

HENNEPIN COUNTY
MINNESOTA



Community forestry progress report

2021

Hennepin County Environment and Energy

701 Fourth Avenue South, Suite 700, Minneapolis, Minnesota 55415-1842

hennepin.us/trees

Contents

Introduction _____	1
Goal 1: Plant, diversify, and maintain trees throughout Hennepin County _____	2
Objective 1.1: Plant more trees on Hennepin County properties _____	2
Objective 1.2: Enhance gravel bed nursery operations _____	4
Objective 1.3: Expand programming to increase tree canopy cover _____	4
Goal 2: Increase the resiliency of Hennepin County’s community forest _____	5
Objective 2.1: Provide more robust data and information to help with tree management efforts, planning, and prioritization _____	5
Objective 2.2: Implement emerald ash borer preparedness actions _____	6
Objective 2.3: Continue the Healthy Tree Canopy Grant Program _____	7
Objective 2.4: Protect and increase trees on Hennepin County property _____	7
Goal 3: Build organizational capacity to support, value, and maintain trees _____	8
Objective 3.1: Foster partnerships across Hennepin County lines of business _____	8
Objective 3.2: Protect mature trees _____	8
Goal 4: Educate and engage residents to become stewards of the community forest _____	10
Objective 4.1: Educate and engage volunteers _____	10
Objective 4.2: Educate and engage youth _____	11
Objective 4.3: Educate and engage residents _____	11
Objective 4.4: Foster effective partnerships _____	11
Contact information _____	12

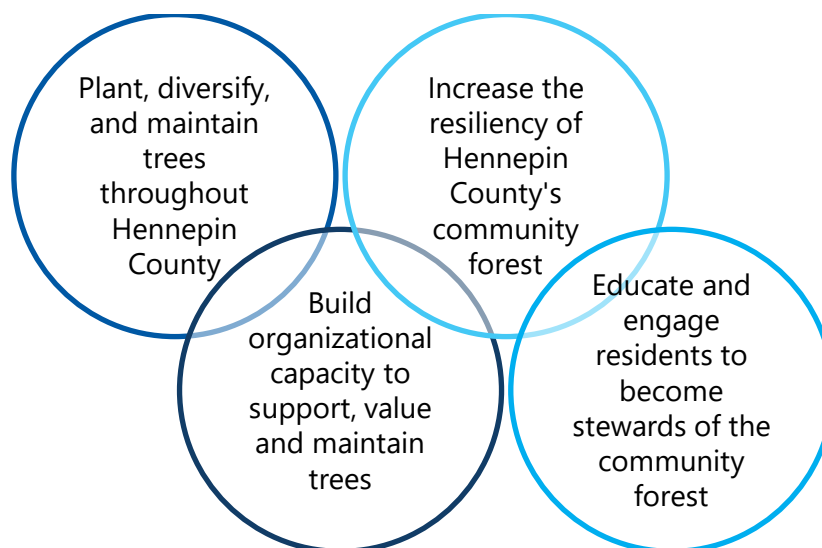
Introduction

Creating a community forestry program in the Environment and Energy Department was part of the county's expanded role in natural resource conservation. The forestry program focuses on protecting the county's tree canopy to increase the benefits that trees provide. Trees improve air quality by absorbing fine particulate matter and other pollutants and protect water by slowing down and infiltrating stormwater runoff. They also provide shade, reduce the urban heat island effect, lower stress, and increase property values.

Aspects of the county's forestry program include growing healthy trees, partnering in large-scale planting events, managing threats to the tree canopy, raising awareness about tree pests and disease, educating the public on the benefits of trees, and supporting partners through the Healthy Tree Canopy Grant program.

