

# VERMONT URBAN AND COMMUNITY FORESTRY PROGRAM

## EAB Municipal Management Case Study

Rutland, Vermont

### APPROACH

*Treatment or removal of all ash, planting at removal sites*

### SUMMARY

The initial detection of emerald ash borer (EAB) in Vermont in 2018 prompted municipalities across the state to gather their resources and take the next steps to reduce future impacts of the introduced tree pests on urban and community forests. The City of Rutland, designated as a Tree City USA since 1991, has a strong history of tree management and stewardship. The City supports two full-time City Forestry staff. Rutland's proactive response to EAB has been led by these staff and supported by City leadership.

In August of 2018, a survey of the 76 miles of City-owned roads found and mapped 355 ash trees of approximately 4,000 total municipal trees under the City's jurisdiction. Following the survey, the City forestry staff prepared an EAB strategy, planning on a mix of ash tree removals and chemical injection treatments using emamectin benzoate to preserve some ash trees within the urban canopy of Rutland. The City gave discretion to the forestry staff in designating municipal ash trees to be treated or removed. Given an annual \$40,000 budget, they decided to treat 120 ash trees and remove the remaining 235 trees, spending a maximum of \$4,000 on treatment annually.

All work and decision making for removals and treatments was completed by the City forestry staff, so no formal EAB plan was adopted. To determine

which trees would be treated or removed, the forestry staff created a scale to rank all municipally-managed ash trees on factors including site details, stem defects, and crown structure. As the majority of the ash trees were quite healthy, adjacent property owner preference was also considered. The highest scoring trees have since been treated by City forestry staff with systemic insecticide every two years, as allowed for within the Forester's budget. The remainder of ash trees were removed.

The City forestry staff completed all 235 planned ash removals by 2019, and replanted each removal site within one year of removal. They planted a variety of hardwood species, sourced primarily from Northern Nurseries Inc. in White River Junction. Injection treatments began in 2020 and were split into two cohorts of 60 trees, with each tree receiving treatment every two years. Injections are performed in the spring and summer months by the City forestry staff at a rate of 10-15 trees per day.

## FAST FACTS

**Population:** 15,695 (2022)

**Miles of Town Maintained Roads:** 76

**Number of Ash Inventoried on City Roads prior to Removals:** 355

**Normal Management of Public Trees:** City tree maintenance is completed by the City Forester and Assistant City Forester. They regularly assess city tree health, administering maintenance on a case by case basis, ranging from pruning to removal and planting.

**Local Tree Ordinance:** [Tree Ordinance](#), amended June 2018; [Sight Ordinance](#), amended May 2018

**Ash Inventory Conducted:** Pen and paper ash inventory conducted in 2018 by the City Foresters.

**EAB First Detected:** Emerald ash borer was first detected in West Rutland (a nearby town) in October of 2020. As of July 2024, the pest has not yet been detected in the City of Rutland.

**Written EAB Strategy:** An EAB Strategy was prepared by the City Foresters in August of 2018 and approved by the Rutland Board of Alderman.

**Ash Management Status in 2024:** Between 2018-19, The City of Rutland carried out the removal of all 235 public ash trees slated for removal. The removals were completed by the City Forestry staff using climbing and limbing techniques. The sites of the removed ash were replanted by the end of 2020. The species planted included London plane tree, Kentucky coffeetree, red maple, thornless honeylocust, and pin oak.

Chemical injection treatments using emamectin benzoate began in 2020 on the remaining 120 ash.

The first cohort was initially treated in 2020, and the second in 2021. Treatments are administered biannually, resulting in the City forestry staff treating 60 years each year. Treatments are now on the third cycle.

**Key Players:** Tim Smith and Joseph Epler currently lead the EAB effort as the City Forestry staff. They work in the Department of Public Works, headed by Bob Protivansky, and also receive support from the Rutland Board of Alderman, the City's legislative body.

**Funding:** The majority of EAB project funding comes from the City forestry staff's annual budget of \$40,000. They allocate approximately \$4,000 annually for ash management. The City is able to financially support treating 120 trees because treatment is completed by the City forestry staff. This allows trees to be treated for an average of \$66 per tree (cost is dependent on the size of the tree) instead of upwards of \$300 per tree that a contractor would charge. Since the City of Rutland began managing for EAB, they have also received \$6,000 in funding which has been used for purchasing trees to replace removed ash.

**Wood Utilization:** Wood from removed ash trees was initially offered to nearby homeowners as firewood. The majority of homeowners did not accept the wood, so the remainder of the ash wood was given to Stafford Tech high school in Rutland to be utilized by the forestry program, or sold as firewood.

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## PROJECT COSTS

Activity	Project
<b>Removal</b>	In 2018-2019 The City of Rutland removed 235 public ash trees from city roads and other property. Work was completed by the City forestry staff.
<b>Treatment</b>	Beginning in 2020, the City of Rutland treated 120 ash trees with emamectin benzoate. Completed by the City forestry staff.
<b>Replacement</b>	By the end of 2020, 235 trees had been replanted at the removal sites by the City forestry staff. Trees were sourced from Northern Nurseries Inc. and Schichtels Nursery Inc., and purchased for \$300 per tree, totaling \$70,500.



Photo credit: Lila Turner

*Diversity of street trees planted in Rutland.*



*Ash injection system for EAB treatment.*



*Ash tree in town common.*

## ON THE GROUND

*“We were doing it preemptively. We didn’t want to climb dead trees... once you notice emerald ash borer is there, the tree’s smoked.”*

**Tim Smith, City of Rutland Forester and Arborist, comments on Rutland’s approach of removing or treating all ash preemptively**

This plan allowed municipal ash to be removed safely and efficiently, and allowed for replanting efforts to begin immediately, as opposed to waiting to remove and replant trees once they were visibly infested with EAB.

## LESSONS LEARNED

- **Think Proactively:** Removal of healthy ash trees is much safer and cheaper than removal of EAB infested ash. Planning for the eventual removal or treatment of all ash allows for removal decisions to be made earlier, reducing project costs.
- **Consider Diversity:** Spreading treated trees throughout the City will allow for local diversity in the future. Many decades down the road there will be a mature ash canopy mixed in with the other replanted species, contributing to the health of the overall city canopy.
- **Consider Long-Term Management:** For injection treatments to be effective, they must be reapplied every two years. At a cost of \$100-200 per tree (depending on diameter), it is important to consider this long-term financial commitment to treating ash, and what can be managed within an annual budget.



**Ash tree in town common.**

### Vermont Urban & Community Forestry Program

Vermont Department of Forests, Parks and Recreation in partnership with University of Vermont Extension

