

City of Rutland
EAB Strategy – Revised 03-18-19

Background

The public has been made aware of the presence of the invasive insect, the Emerald Ash Borer (EAB), in Vermont. This has been anticipated since 2008 and the time has come for the City to adopt a strategy to address the threat.¹ Since 2008 no new Ash trees have been planted on City property and treatment of damaged or ailing trees has been limited to removal.



The insect will kill 99 percent of all species of Ash trees within 5 years of infestation. The two photos are of the same street in Toledo, OH, 3 years apart. Based upon the spread of the infestation thus far, there is zero chance that Rutland will be spared. The insect will arrive, and it will kill every Ash tree in the City. Indeed, there is a very high probability that EAB is already here, damaging apparently healthy trees.

Options

Do nothing until they die and deal with it then – It is not prudent to wait for the trees to die before acting. First, any dead tree in the urban forest is a safety hazard and dead Ash trees tend to be brittle and drop limbs easily. Second, urban trees cannot be “felled” due

¹ For more information on the EAB please go to the Vermont Invasives web page:
<https://vtinvasives.org/land/emerald-ash-borer-vermont>

to the risk of damage to adjacent public and private property so they must be taken down limb by limb, which is time consuming and costly. Most live trees can be climbed and removed without the need for cranes or other expensive equipment, but dead trees are unsafe to climb. Therefore it is twice as expensive to remove a dead tree as a live one.

Chemically treat healthy trees – Several pesticide treatments are available. These are administered by injecting the pesticide into the ground to be taken up by the roots or into the living tree tissue just beneath the bark. Toxins are taken up into the tree and reside within the leaves and living tissues beneath the bark, apparently without ill effects on the tree. When insects feed on these parts of the tree they ingest the toxin and die. The pesticide is most effective against the adult beetle as it feeds on the leaves, and less so on the larva beneath the bark. Chemical treatment can be effective but requires biennial treatments at a typical cost of \$100-\$200 per tree per treatment if applied by a licensed contractor. If a Rutland City employee is licensed to apply the pesticide the cost would be roughly cut in half. Treatments would be required for up to a decade (5 treatments) and possibly longer. Privately owned Ash trees in the City would not be universally treated meaning the infestation would still happen here and the EAB insect would be present until all untreated Ash trees are dead, and possibly longer.

Remove and replace Ash trees while still alive as a preventative measure – Treating or removing trees before they die are generally the most cost effective ways to address the infestation, especially if the City Forester and Assistant City Forester perform the treatment and some of the removals. Contractors will be retained for any removals requiring a crane or those directly involved with overhead utilities. Removal must begin immediately as it will take about 2 years for City staff to handle their portion. Furthermore, replanting locations where trees have been removed could begin in the near future, providing a jump-start to the growth of replacement trees. Replacement trees will be of mixed species to further diversify the urban forest and make it more resilient in the face of future invasive attacks. By example, there were 1,600 American Elm trees in Rutland's urban forest in the early 1950's, prior to the arrival of Dutch Elm disease. Today there are 3. Ash trees were a preferred replacement and most that are now threatened were planted in response to the loss of the Elms. But the City learned from that experience and decided to replace the Elms with a variety of species. As a result the overall impact of the loss of Ash trees will be far less dramatic than was the loss of the Elms.

Recommendation

The Department believes the best strategy is to license a qualified staff member for pesticide application and treat some trees with pesticide and remove the remaining trees while still alive, replacing them with a variety of site-appropriate species soon thereafter. Application of pesticides on the ground is not recommended given the proximity to the general public and pets. Pesticide application should be limited to direct injection into the tree tissues. To determine which trees will be treated and which will be removed, a survey of all Ash trees in the inventory will be made using evaluative criteria and a point scoring system. Treatment would then be recommended for the specimens with the highest scores and removal for the remainder. The assessment should also determine

whether a removal can be performed by City staff or whether a contractor will be required.

