

# **Emerald Ash Borer Advisory Plan**

## **Introduction**

The emerald ash borer (EAB) has been discovered in multiple counties in Vermont. EAB is an invasive beetle whose larvae feeds upon the inner bark of ash trees. In doing so, the ash tree is unable to transport water and nutrients, eventually resulting in the death of the tree. EAB is responsible for killing hundreds of millions of ash trees across the U.S. – the dead trees pose a public safety threat in populated areas, in addition to costing homeowners and municipalities for their treatment, removal, or replacement.

It is assumed that Chittenden County will be impacted by EAB in the near future, and Milton is considered to be within the infestation zone due to the discovery of EAB in South Hero. It is likely that EAB is already present in the community. The EAB, once found in a community, is expected to cause rapid ash decline over a short time period.



An adult emerald ash borer. Source: UVM Extension, VT Invasives

## **EAB and Ash Tree Management**

There are three options for responding to managing the impact EAB will have upon Milton's ash trees:

### **1. Respond as needed**

With this approach to EAB's impact upon ash trees, the Town would remove ash trees on its property as ash trees have died from EAB. This is a reactive approach that increases the town's liability risk due to the potential for property damage and injury. It is the experience of other municipalities around the country that once ash trees are infected by EAB, the ash trees across the municipality decline quickly. This creates a large scale of required removals, resulting in a significant burden upon municipal resources within a short time period.

### **2. Removal/replacement**

As ash trees are infected by EAB, their condition rapidly degrades, necessitating their removal in areas where the tree could pose a public safety threat. It is advantageous to remove larger trees before they start to degrade substantially, as trees in poor condition require more caution and skill to remove which increases cost. Proactive removal allows for the spreading of costs over time and prioritization of trees that pose the most risk to public safety. Removals can be completed by the Town's Public Works Department, Tree Warden, or a local tree care company when necessary.

Trees can be replaced as ash trees are removed. It is crucial to avoid planting a monoculture, as well as planting local, native species that are appropriate for the site conditions. Replacement will have a greater aesthetic impact in areas that have less dense tree coverage, such as residential streets and landscaped areas of parks.

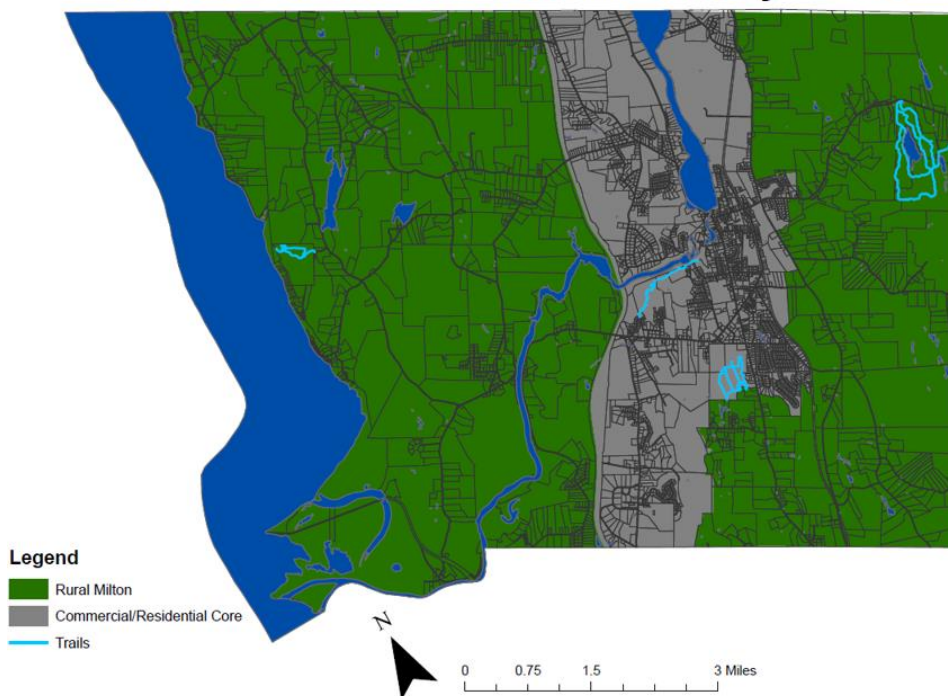
### 3. Treatment

With current treatment methods, a pesticide is applied to the ash tree every two years. This will likely have to be applied to the tree for the remainder of its lifetime to ensure that it does not become infested with EAB. The town's tree warden or other certified arborist can identify trees that would be suitable for treatment, in addition to its application.

### Inventory Results

The inventory of Milton's ash trees was conducted over 101 miles of town-owned roads and 11 miles of the town's trails at Eagle Mountain Natural Area, Lamoille Riverwalk, Bombardier Park, and the Town Forest. Because this inventory focused on Town property, State Route 7 was not inventoried, as these trees are within the Vermont Agency of Transportation's right-of-way.