In 2020, Hennepin County Forestry created a Community Forestry Strategic Plan with program-specific goals and objectives in support of the Environment and Energy Department's mission and climate resiliency initiatives and the Natural Resource Strategic Plan. Additionally, Hennepin County adopted a Climate Action Plan in 2021 and set a goal to plant one million trees, as well as support existing goals to plant, diversify, and maintain trees throughout Hennepin County and increase the resiliency of the county's community forest

The following sections of this report follow the four overarching goals identified in the Community Forestry Strategic Plan, which are named below, and provide status updates for the associated objectives. Overall, many projects and efforts were successful in 2021.



Goal 1: Plant, diversify, and maintain trees throughout Hennepin County

Objective 1.1: Plant more trees on Hennepin County properties

In 2021, the Hennepin County forestry program planted 570 gravel bed trees throughout the county. Fifty-six different species were planted to maximize tree diversity, including katsura and Turkish hazelnut that are climactic adaptive species. These trees generally have a more southern range but are being planted locally as the climate is warming. Trees were planted by Hennepin County foresters, Sentencing to Service (STS) crews, and internal volunteers.

Locations	# trees planted in 2021	# trees planted since 2015
Facilities	279	1,072
Rights-of-way	268	2,956
Resident real estate services	2	26
HCCRA	21	21
Easements	0	452
Other	0	823
<i>Total</i>	<i>570</i>	<i>5,553</i>

Facilities

In 2021, Hennepin County forestry's largest facility project was to provide 160 trees as part of the Medical Examiners' facility construction. By providing these trees in-house, Hennepin County was able to save up to \$24,000.

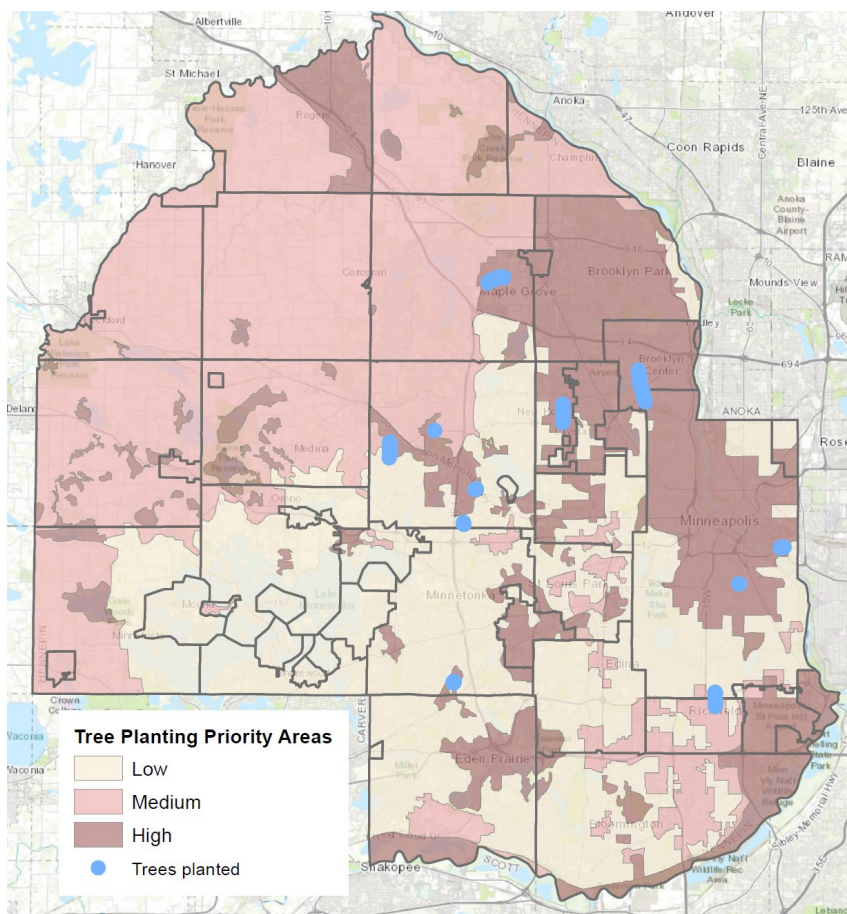
The Hennepin County forestry program also was tasked with removing and replacing trees at the Golden Valley Sherriff's facility. This facility contained a large, wooded area with numerous ash trees. Utilizing outside contractors as well as our in-house STS crew, we removed 45 large diseased ash and elm trees and planted 90 trees as replacements.

