

Background on Emerald ash borer

Emerald ash borer (EAB) is a nonnative, invasive beetle from Asia that invades and kills ash trees (*Fraxinus* spp.). Minnesota is home to nearly one billion ash trees and as ash trees have no immune response against EAB, this pernicious beetle will eventually kill all ash trees in Marshall. As of December 2020, EAB has not been discovered in Marshall or in Lyon County. Notably, EAB has been identified in Nobles County and Brown County which are currently under an EAB quarantine (MDA). The locations of these two identifications are both approximately 60 miles from the City of Marshall.

EAB spreads slowly on its own, moving approximately one mile annually (ISU). EAB migrates rapidly to new locations by moving in infested firewood and logs to un-infested areas. At this time, EAB has not been discovered in Lyon County. Unfortunately, this destructive pest will eventually arrive in Lyon County and Marshall, whether it is by slow spread or by human transport.

The life cycle of EAB takes place mostly below the bark of an ash tree. Adults lay eggs on the bark and the beetle larvae burrow into the cambium. The larvae feed by tunneling in the wood, creating “S”-shaped larval trails and cutting off the flow of nutrients throughout the tree. The larvae overwinter in the tree and emerge in spring as adult beetles. Once the larvae have begun feeding on the ash tree, the tree will likely die within 1-3 years. Dead ash trees are unpredictable, unstable, and not structurally sound. An infected ash tree can pose dangers to its surroundings and should be properly removed during the winter season.

Course of action for the removal of public ash trees

Marshall’s public tree makeup is roughly 20% ash with the percentage expected to increase when the public tree inventory has been finished. The tree inventory completed in fall of 2020 counted 744 ash trees in the city’s parks, public areas, and public schools. Since ash trees are a sizeable part of Marshall’s tree population, it is necessary to have a preparedness plan in place for when EAB arrives.

Many cities and counties with an EAB preparedness plans have put a variety of ash tree replacement programs in place that suit the needs of that location and its community. The City of Worthington is removing 10% of its ash tree population every winter for ten years and plans to commit to replacing up to 75 trees a year. The Minneapolis Parks and Recreation Board removes up to 20% of its boulevard ash trees in a single season with scheduled replacements taking place (MPRB). The City of Plymouth is removing all ash trees located on the boulevards and providing residents with free replacements trees.

The City of Marshall plans to remove 10% of its ash trees annually during the winter season in a 10-year removal plan. Based on the City’s 2020 tree inventory, approximately 75 ash trees will

be removed in a single season from public areas. It is estimated to cost \$850 for the removal of each ash tree, totaling \$637,500 to remove the ash trees in public areas. If EAB is found in Marshall, the removal of the ash trees will be focused on the infected trees and the surrounding ash trees until cleared. Removal will be designated on a priority removal basis. Ash trees that appear stressed or are in poor condition will be marked for priority removal. All ash trees in public areas will be removed during the 10-year removal plan regardless of tree health.

Replacement of ash trees on public property

The City of Marshall Parks Department will facilitate the replacement tree plantings in the public areas. Due to the high number of plantings needed to increase diversity while replacing the ash tree population, it is recommended that the City of Marshall create a Tree Advisory Board. The members of the Tree Advisory Board (TAB) will be comprised of residents of Marshall who are willing to take on roles and responsibilities to preserve their community's urban forest. TAB members will be required to complete the Tree Stewards program hosted by the City of Marshall and the University of Minnesota.

Responsibilities of TAB members will include the following:

- Tree identification and tree health
- Properly planting trees and mulching the trees
- Knowing the different types of nursery trees and planting maintenance needs
- Using proper watering devices
- Identifying common tree diseases and pests, such as EAB
- Assist in determination of acceptable planting varieties

In addition to these responsibilities required in the University of Minnesota Tree Stewards program, TAB members will take on a leadership role in the City of Marshall. The TAB members will act as a link between the Parks Department and the community. TAB members may provide basic tree information to members of the community or direct them to City employees who will be able to help with any further questions.

TAB members will assist the Parks Department by marking all ash trees for removal based on a provided map of inventoried ash trees. They will also aid in tree plantings in public areas to replace the ash tree population.

References

<https://mnag.maps.arcgis.com/apps/webappviewer/index.html?id=63ebb977e2924d27b9ef0787ecedf6e9> DNR EAB map

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<https://www.dglobe.com/news/4450949-worthington-planning-ahead-emerald-ash-borer>
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