### Milton Public Ash Tree Inventory Areas

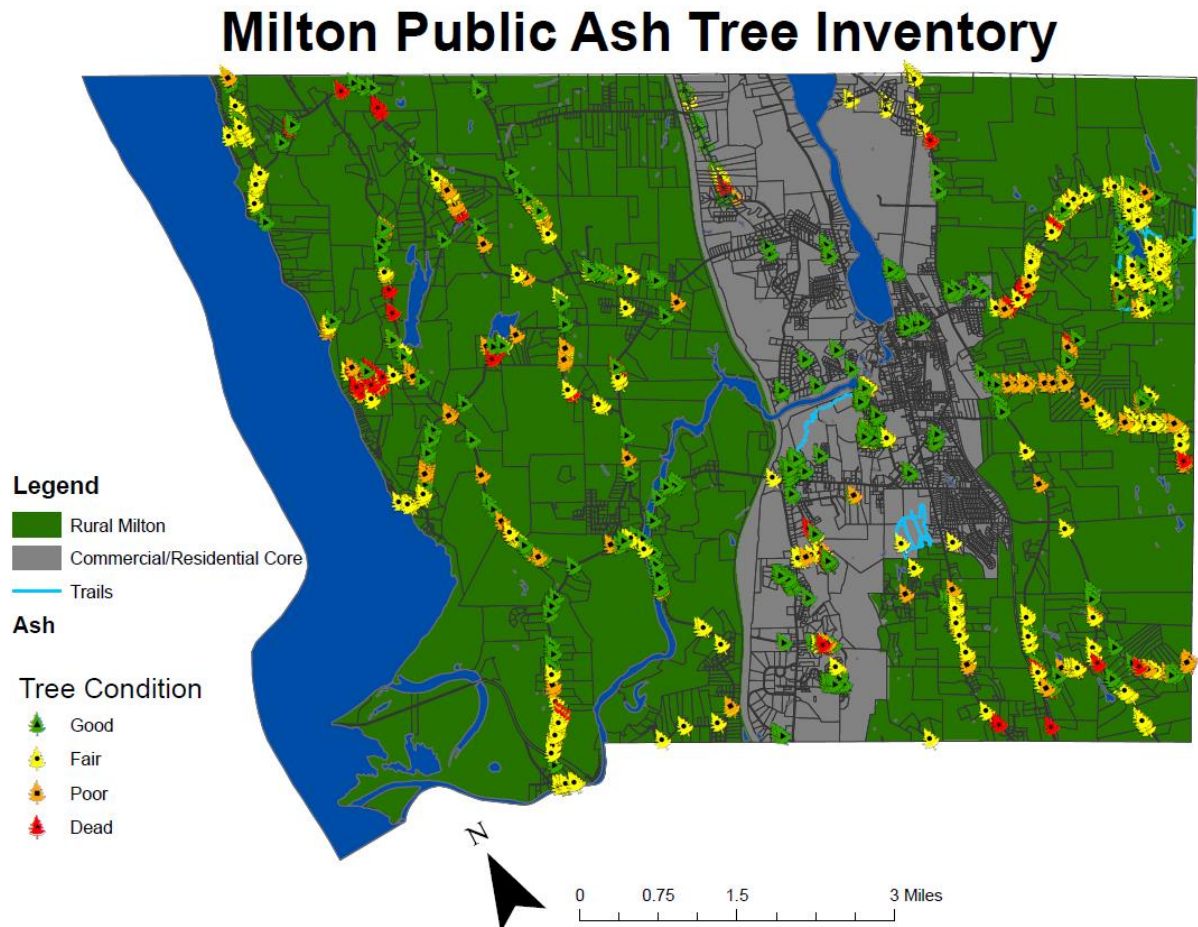


Trees were identified and mapped if they were approximately within the town's right-of-way, and they were classified by their structural condition. 1,793 ash trees were identified approximately within the town's right-of-way or along town trails.

The inventory draws a distinction between ash trees mapped in what is referred to as 'Rural Milton' and the 'Commercial/Residential Core.' The inventory makes this distinction because the

Commercial/Residential Core has more residential density and areas that are landscaped with intentional ash plantings along roads and in parks. EAB's aesthetic impact and tree risk to public safety will therefore differ in these areas, and so the town's approach to ash management will differ. For example, it would be aesthetically preferable to remove stumps in the town core, while in the rural areas of town it may be easier to fell trees in place without removal and beneficial to the local ecology to allow natural degradation.

Of the total ash trees inventoried, 74% of trees (1323) are located within the rural areas of Milton. 274 of the ash trees located in Rural Milton on town property are located along town trails. 470 ash trees are located within the Milton's Commercial/Residential Core, amounting to 26% of all inventoried trees.



The inventory revealed that there are significant concentrations of ash trees in declining condition on major thoroughfares leading into/out of Milton, including Westford Road, Middle Road, Bear Trap Road, and East Road. Local connectors, such as Beebe Hill Road, Lake Road, and Hibbard Road contain a number of ash in declining conditions. Notably, the Class III Devino Road, has a high concentration of ash trees that are in poor condition.

Eagle Mountain Natural Area has a large concentration of poor quality and dead ash trees, and the Milton Town Forest has a large concentration that range from fair to good. Considering that these are natural areas, trees in these areas can be left in place until they become an obstruction of the trails, at which point they can be cut back.

The trees within the town core tend to be in better condition overall when compared to the trees of rural Milton. These trees also tend to be younger, having been planted as street trees as a component of residential developments. Neighborhoods such as The Ledges, Checkerberry

Village, and the Stacy/Edwards Street area are representative of this trend within the town core area.

### **Community Engagement and Surveying**

The Town hosted two community engagement sessions – the first session was for informational purposes, and the second for determining community preferences. A third session was initially planned – however, due to staff turnover, a third engagement session was unable to be completed. The third session would have covered the details of this plan – in lieu, attendees of the planning sessions were mailed the advisory plan, and it was uploaded to the town’s website and advertised on social media.

For the second meeting, which focused upon citizen engagement, over 200 mailers were distributed to neighborhoods within the town’s core residential areas with high concentrations of ash trees. Notice was also posted online on Facebook and Front Porch Forum, around town with flyers, and in the Milton Independent.



Discussion during the planning session. Photo: Bonnie Pease

The meeting revealed concern for the aesthetic impacts removal will have upon neighborhoods with substantial ash tree concentrations, as well as the responsibility of the cost for treatment of ash trees in these areas.

In addition to the planning session, a survey was distributed amongst the attendees, as well as making the survey available online through Facebook and Front Porch Forum. A total of 41 persons submitted a response to the survey.

The survey revealed the following results:

- 55% of respondents supported a mix of the three strategies to address EAB

There was not a high degree of support for removal only (5%).

