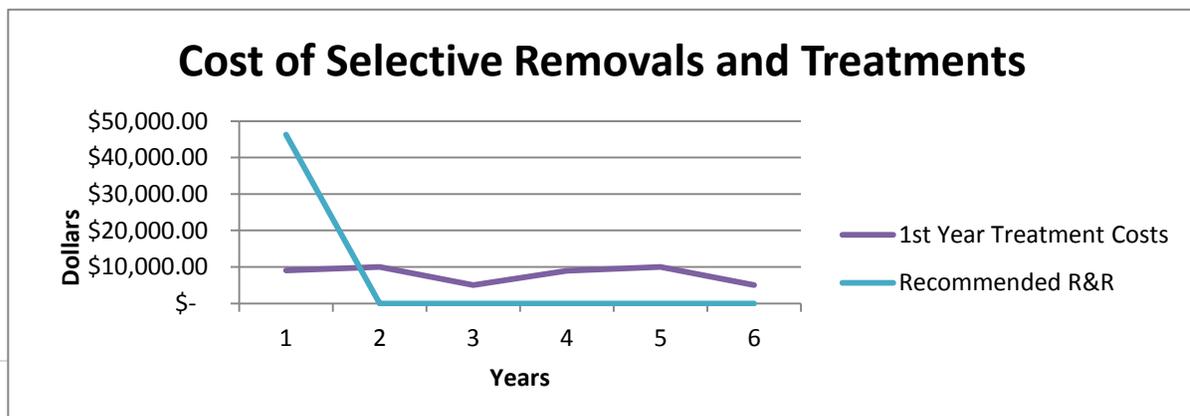
Do Nothing

The cost to do nothing will yield an appealing upfront cost, but have financially devastating results during periods of moderate to heavy winds, rain, and snowfall. Based on the recent history from the Midwest, untreated ash trees become extremely unstable and fall causing property damage, utility damage, and personal injury under very light winds.

An Integrated Plan

This plan recommends combining the management options. In unmanaged areas over 60’ from any utility line, park, trail, home, or road it is prudent to do nothing. These trees will fall and decompose naturally providing food, nutrients, and homes for a variety of life forms. Ash trees in ROW and parks will be selectively treated, selectively removed and managed based on location, aesthetics, ecological value, and costs.

1st Year Actual Treatment Costs	\$	11,000.00
Recommended Total Removal Costs	\$	27,100.00
Recommended Replacement Costs	\$	19,200.00
Recommended Removal and Replacement Costs	\$	46,300.00
Total Treatment, Removal, and Replacement Costs	\$	57,320.00



Contacts

Town of DeWitt	Naturalist	Christine Manchester	315-446-9250 ext 137
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Cornell Cooperative Extension, Onondaga		Kristina Ferrare	(315) 424-9485 x 231
City of Syracuse/Onondaga County	Arborist	Steve Harris	(315) 473-4330 x3014
Onondaga County of the Environment		David Coburn	DavidCoburn@ongov.net
Onondaga County Soil and Water Conservation District	Executive Director	Mark Burger	(315) 457-0325
NYS Ag and Markets	Horticulture Inspector	Bill Ellsworth	(585) 303-3741
NY DEC	Forest Health Field Crew Supervisor	Maria Moskalenko	518-491-7260
Cornell University	Department of Natural Resources	Mark Whitmore	(607) 280-4064 Email: mcw42@cornell.edu
SUNY ESF	Associate Professor; Ph.D. Entomology	Melissa Fierke	Phone: (315) 470-6809/470-6743 Email: mkfierke@esf.edu

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Management and Pesticide Options:

http://nyis.info/insects/EAB_EducationalResources.aspx

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Don't Move Firewood Campaign: <http://www.dontmovefirewood.org>

Presentations and notes from the USDA Forest Service, Forest Health and Protections 2009 "Coping with the Costs, The Economic, Social and Environmental Impacts of Invasive Insects on Communities" conference can be found at <http://na.fs.fed.us/fhp/hottopics/copingwcosts.shtm>

"Emerald Ash Borer Invasion of North America: History, Biology, Ecology, Impacts, and Management" by Daniel A. Herms and Deborah G. McCullough

EAB and Firewood hotline at 1-866-640-0652