This recommendation is not made lightly, as all of these trees were planted by the City Forester or his predecessor and they have been maintained by DPW staff ever since. No one is more upset at the loss of these trees than the people who have nurtured them for the last six decades. But if past invasive waves have taught us anything it is that the best response is to work with nature rather than fight it. That is why we are removing Red Pine plantations from the City Forest and allowing the natural understory to grow up in their place.

Approach

The survey was conducted in the fall of 2018. The evaluative criteria used considered the tree location, the condition of the stem and the condition of the crown. The following is a complete list of the criteria used:

Site

- Power lines/utility lines (three-phase service wires, telephone and cable)
- Greenspace size
- Heaving sidewalks
- Sewer/stormwater lines
- Water mains and services
- “Volunteer trees” qualify for automatic removal in hedge rows with other significant canopy

Stem

- Stem defects (plow damage, cankers, decay, crotches with included bark, seams and splits)
- Root defects (girdling roots, highly compacted roots, significant abrasion, etc.)
- Significant lean
- Presence of hardware (brace rods, etc.)

Crown

- Significant dieback in crown (20% or more)
- Crown asymmetry
- Poor structure (crotches with included bark, seams, splits, decay, cankers)
- Presence of support cables

This survey resulted in the decision to remove 199 trees with the City crew, treat 100 trees using City staff, remove 144 trees through contractors, and replace nearly all of the removed trees with a variety of species.

Tree removals have already begun in 2018 in areas where the impact on residential streetscapes is minimal. During the winter of 2018-2019 the Forester and Assistant Forester removed trees in the residential areas using the following process:

1. Trees to be removed were identified and marked at least one week before scheduled removal;

2. Door hangers were placed on adjacent residences explaining why the tree or trees were scheduled for removal;
3. Residents were offered the opportunity to prefer a species of the replacement tree from a short list of options; if no preference was stated or if the preferred species was not available the City Forester chose the replacement;
4. Identified trees were removed by DPW staff by climbing and limbing;
5. Branches were chipped while stems and large limbs were cut to log-length;
6. Logs were picked up and transported to the City Reservoir property using a log trailer;
7. Stumps will be ground either by contractors or City staff using a stump grinder to be purchased;
8. The removal area will be restored with topsoil and seed by DPW personnel;
9. Within two years a replacement tree will be planted in a location near the site of the removal; replacement trees to be purchased by the City using budgeted funds and/or fundraising donations; Planting will be prepared by DPW staff and planted by DPW or volunteers.

The remaining trees to be removed are broken down into the following size categories, with the estimated cost of removal by contractors shown:

Size Category	Number of Trees	Cost
Trees 12 to 17.9 inches (remove)	80	\$35,424
Trees 18 to 23.9 inches (remove)	57	\$39,058
Trees 24 to 30 inches (remove)	7	\$6,853

The total estimated cost to remove and treat these trees is \$81,335, not including stump grinding and replacement. If the City purchases a stump grinder that work will be done by DPW staff, as will site restoration. It is anticipated that the contracted removal could be completed over a three year period.

Replacement trees could be financed and planted by a combination of City funding and staff, fundraising, and volunteer labor.

Disposition of Trees

The department cannot assume responsibility for the ultimate use of the logs as we do not have the resources to manage such a program. We will offer to leave useable logs if the owner of the adjoining residence wishes to use them for firewood or other on-site application, but we will only place the logs on the property; we will not cut them into fireplace lengths or transport them to another location if requested by the homeowner.

We are reaching out to other agencies, such as the Vermont Department of Forests and Parks, which have offered firewood from their operations for individual use. In the event something like this can be arranged we prefer to store the logs at the partner agency's location. Absent that opportunity we will store the logs at the reservoir property but the general public will not be allowed access there.