- Removal and replacement was the favored strategy for addressing EAB. Treatment was the second favored strategy, trailed closely by removal. This was consistent with the planning session, where residents expressed concerns over the aesthetic impact of large-scale removals over short and long terms.

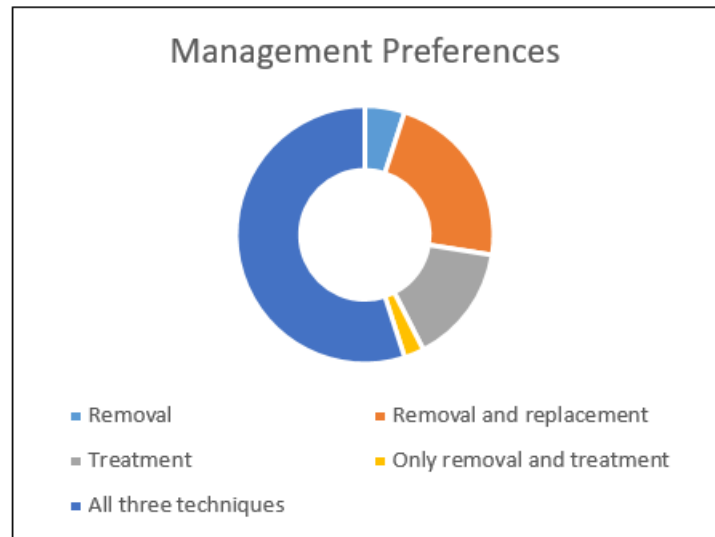
- For trees that must be removed, the survey demonstrated a preference for removals on neighborhood streets, followed by trees located on a major road and in parks.

- 82% of respondents favored replacing ash trees in neighborhoods with high concentrations, and 70% supported replacement in landscaped areas of parks. Natural areas and rural roads were not prioritized.

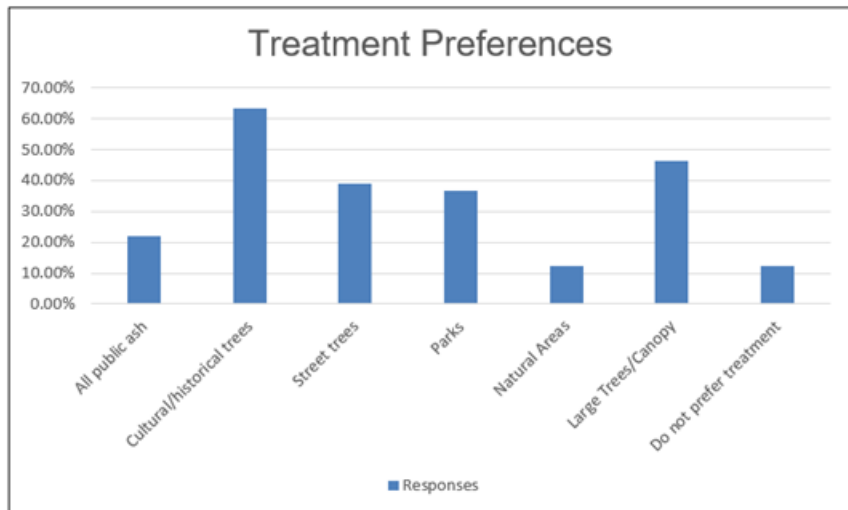
- Regarding treatment, there was a clear consensus that trees of historical/cultural significance should receive treatment. However, the majority of respondents did not favor treatment in parks, of street trees or large size/shade canopy (46%).

- Were trees to be treated, there was a strong preference for trees of 12-24" DBH, and a majority favored greater than 24" DBH (51%). 75% of respondents did not find trees up to 12" DBH to require treatment.

- Finally, most (92%) respondents found that the town should store ash on town property that cannot be immediately moved from the municipality until EAB is dormant, and ¾ supported sharing capacity with adjoining municipalities with some form of compensation.



Over 3/4 of respondents support removal and replacement to some degree.



Respondents identified high-value trees for treatment. The town should proactively work with community members to identify trees that may fit this criteria.

In summary, the survey revealed that respondents demonstrated a preference for removal and replacement, particularly on neighborhood streets and landscaped areas of parks, and removals should be prioritized on major roads. Respondents also indicated that treatment is favored in areas where there are high-value trees.

## Costs

The average tree costs \$18.33/inch of diameter at breast height (DBH) to remove. As a tree's condition degrades, the cost to remove it increases, as well as the potential for injury or property damage when the tree is felled. Ash can be particularly dangerous to cut down, as dead ash is brittle and therefore has poor structural integrity.

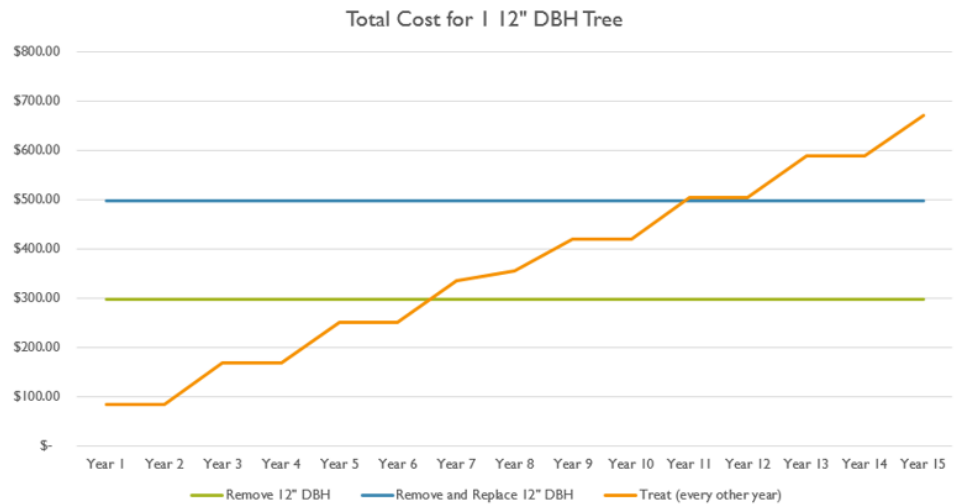
In landscaped areas of town, it is aesthetically desirable to remove stumps once trees are cut down. Stump grinding costs \$6.50/inch of DBH.