There were also 29 additional scattered replacements or plantings at the Adult Correction Facility, Plymouth Library, Rogers Library and Government Center.

When compared to an average per tree cost of \$550 charged by an outside landscaping firm, utilizing our STS crews and planting trees from the county's gravel bed nursery saved the county's Facility Services Department \$53,550 in addition to the amount saved by providing trees for the Medical Examiners Facility.

Rights-of-way

A total of 268 trees from the county's gravel bed nursery were planted on various sites along county roads in 2021. This includes corridor tree plantings in Brooklyn Center, Maple Grove, Minneapolis, New Hope, Plymouth, and Richfield. Most trees planted in 2021 were in high priority planting locations (see map below). The image depicts the 2021 projects on a color-coded base map of priority planting areas. This base map was developed through a [geographic-information-system \(GIS\) analysis](#) of existing tree canopy and a weighted prioritization of areas for tree planting initiatives based on environmental, population, income, employment, education, housing, and health factors.



One of these sites was a planned road reconstruction with landscape improvements that included planting 41 trees. Using the gravel bed trees resulted in large cost savings compared to purchasing and installing trees with a contractor. When compared to an average per tree cost of \$550 charged by an outside landscaping firm, planting trees from the county's gravel bed nursery saved the county's Transportation division \$18,450.

The remaining sites were chosen to address specific corridor needs, including replacing ash trees that were removed proactively because of the threat of Emerald Ash Borer. Since these plantings were

proactive and not part of a planned reconstruction, there is no immediate budget savings. But doing this now eliminates the need for future plantings and the associated expenses.

Objective 1.2: Enhance gravel bed nursery operations

In 2020, construction was completed for the new Hennepin County gravel bed. 2021 marked the first year of use for the newly paved gravel bed. The gravel bed performed as we expected it would. The root systems were vigorous, and the trees thrived. We had no issues with installation nor removal of the trees.



Newly paved gravelbed nursery site

Objective 1.3: Expand programing to increase tree canopy cover

Community tree giveaway

Due to the limitations posed by COVID-19, forestry staff were not able to have volunteer tree plantings in 2021, resulting in an excess of trees in the gravel bed. The extra trees offered an opportunity to partner with communities. Hennepin County was able to offer trees to cities at no cost with the provision that the trees were to be planted on public property. All cities in Hennepin County were contacted and given the list of available trees. The cities were then prioritized by their need for canopy as shown in the tree planting prioritization map. Through this program, we were able to place 344 trees in 11 cities.

Tree Sale

As part of its role as a Soil & Water Conservation District (SWCD), Hennepin County revived its tree sale program in the spring of 2021. Residents purchased over 2,000 seedlings of eleven different tree and shrub species. Those who purchased the seedlings indicated that they were interested in planting the trees for the purposes of visual screening, creating or enhancing wildlife habitat, and reforestation. Due to the popularity of this pilot, Hennepin County is increasing the scope of the tree sale program for 2022.

Goal 2: Increase the resiliency of Hennepin County's community forest

Objective 2.1: Provide more robust data and information to help with tree management efforts, planning, and prioritization

Community tree inventories

In 2018, Hennepin County created a free tree inventory application that allows any entity within the county to collect and store tree inventory data. This resource can help smaller cities and organizations better understand their tree resources and maintenance needs to help prioritize work and reduce the overall costs. Tree inventories are the first step for organizations to understand their current canopy and develop canopy management strategies. It is important for communities to understand ash tree locations to help prioritize emerald ash borer management strategies and to diversify their canopy.

