

City of Rutland EAB Strategy

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.

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

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 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. 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 annual or biennial treatments at a typical cost of \$100-\$200 per tree per treatment. This would cost about \$20,000 to \$40,000 per year. The total annual non-payroll budget for the City Forester is \$40,000 per year. 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. The chemical injected into the soil is a toxin. Experience with other chemicals released into the environment has taught us that we often do not understand the long term effects on non-target plants and animals until years or decades have passed. One looming question about the treatment of Ash trees is the effect on beneficial insects such as pollinators.

Remove and replace Ash trees while still alive as a preventative measure – Removing trees before they die is generally the most cost effective way to address the infestation, especially if the City Forester and Assistant City Forester perform some of the removals. To do this, removal must begin immediately as it will take about 3 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 remove Ash trees while still alive and replace them soon thereafter. 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. The Department will continue to research the use of chemical treatment and under limited circumstances may also support the use of this technology (See Legacy Trees, below).

Approach

Tree removals have already begun in areas where the impact on residential streetscapes is minimal. Soon the Forester and Assistant Forester will begin removing trees under 12 inches diameter (chest-height) in the residential areas. There were 199 of these trees in the inventory at the time removals began. We anticipate the following process:

1. Trees will be identified and marked at least one week before scheduled removal;
2. Door hangers will be placed on adjacent residences explaining why the tree or trees are scheduled for removal;
3. Residents will be offered the opportunity to prefer a species of the replacement tree from a short list of options; if no preference is stated or if the preferred species is not available the City Forester will choose the replacement;
4. Identified trees will be removed by DPW staff by climbing and limbing, however the RFD bucket truck will also be available if needed;
5. Branches will be chipped while stems and large limbs will be cut to log-length;
6. Logs will be picked up and transported to the City Reservoir property using a log trailer to be purchased (see budget, below);
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 a year 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 fit into the following size categories, with the estimated cost of removal by contractors shown:

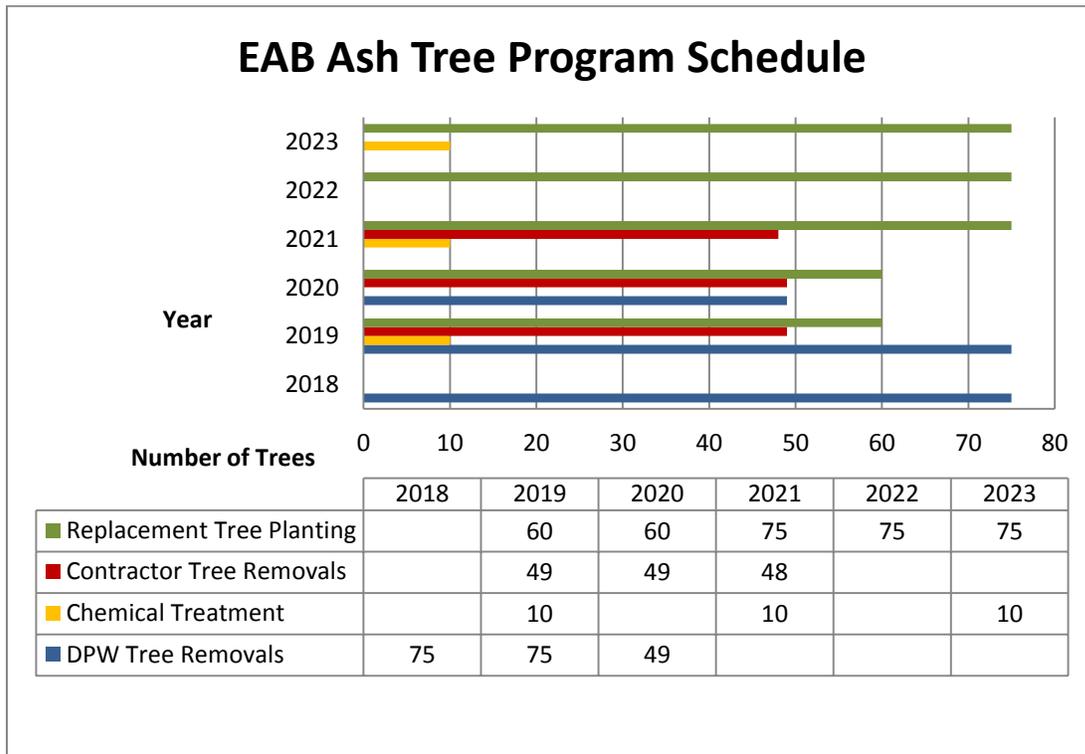
Size Category	Number of Trees	Cost
Trees 12 to 17.9 inches (remove)	82	\$35,424
Trees 18 to 23.9 inches (remove)	57	\$39,058
Trees 24 to 30 inches (remove)	7	\$6,853
Trees 24 to 30 inches (treat)	10	\$7,500 ²

The total estimated cost to remove and treat these trees is \$88,835, 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.

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.



² This is the cost to treat these trees through 2023. Costs will most likely continue at least through 2028 for a total of \$10,000.

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	\$ 72,527	\$ 35,027	\$ 41,902	\$ 13,589	\$ 15,089
DPW Water Fund	\$ 26,000					
Fundraising	\$ -	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Total Revenues	\$ 28,000	\$ 82,527	\$ 45,027	\$ 51,902	\$ 23,589	\$ 25,089
EXPENSES						
DPW Removal						
Labor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stump Grinder	\$ 2,000 ³	\$ 36,000 ⁴				
Log Trailer	\$ 26,000					
Contractor Removal		\$ 27,112	\$ 27,112	\$ 27,112		
Chemical Treatment		\$ 1,500		\$ 1,500		\$ 1,500
Replacement Trees		\$ 17,915	\$ 17,915	\$ 23,290	\$ 23,589	\$ 23,589
Total Expenses	\$ 28,000	\$ 82,527	\$ 45,027	\$ 51,902	\$ 23,589	\$ 25,089

Legacy Trees

While the City does not recommend wholesale attempts to save the trees through chemical treatment we believe there may be a value in identifying two or three excellent examples, perhaps in City parks, that should be treated for the purpose of attempting to preserve them as examples of the species for future generations. Chemical treatment of some of the trees that are planned for contractor removal might also be considered, especially those that are particularly large, healthy specimens that would be expensive to remove. The budget and schedule assume all street trees would be removed, but if chemical treatment is determined to have low environmental risk and is comparable in

³ Rental

⁴ Purchase

cost to removal the Department would consider treatment as an option. There are 17 trees between 24 and 30 inches in diameter and it within this group that chemical treatment may be a preferred alternative.

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.