Treatment must be applied to trees on a bi-annual basis for what will likely be the lifetime of the tree. The cost for the insecticide treatment can

range from \$3-\$15 DBH. Current figures estimate for effective treatment to cost approximately \$100-\$150 per tree. When considering treatment, the cost of the application and ongoing maintenance of the tree should be considered. Additionally, there is an opportunity cost when using treatment as a management strategy – each year an ash tree is treated is a potential loss of a year of tree growth that could have occurred had removal and replacement been the management strategy.

The town contains 1793 ash trees completely or approximately within its property. However, 274 of these trees are trail trees, meaning 1519 trees are located near the town's road ROW. Since the trails are located in natural areas, the trees can live out their life cycle with little need for immediate action, reducing some costs to the town.

In the Commercial/Residential Core, there are 470 ash trees in or near the town's road ROW. For the purposes of estimating a cost to remove all of the trees within the core, all trees that were inventoried as between 1-12" DBH (small trees) are assumed to have a 6" DBH (353 trees), trees between 12-24" DBH (medium trees) are assumed to be 18" DBH (114 trees), and 24 or greater DBH (large trees) are assumed to be 24" DBH (3 trees). In this scenario, it would cost \$105,328.86 to remove all of the ash trees within or near the ROWs of the town core, in



While it is initially less expensive to treat ash trees for EAB as opposed to other management methods, it is an expense that must be maintained for the lifetime of the tree. This ensures that treatment is the more expensive long-term strategy.

addition to removing stumps. Replacement of all trees, assuming an average cost of \$250 per tree, would amount to \$117,500.

In a similar scenario for Rural Milton, with the exception of removing tree stumps, 856 small trees, 461 medium trees, and 6 large trees would cost the town \$186,966 to remove all of the ash trees within or near the town's ROWs.

Altogether, it could cost the town nearly \$300,000 to remove all of the town's ash trees that are in or near the town's ROWs. However, it will not be recommended that the town removes all of these trees. The purpose of the above scenario is to demonstrate the substantial costs entailed with managing the town's ash trees in light of the EAB, and the costs to remove, replace, and treat ash trees town-wide. The need to remove a tree will depend on site conditions, which can be evaluated by Milton's Tree Warden or other certified arborist.

### **Recommended Actions**

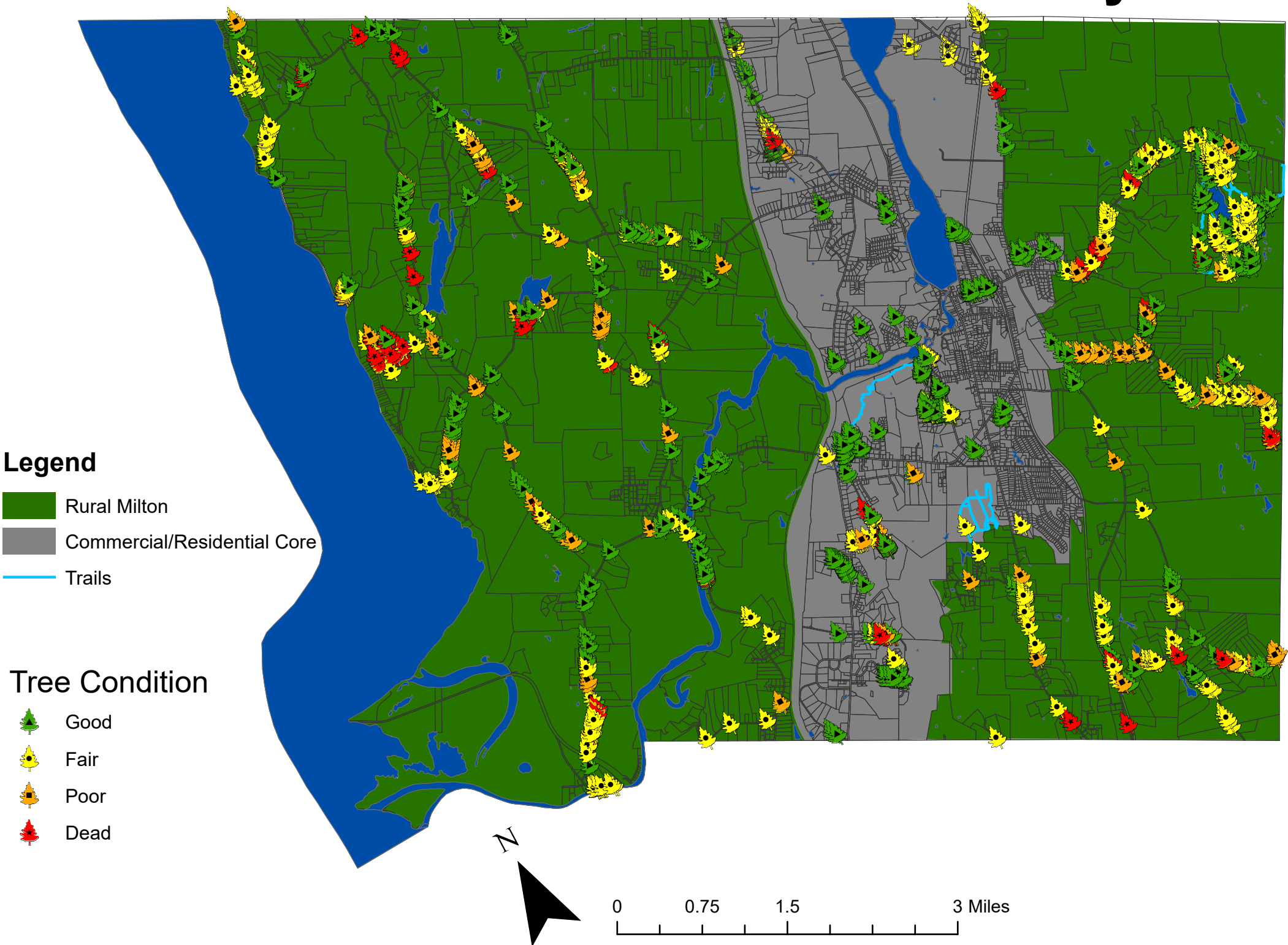
- Due to the substantial expense of potential necessary tree removals, the town should include a budget line item for tree removal for FY '21 and beyond. Tree removal should be prioritized by condition and location. Poor condition trees on major thoroughfares that pose a public safety risk should be removed as soon as possible. The town's Tree Warden can assist in identifying trees that should be prioritized for removal.
- Replaced street trees should be a native species that is appropriate for the site conditions and a warming climate. A variety of trees promotes healthy biodiversity – no monoculture should be planted, which means that the species of other nearby street trees should be taken into consideration.
- Work with property owners and utility companies when removing an ash tree that is located on the border of the town's ROW and private land/utility ROW.
- Leave trees in place in natural areas. Some ash trees may exhibit a resistance to EAB and continue to survive into the future.
- Trees near the road do not necessarily need to be removed, depending on if they lean away from the road, buildings, infrastructure, etc. The town's Tree Warden can provide an assessment.
- For trees being cut along rural roads and major roads in rural areas, the trees do not necessarily need to be moved from where they were felled (unless specifically requested).
- Consider treating the trees along Main Street due to their provision of shade over the sidewalks and road. The larger tree sizes in this neighborhood compliment the area's historic feel and iconic homes.
- Consider allowing homeowner's associations/a collective of homeowners to elect to treat the trees of their neighborhood, with the caveat that trees that are not properly maintained and become infected may be subject to the town cutting them down. An agreement to treat the town's trees within the ROW should be affirmed by the Selectboard.