In 2021, St. Anthony utilized the tree inventory application to collect tree inventory data. The city of St. Anthony partnered with Tree Trust's Youth Build crews to collect data points on 832 trees. An i-Tree report was completed and determined that the structural value of the trees inventoried is \$941,000. The structural value is the value of the trees based on the physical resource itself or the cost of replacing a tree with a similar tree. The tree inventory application continues to be of interest to Healthy Tree Canopy Grantees and a resource that can help cities improve their forestry data.



St. Anthony Village tree inventory

Monitoring summary

Annually, forestry staff monitor a subset of trees planted each year, and 685 trees were monitored in 2021. Each tree's width is measured for five years to determine growth rates and survival rates, and how these vary based on location (rights-of-way vs. facilities, etc.). This is the fifth year for data collection and the trees in the monitoring program are generally surviving and growing. Results will be analyzed by the University of Minnesota to inform planting locations, species selection, and methods.

Soil sampling

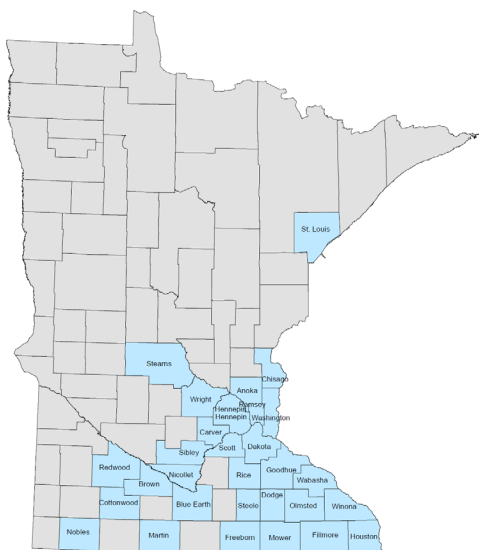
In 2018, Hennepin County staff began collecting soil samples from various county road rights-of-way to track the effect that road salting is having on our roadside vegetation. Ten composite soil samples were

collected in the spring of 2021 at the same sites as the previous years. While the samples have not yet been tested for their salinity due to lab delays stemming from the pandemic, they will eventually provide datapoints to create a clearer picture of the amount and distribution of soil salinity on county roads.

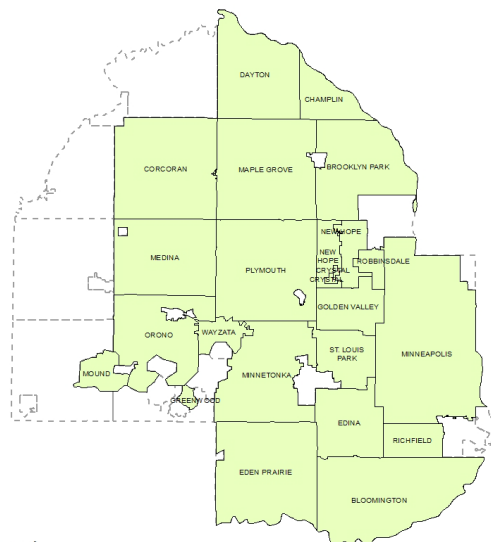
Objective 2.2: Implement emerald ash borer preparedness actions

Emerald ash borer, an invasive tree pest from Asia that attacks and kills ash trees, has continued to spread in 2021. In Minnesota, infestations have been confirmed in 30 counties. All confirmed counties are under quarantine, which prohibits ash tree waste from being transported outside of quarantined areas.

Within Hennepin County, cities are continuing to find emerald ash borer infestations in ash trees. There are 22 cities that have confirmed cases of emerald ash borer, and the spread within these cities continues to intensify.



Confirmed EAB by Minnesota county



Confirmed EAB by city in Hennepin county

Hennepin County foresters continue to update the inventory of ash trees on county property. As of December 2021, there are 1,180 existing ash trees within the right-of-way along county roads. Transportation Operations assisted with removal of infected trees during the 2021-2022 winter. Proactive removal of infected trees before they become hazardous is necessary to reduce the overall removal costs and eliminate threats along county roadways.

