HENNEPIN COUNTY
MINNESOTA

Community forestry progress report

2023

Hennepin County Environment and Energy

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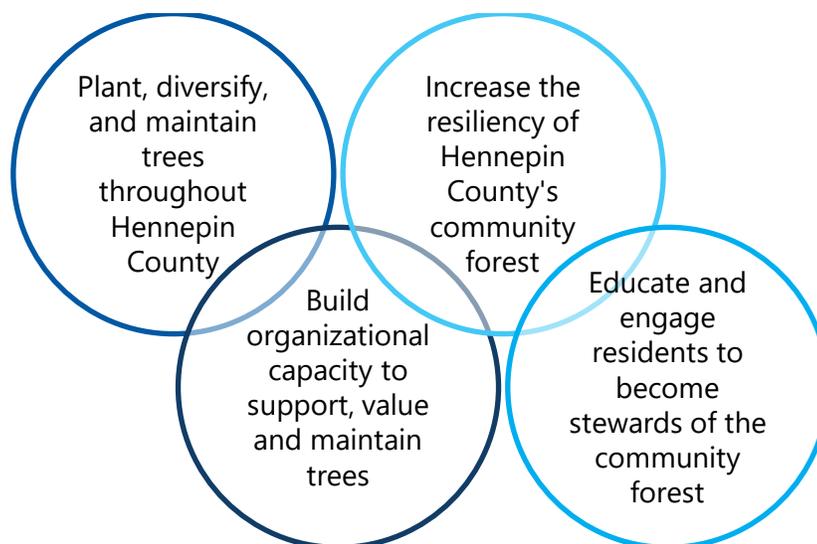
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Introduction

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 2023.

Plant, diversify, and maintain trees throughout Hennepin County

Increase the resiliency of Hennepin County's community forest

Build organizational capacity to support, value and maintain trees

Educate and engage residents to become stewards of the community forest

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

Objective 1.1: Plant more trees on Hennepin County properties

In 2023, the Hennepin County forestry program planted 1,638 large bareroot gravel bed trees throughout the county. For the first time the program also undertook large scale seedling plantings, resulting in 25,375 seedlings planted. Sixty-four different species were planted to maximize tree canopy diversity and resilience, including climate adaptive species such as dawn redwood, London planetree and black gum. These trees generally have a more southern range but are being planted locally as the climate warms. Trees were planted by Hennepin County foresters, Sentencing to Service (STS) crews, and internal volunteers.

Locations	# large bareroot trees planted in 2023	# seedlings planted 2023	Total trees planted in 2023	# total trees planted since 2015
Facilities	161	8,600	8,761	10,002
Rights-of-way	860	1,000	1,860	6,223
Partner Cities	57	425	482	482
Three Rivers Park District	78	0	78	78
MnDOT rights-of-way	0	0	0	77
Regional Railroad Authority	18	500	518	600
Easements	204	11,175	11,379	11,832
U.S. Fish and Wildlife Service	20	3,400	3,420	3,420
Other	240	275	515	1,527
Total	*1,638*	*25,375*	*27,013*	*33,772*

Facilities

In 2023, Hennepin County forestry planted 173 large bareroot trees and 8,600 seedlings at Hennepin County facilities. This included undertaking what was perhaps our largest facilities projects to date. County foresters, in partnership with STS crews, the Productive Day program, and additional Hennepin County Environment and Energy staff removed over an acre of woody invasives and replanted with native tree species. As part of the ongoing restoration of the natural area landscape at Hennepin County Public Work's Medina facility, Hennepin County forestry planted 8,600 seedlings as well as 16 larger bareroot trees, representing 11 different genus and 13 different species.