- A storage area for woodchips/mulch could be located at the old landfill near the CSWD facility. Capacity could be shared with adjoining municipalities.
- Felled trees could be sent to the McNeilwood power plant in Burlington to generate electricity.
- Ash can be used as firewood, although it must not be transported outside of the infestation area in order to slow the spread of the EAB.

**Resources**

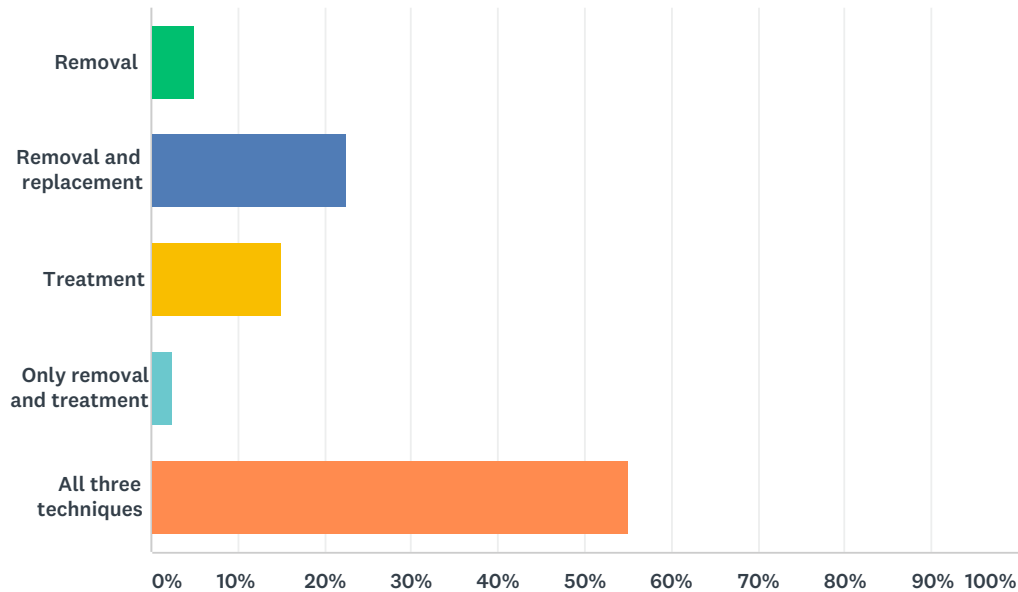
- <https://www.vtinvasives.org/invasive/emerald-ash-borer>
- <http://vtanr.maps.arcgis.com/apps/PublicInformation/index.html?appid=cfda013ad1464b7b9103a3d7806f0cc5>
- <https://www.arboday.org/trees/health/pests/emerald-ash-borer.cfm>
- <https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/the-threat/emerald-ash-borer/emerald-ash-borer-beetle>
- <https://www.invasivespeciesinfo.gov/profile/emerald-ash-borer>

# Milton Public Ash Tree Inventory



# Q1 The three methods under consideration for managing Milton's public ash trees are removal, replacement, and treatment. Which should be used for managing Milton's ash trees?