Objective 2.3: Continue the Healthy Tree Canopy Grant Program

In September 2021, the Hennepin County Board approved twenty Healthy Tree Canopy Grant projects. The Healthy Tree Canopy Grant program promotes a more diverse, resilient, and equitable tree canopy, mitigates the effects of tree pests and pathogens on the community forest, and facilitates tree canopy improvements at affordable housing developments and in other areas of need. Grants are available to cities, affordable housing providers, schools, and nonprofit organizations and the tree planting prioritization map is used as a tool to help select grantees.

The 2021 approved grants include eight cities, three affordable housing providers, and nine schools and nonprofits. Thirteen of the twenty recommended grants are located entirely within moderate and high priority planting areas or contain canopy deficient areas.

Additionally, twenty projects from previous grant rounds were completed in 2021. Many grantees were creative with making pandemic-appropriate changes, and forestry staff were flexible with granting extensions or assisting with these adaptations.

Objective 2.4: Protect and increase trees on Hennepin County property

Hennepin County Forestry is taking a proactive approach to protect the existing canopy on Hennepin County property. As we know, protecting the canopy that already exists and produces benefits is the preferred practice to removing with or without replacement in construction projects.

In 2021, Hennepin County Forestry created a contract to have Davey Resource Group produce a tree preservation plan that could be used as an ordinance to protect trees on county property. There are multiple facets to the ordinance and how trees will be protected. These include construction practices that eliminate compaction on adjacent trees, limiting trees that can be removed, replacement requirements and outlining best practices for all Hennepin County trees.



Tree protection at new Medical Examiners facility during construction

Goal 3: Build organizational capacity to support, value, and maintain trees

Objective 3.1: Foster partnerships across Hennepin County lines of business

Portland Avenue reconstruction

A total of 41 gravel bed trees were planted along Portland Avenue in Minneapolis and Richfield as part of a county led reconstruction project. The trees were planted with STS crews and Environment and Energy staff. Forestry was a part of the design process from the beginning of the project and is responsible for watering and maintaining the trees for two years after installation in 2022-2023. If the trees were planted using a typical contractor, the total project cost could be \$22,550. Utilizing gravel bed trees only cost \$4,100, which resulted on a total project savings of \$18,450.

Young tree pruning

Planting trees comes with the necessary maintenance of those trees. The cost of maintaining large trees with defects can be quite expensive. Young tree pruning is one of the easiest, and most neglected, practices in tree maintenance. Pruning trees for form when they are young allows for improved structure while the branches are small and leaves smaller pruning wounds. Hennepin County Forestry offers this service and keeps detailed files on the recently planted trees along roadways and facilities. Working with facility or road managers, after the first year or two of growing in the landscape, foresters will then go out and do the young tree pruning on the Hennepin County owned properties. This continued practice will enable these trees to be free of some common defects that lead to tree issues and high costs when older. This will also result in lower tree mortality from branch tear-outs and lower pruning costs.

Objective 3.2: Protect mature trees

Facility large tree pruning

The facility tree pruning initiative was created in 2019 to initially prune all trees on county facilities and establish a schedule for regular ongoing pruning. A pruning schedule will help spread future pruning costs over a four to five-year period. Facility Services and Environment and Energy shared the pruning costs for the initial tree pruning. From the fall of 2019 through early 2020, trees at 24 libraries and two other facilities were pruned.

In 2021, pruning began on seven facilities that had not yet been pruned. These 9 facilities complete the first round of pruning. Now that all the facilities have been pruned, in the winter of 2023, the first round of the pruning cycle will begin.

With the trees pruned, there will be fewer instances of limb breakage. This strategic pruning promotes tree health and public safety while reducing the risk of catastrophic tree loss and debris on the grounds.