We were also able to plant 52 trees as part of the NorthPoint reconstruction, finally completing this long-awaited landscape project. By providing these trees in-house, Hennepin County saved $34,000.
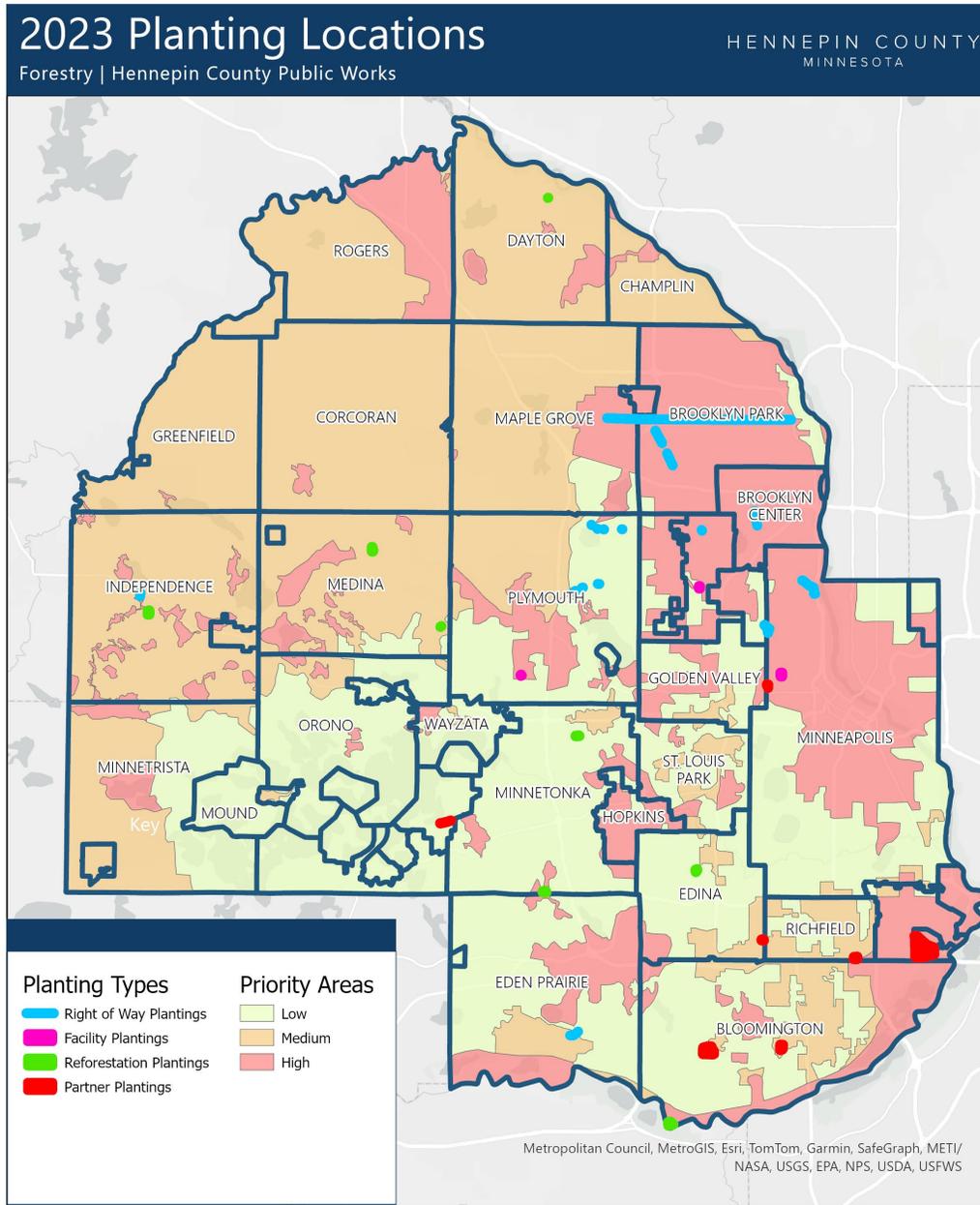
The Hennepin County forestry program also was tasked with removing and replacing trees at the Medical Examiners facility. This year, we removed a handful of trees that failed to survive the winter and replanted with 48 additional trees of a wide variety of species.