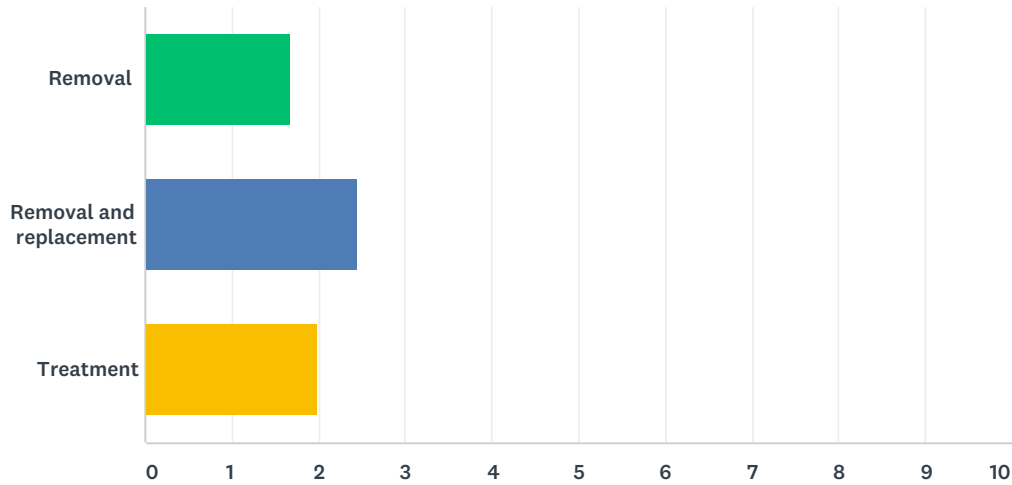
Answered: 40 Skipped: 1



| ANSWER CHOICES             | RESPONSES |    |
|----------------------------|-----------|----|
| Removal                    | 5.00%     | 2  |
| Removal and replacement    | 22.50%    | 9  |
| Treatment                  | 15.00%    | 6  |
| Only removal and treatment | 2.50%     | 1  |
| All three techniques       | 55.00%    | 22 |
| TOTAL                      |           | 40 |

## Q2 What should be the town's priority for managing ash trees on public property? Rank each option.

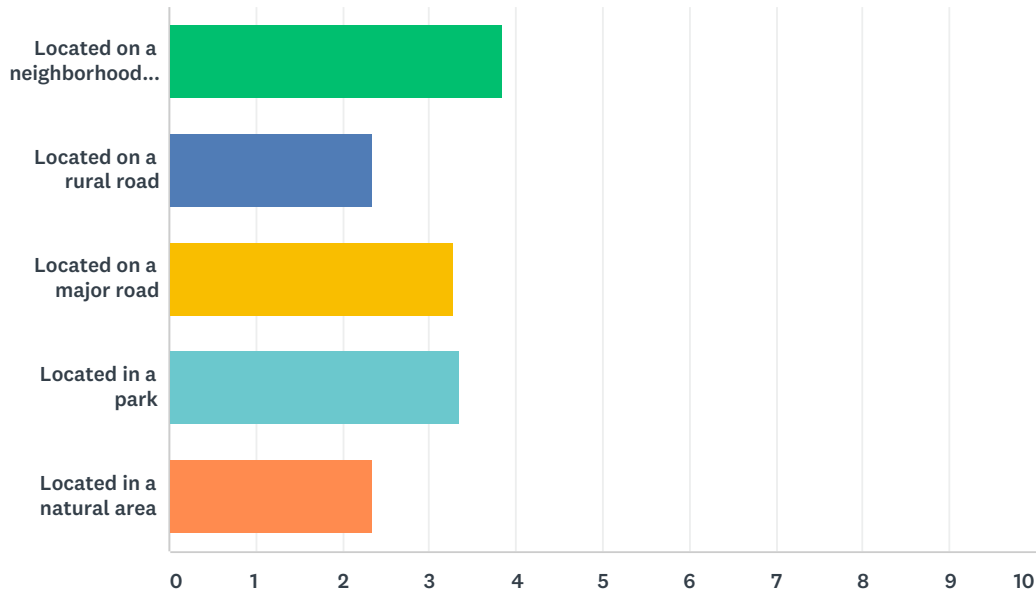
Answered: 41 Skipped: 0



|                         | 1            | 2            | 3            | TOTAL | SCORE |
|-------------------------|--------------|--------------|--------------|-------|-------|
| Removal                 | 16.67%<br>6  | 33.33%<br>12 | 50.00%<br>18 | 36    | 1.67  |
| Removal and replacement | 51.28%<br>20 | 41.03%<br>16 | 7.69%<br>3   | 39    | 2.44  |
| Treatment               | 35.00%<br>14 | 27.50%<br>11 | 37.50%<br>15 | 40    | 1.98  |