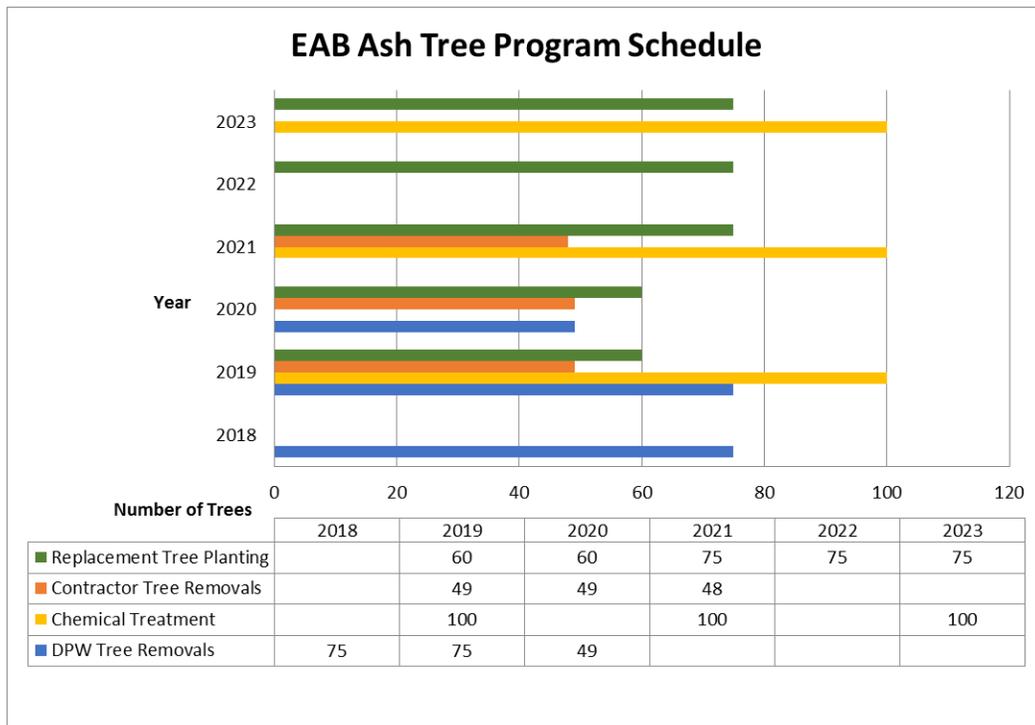


PHOTO BY JOH KUCKENS

Tim Smith of Orwell, who works as a forester for Rutland City, trains on positioning and advanced climbing techniques Tuesday in Hubbard Park in Montpelier. The training of municipal workers was funded by Vermont Urban and Community Forestry and provided by North American Training Solutions.

Schedule

The following table shows a possible schedule for the program. This schedule assumes volunteers do the majority of planting in 2019 and 2020 and possibly thereafter.



Budget

Based upon the estimated costs and the proposed schedule the following table shows the expected budget impact through 2023. The budget assumes \$10,000 per year can be raised to help fund replacement trees. The stump grinder is a general fund capital expense because its main function will be to support the management of the urban forest. The log trailer is planned to be paid for by the water fund since it will mostly be used for watershed maintenance and can also be used by the Water Distribution Division to carry pipe to projects in the City.

EAB Ash Tree Program Budget

	2018	2019	2020	2021	2022	2023
BALANCE CARRY FORWARD	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
REVENUES						
DPW GF Appropriation	\$ 2,000	\$ 44,227	\$ 71,027	\$ 47,902	\$ 13,589	\$ 21,089
DPW Water Fund	\$ 26,000					
Fundraising	\$ -	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Total Revenues	\$ 28,000	\$ 54,227	\$ 81,027	\$ 57,902	\$ 23,589	\$ 31,089
EXPENSES						
DPW Removal						
Labor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stump Grinder	\$ 2,000		\$ 36,000			
Log Trailer	\$ 26,000					
Contractor Removal		\$ 27,112	\$ 27,112	\$ 27,112		
Chemical Treatment		\$ 9,200		\$ 7,500		\$ 7,500
Replacement Trees		\$ 17,915	\$ 17,915	\$ 23,290	\$ 23,589	\$ 23,589
Total Expenses	\$ 28,000	\$ 54,227	\$ 81,027	\$ 57,902	\$ 23,589	\$ 31,089