Diseased tree inventory

Every August, Hennepin County foresters inventory diseased trees within the rights-of-way along county roads for Transportation Operations. While the pandemic didn't allow for a full inventory to be conducted in 2020, county staff were able to adapt to these conditions and conduct a complete diseased tree inventory in 2021. Eighty-three trees were determined to be high priority hazard trees and were sent to Transportation Operations for removal during the 2021-2022 winter, along with ash removals. An additional 24 trees were identified for removal over the winter by STS.

Goal 4: Educate and engage residents to become stewards of the community forest

Objective 4.1: Educate and engage volunteers

Volunteer tree planting

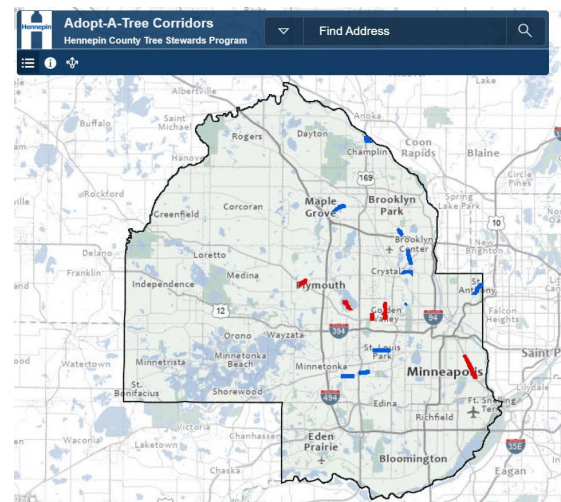
Before county-led activities became restricted again due to COVID-19 variants, Hennepin County's forestry program led the county in Returning to Volunteer. The Four Sisters Farm planting was held in the spring in Minneapolis along the Midtown Greenway in collaboration with the Hennepin County Railroad Authority, and the Native American Community Development Institute.



Volunteers at Four Sisters Farm planting

Adopt-a-Tree program

Hennepin County Forestry staff partnered with Public Works IT and GIS staff to develop the Adopt-a-Tree program and web-based application. Volunteers sign up to adopt a corridor with a recent tree planting (similar to the county's Adopt-a-Highway program), and walk the corridor monthly, using the application to alert forestry staff of any trees needing attention. The program's purpose is threefold: engaging Hennepin County Tree Stewards in a way that is safe and socially distant, easing the burden on county staff to monitor trees across the county, and to strengthen relationships with partnering communities.



Objective 4.2: Educate and engage youth

In addition to the Healthy Tree Canopy Grant, forestry staff served in an advisory role with several Good Stewards Grant projects. Grant partners can utilize staff as a resource for technical knowledge as well as guidance on designing educational programs. Similar to 2020's success at Voyageur Environmental Camp, several schools will be working over the 2021-2022 winter with county staff to develop Tree Trek programs of their own.



Example of Tree Trek educational signage

Objective 4.3: Educate and engage residents

Hennepin County foresters worked with community organizers to participate in the Prospect Park Garden Walk event. County staff led residents on an educational Tree ID walk with a Q&A component. In addition, forestry staff created an educational Tree ID Scavenger Hunt for those who were unable to attend the Tree ID walk to participate in during the 4th Street National Night Out.

Objective 4.4: Foster effective partnerships

Partnerships are an important part of the Hennepin County Forestry program. These partnerships allow for relationship building across government entities and the community at large.

Currently, the Foresters are working with the Minnesota Pollution Control Agency to act as either the program lead or mentors for this year's Minnesota GreenCorps cohort. In doing this, the foresters build relationships with the service members and their host sites.

Forestry also continues to hold board seats on the Minnesota Shade Tree Advisory Committee and the Minnesota Shade Tree Short Course. Both allow for the Hennepin County Forestry's voice to be heard in the future path for Minnesota's urban forestry and educational opportunities.

Contact information

Hennepin County Environment and Energy
701 4th Avenue South, Suite 700, Minneapolis, Minnesota 55415
hennepin.us/trees
trees@hennepin.us