### Q3 How should the town prioritize removal of public ash trees? Rank each option.

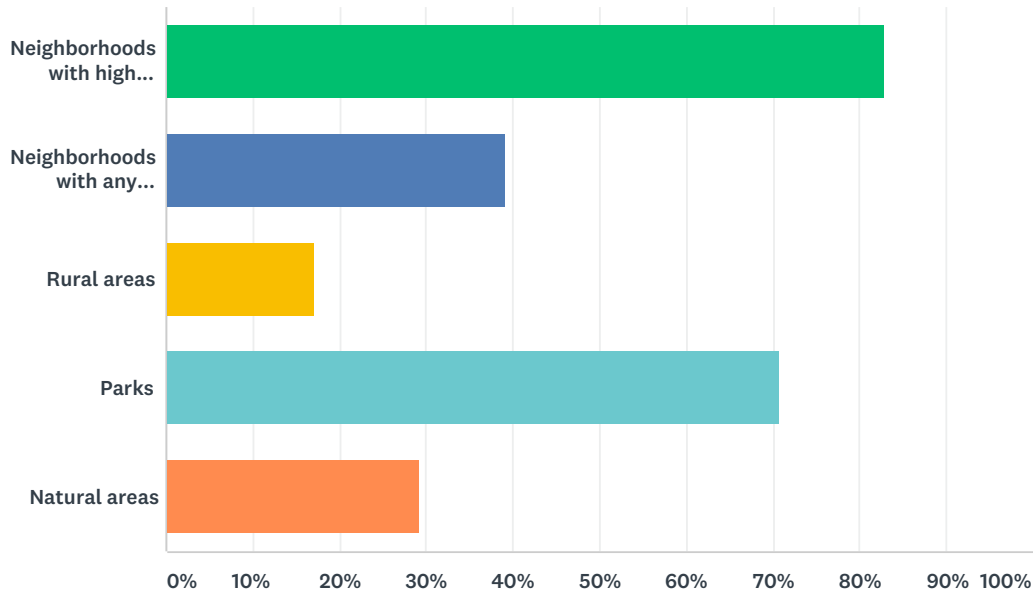
Answered: 41 Skipped: 0



|                                  | 1            | 2            | 3            | 4            | 5            | TOTAL | SCORE |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|-------|-------|
| Located on a neighborhood street | 41.46%<br>17 | 21.95%<br>9  | 21.95%<br>9  | 9.76%<br>4   | 4.88%<br>2   | 41    | 3.85  |
| Located on a rural road          | 0.00%<br>0   | 13.16%<br>5  | 21.05%<br>8  | 52.63%<br>20 | 13.16%<br>5  | 38    | 2.34  |
| Located on a major road          | 25.64%<br>10 | 25.64%<br>10 | 15.38%<br>6  | 17.95%<br>7  | 15.38%<br>6  | 39    | 3.28  |
| Located in a park                | 15.79%<br>6  | 31.58%<br>12 | 31.58%<br>12 | 13.16%<br>5  | 7.89%<br>3   | 38    | 3.34  |
| Located in a natural area        | 21.62%<br>8  | 8.11%<br>3   | 10.81%<br>4  | 2.70%<br>1   | 56.76%<br>21 | 37    | 2.35  |

## Q4 Where should ash trees on public property be replaced once they are cut down? Select all that apply.

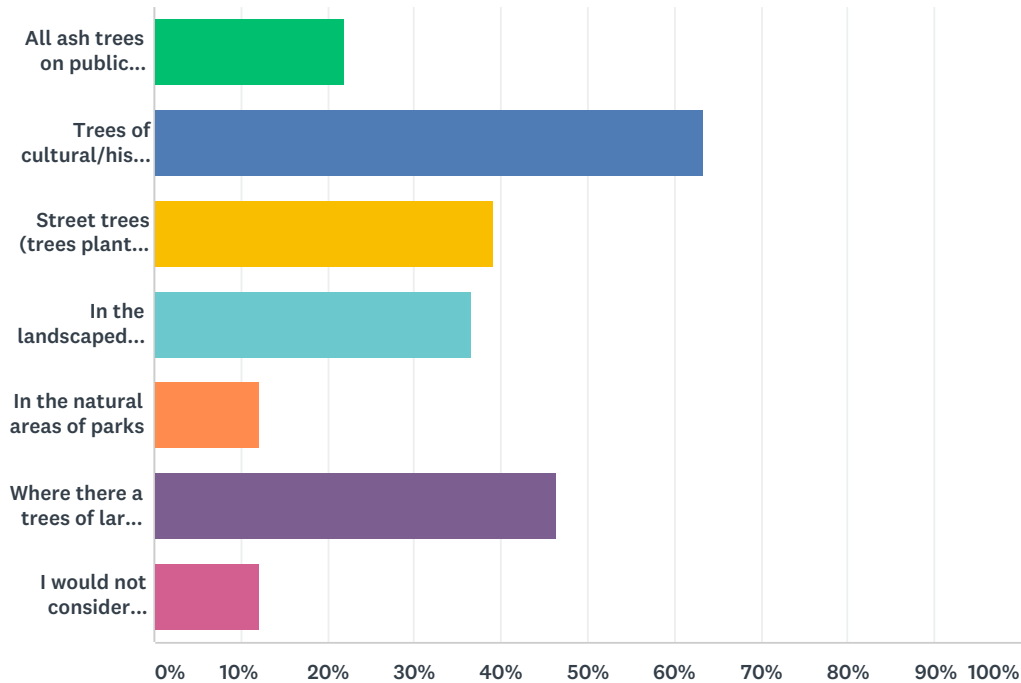
Answered: 41 Skipped: 0



| ANSWER CHOICES                                      | RESPONSES |    |
|-----------------------------------------------------|-----------|----|
| Neighborhoods with high concentrations of ash trees | 82.93%    | 34 |
| Neighborhoods with any presence of ash trees        | 39.02%    | 16 |
| Rural areas                                         | 17.07%    | 7  |
| Parks                                               | 70.73%    | 29 |
| Natural areas                                       | 29.27%    | 12 |
| Total Respondents: 41                               |           |    |

