EAB Municipal Management Case Study

Middlebury, Vermont

SUMMARY

Even prior to the confirmation of emerald ash borer (EAB) in Vermont in 2018, towns across Vermont began preparing their urban forests for the likely loss of ash trees (*Fraxinus* spp.). In the summer of 2014, Middlebury and East Middlebury, Vermont partnered with Vermont Urban and Community Forestry to inventory all trees along public rights-of-way and in public places, including ash trees. In 2019, the Town of Middlebury approved an EAB Management Plan to address its 92 ash trees in public ways and places. The plan proposed a mixture of ash tree removal, replacing removed ash trees with resistant native shade trees, and treating some large-diameter ash trees with systemic insecticide to protect them from EAB infestation. Tree replanting goals aimed for two non-ash replanted trees for every ash tree removed. The Plan also included community education and outreach activities to bring awareness to the impact of EAB, including community presentations, a permanent EAB resource website, work with local schools, and communication to homeowners about how to address ash tree management on their property.

In 2021, the Town of Middlebury began implementation of its EAB management plan by removing 16 ash trees in poor or dead condition, treating two large-diameter ash trees with pesticides, and planting of 36 non-ash urban trees within the public right-of-way. The Town was awarded a $10,000 Ash Tree Management Grant from the Vermont Urban & Community Forestry Program, which, when matched by town funds and in-kind labor, contributed towards the total project budget of $21,897, excluding the pesticide treatment costs.

Also in 2021, the Town of Middlebury received an Arbor Day Grant from Vermont Urban and Community Forestry for $1,000 to replant trees near the Middlebury Teen Center. The Middlebury Tree Committee worked with the Town Tree Warden Chris Zeoli, the Middlebury Department of Public Works, and teenage volunteers to purchase, plant, and monitor five 1.5" caliper bare root trees.

In 2022, the town coordinated with the Vermont Agency of Transportation to address permitting and planting processes in the State right-of-way along Route 125. With $4,710 of funding from a VT UCF Community Canopy grant, the project was successfully completed in 2023 through cooperation between the Town's Public Works Department, the Vermont Agency of Transportation permitting staff, and the volunteer Ad Hoc Middlebury Tree Committee.

Also in 2022, the Town of Middlebury planted 22 trees in municipal ROWs, hired and supervised a part-time employee to update the town's street tree inventory and incorporate it into the department's master infrastructure database program, create outreach material to inform

SUMMARY CONTINUED

residents about tree planting in the ROW in front of their homes, and plant trees in the Middlebury Middle School's newly-formed outdoor classroom. With $8,745 of grant funding and $11,236 of in-kind service donations, the project integrated town staff, tree board volunteers, local homeowners, and professional arborists to plant in the fall of 2022 and spring of 2023, completing all work by June 2023. The Town also gave away sugar maple seedlings at an Arbor Day Celebration on May 6, 2023.

FAST FACTS

Population: 9,152 (2020)

Miles of Town Maintained Roads: 66

Number of Ash Inventoried on Town Roads prior to Removals: 979 were inventoried in both East Middlebury and Middlebury.

Normal Management of Public Trees: Trees are removed by town highway staff if possible. Large tree removal projects are contracted after bidding and have historically been completed by Vaillancourt Tree & Landscape Service. Pruning of public trees is contracted after bidding and has historically been completed by Trees, Inc.

Number of Ash Trees: Inventory conducted in 2016 identified 92 ash trees in the public right-of-way or in public spaces.

Active Tree Board or Conservation Commission: Middlebury Ad hoc Tree Committee, Middlebury Area Land Trust

Local Tree Ordinance: Created and adopted in 2018, third revision in 2020. Available here via search on the Town of Middlebury website: townofmiddlebury.org.

EAB First Detected: 2021 in an EAB trap.

Written EAB Management Plan: Middlebury Emerald Ash Borer Management Plan Updated June 2019. Available here and via search on the Town of Middlebury website: townofmiddlebury.org.

Ash Management Status in 2022: The Town of Middlebury continues to monitor remaining ash trees in the municipal right-of-way.

Key Players: Members of Middlebury Tree Committee including Leslie Kameny, Judy Wiger-Grohs, Josh Behounek, Hans Raum, and Sally Thodal; town tree warden Chris Zeoli; town manager Kathleen Ramsay.

Awarded Funding: In 2021: $10,000 Municipal Ash Management and $1,000 Arbor Day Grant, both awarded by the Vermont Urban & Community Forestry Program. In 2022: $9,000 Growing Urban Forests in the Face of Emerald Ash Borer Grant and $5,000 Communities Caring for Canopy Grant, both awarded by the Vermont Urban & Community Forestry Program.

Wood Utilization: Chipped

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ON THE GROUND

"It's hard to find urban ash trees here that are worthy of being treated for the rest of their lives."
Chris Zeoli, Middlebury Tree Warden

"I wholeheartedly support getting tree data into town infrastructure systems."
Leslie Kameny, Middlebury Tree Committee member

COST OF PILOT PROJECT AND ESTIMATED COSTS FOR REMAINING TREES

Activity	Pilot Project	Pilot Work Personnel
Treatment	Trees over 24" DBH: $2,280-> 4 Trees **$570 per Tree** Treatment costs are every 1 – 2 years depending on insecticide treatment used.	
Removal	**2021**: 14 ash trees in good condition and less than 24" DBH at a popular trail head parking area. Total = $8,529.43 ($875 from the grant and $7,654.43 as match). **Per tree = $609.25.** $11,872.50 ->70 Trees **$169.60 per tree**	In 2021: Zeoli Tree Services
Replanting	2021 municipal ROW planting: 36 trees (23 B&B and bare root in spring, 13 bare root in fall). **Total = $8,349.56** including purchase, delivery, planting, mulch and gator bags. **Per tree = $231.93.** 2021 public park planting: Five 1.5" caliper bare root trees along public park path, planted by volunteers. Total = $1100. **Per tree = $220.** 2022 State Highway 125 ROW tree planting: 15 trees. Total = $4,710.96 including purchase, delivery, planting, stakes, mulch, watering bags. **Per tree = $314.06** 2022 municipal ROW planting: 22 trees. Total = $6,885.55 including purchase, delivery, planting, stakes, and gator bags. **Per tree = $312.98.**	In 2021: B&B trees bought from and planted by Horsford's Nursery and Boro Hill Nursery. Bare root trees bought from Schichtel's Nursery via the City of Rutland bare root order and planted by a nursery vendor. In 2022: 10-gallon and 15-gallon container trees bought from and planted by Horsford's Nursery; B&B trees bought from and planted by Boro Hill Nursery; watering completed by volunteers.

Tree planted in 2021.

Tree planted in 2021.

LESSONS LEARNED

- **Maintain public interest in public trees.** Confirmation of emerald ash borer three years ago sparked interest in the town's community canopy. But without current dieback of ash trees in town, it is difficult to maintain support and continue management.

- **Have a good relationship with your town's department of public works.** It's essential to have these staff informed about tree planting efforts and best management practices for tree care.

- **Keep track of invoices.** This takes dedicated time and resources from a volunteer or town staff member.

- **Consider species selection in light of climate change.** The Town of Middlebury has planted yellowwood, tulip tree, katsura, and American sycamore.

Municipally-planted trees near the Middlebury Teen Center.