## Q5 Where should the town consider treating trees on public property? Select all that apply.

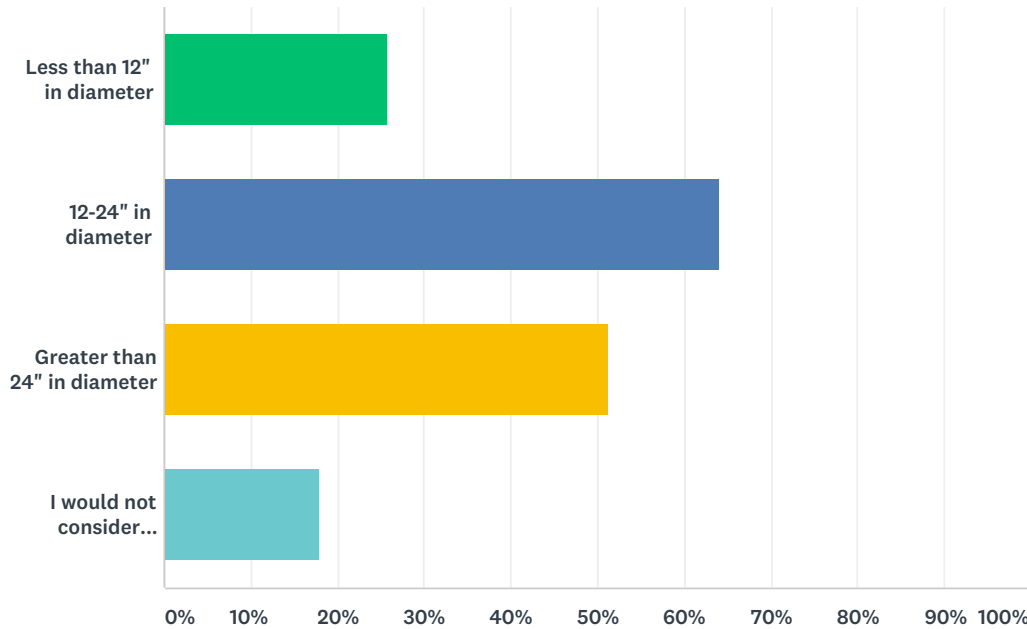
Answered: 41 Skipped: 0



| ANSWER CHOICES                                          | RESPONSES |    |
|---------------------------------------------------------|-----------|----|
| All ash trees on public property                        | 21.95%    | 9  |
| Trees of cultural/historical significance               | 63.41%    | 26 |
| Street trees (trees planted along the road)             | 39.02%    | 16 |
| In the landscaped areas of parks                        | 36.59%    | 15 |
| In the natural areas of parks                           | 12.20%    | 5  |
| Where there a trees of large size and shade canopy      | 46.34%    | 19 |
| I would not consider treatment as a management strategy | 12.20%    | 5  |
| Total Respondents: 41                                   |           |    |

## Q6 Which sizes of tree should be considered for treatment? Select all that apply.

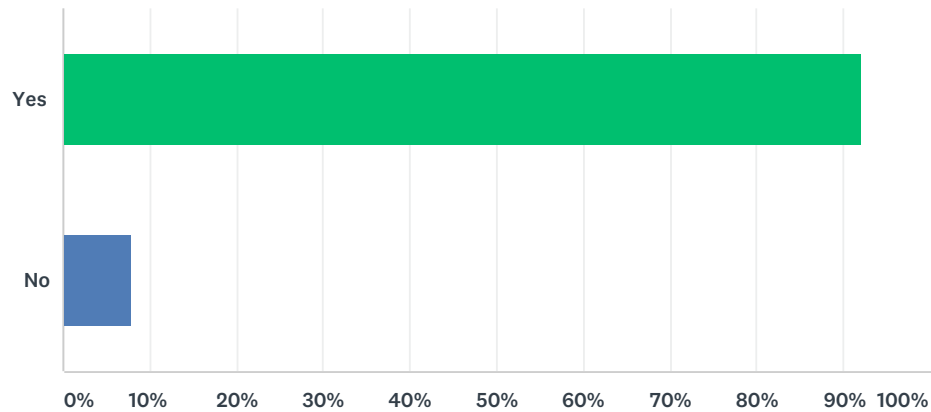
Answered: 39 Skipped: 2



| ANSWER CHOICES                                          | RESPONSES |    |
|---------------------------------------------------------|-----------|----|
| Less than 12" in diameter                               | 25.64%    | 10 |
| 12-24" in diameter                                      | 64.10%    | 25 |
| Greater than 24" in diameter                            | 51.28%    | 20 |
| I would not consider treatment as a management strategy | 17.95%    | 7  |
| Total Respondents: 39                                   |           |    |

Q7 Cut ash trees should not be transported during emerald ash borer's active season to slow their spread -- however, this requires storage of the cut ash. Should it be considered to site a storage area on town property to store Milton's cut ash?

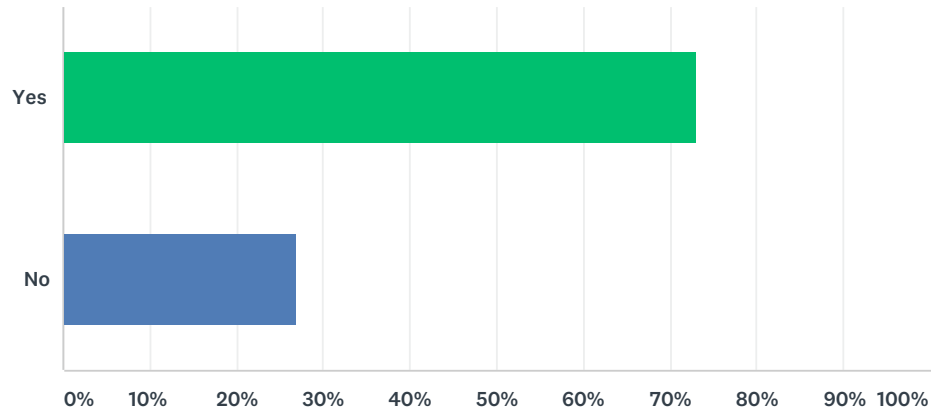
Answered: 38    Skipped: 3



| ANSWER CHOICES | RESPONSES |    |
|----------------|-----------|----|
| Yes            | 92.11%    | 35 |
| No             | 7.89%     | 3  |
| TOTAL          |           | 38 |

Q8 Should the town provide storage to surrounding municipalities with compensation?

Answered: 37 Skipped: 4



| ANSWER CHOICES | RESPONSES |    |
|----------------|-----------|----|
| Yes            | 72.97%    | 27 |
| No             | 27.03%    | 10 |
| TOTAL          |           | 37 |

**Q9 If you have other concerns regarding managing Milton's ash trees in light of the emerald ash borer, please let us know!**

Answered: 6   Skipped: 35