There were also 57 additional scattered replacements or plantings at the Adult Correction Facility, Ridgedale Library, and Rockford Road Library.

When compared to an average per tree cost of $750 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 $77,850 in 2023.

Rights-of-way

A total of 860 large bareroot trees from the county's gravel bed nursery were planted on various sites along county roads in 2023. This includes corridor tree plantings in Brooklyn Center, Brooklyn Park, Maple Grove, Minneapolis and Plymouth. Many trees planted in 2023 were in high priority planting locations (see map below). The image depicts the 2023 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. In 2023,1,000 seedlings were installed on right of way sites to provide screening in one case and improve shoreline habitat in another.

2023 Planting Locations
Forestry | Hennepin County Public Works

HENNEPIN COUNTY
MINNESOTA

ROGERS

DAYTON

CHAMPLIN

GREENFIELD

CORCORAN

MAPLE GROVE

BROOKLYN PARK

BROOKLYN CENTER

INDEPENDENCE

MEDINA

PLYMOUTH

GOLDEN VALLEY

MINNEAPOLIS

ORONO

WAYZATA

MINNETRISTA

ST. LOUIS PARK

MOUND

MINNETONKA

HOPKINS

Key

EDINA

RICHFIELD

EDEN PRAIRIE

BLOOMINGTON

Planting Types
- Right of Way Plantings
- Facility Plantings
- Reforestation Plantings
- Partner Plantings

Priority Areas
- Low
- Medium
- High

Metropolitan Council, MetroGIS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

Publication date: 1/4/2024   Data sources (if applicable):

Hennepin

Figure 1 - Sites planted by Hennepin County foresters in 2023, 860 of which were on rights-of-way

In 2023 the county completed its largest single right-of-way planting to date, on county road 109 in Maple Grove and Brooklyn Park. The nearly six-mile planting took place in high priority areas and 457 trees were planted. 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 $750 charged by an outside landscaping firm, planting trees from the county's gravel bed nursery saved the county's Transportation division around $285,000 on this planting alone.

Foresters received permission to plant on more underutilized MnDOT rights-of-way in high priority planting areas in 2023. This permission will make it possible to conduct a rights-of-way planting in North Minneapolis along Interstate 94 in the spring of 2024.

The remaining county right-of-way sites were chosen to address specific corridor needs, including replacing ash trees that were removed proactively because of the threat of the 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

The gravel bed performed as intended in 2023. The root systems were vigorous, and the trees thrived. We had no issues with installation nor removal of the trees. To facilitate ease of installation and removal, a skid steer was added to our nursery operations. Plans are also underway for a gravel bed expansion in 2024.

An example of fibrous root growth from the gravelbed

Objective 1.3: Expand programing to increase tree canopy cover

Tree sale

Building on our success in 2021 and 2022, the seedling sale continued to expand in 2023. As part of its role as a Soil & Water Conservation District (SWCD), the county sold about 6,000 seedlings to residents. This nearly doubled the amount sold in 2022. 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 program, Hennepin County is increasing the amount of trees available through the tree sale program in 2024.

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 2023, Hennepin County updated the tree inventory application and migrated it to new servers on Azure. Municipal partners continued to utilize the application, and county foresters gave demonstrations to additional communities who intend to utilize the app in 2024.

St. Anthony Village tree inventory

Objective 2.2: Implement emerald ash borer preparedness actions

Emerald ash borer (EAB), an invasive tree pest from Asia that attacks and kills ash trees, has continued to intensify in 2023. In Minnesota, infestations have been confirmed in 46 counties. All confirmed counties are under quarantine, which prohibits ash tree waste from being transported outside of quarantined areas.

The Minnesota Department of Agriculture considers all of Hennepin County to be within the "generally infested area" of the state. There are 34 cities that have confirmed cases of emerald ash borer, although it is assumed to be present in all Hennepin County cities.
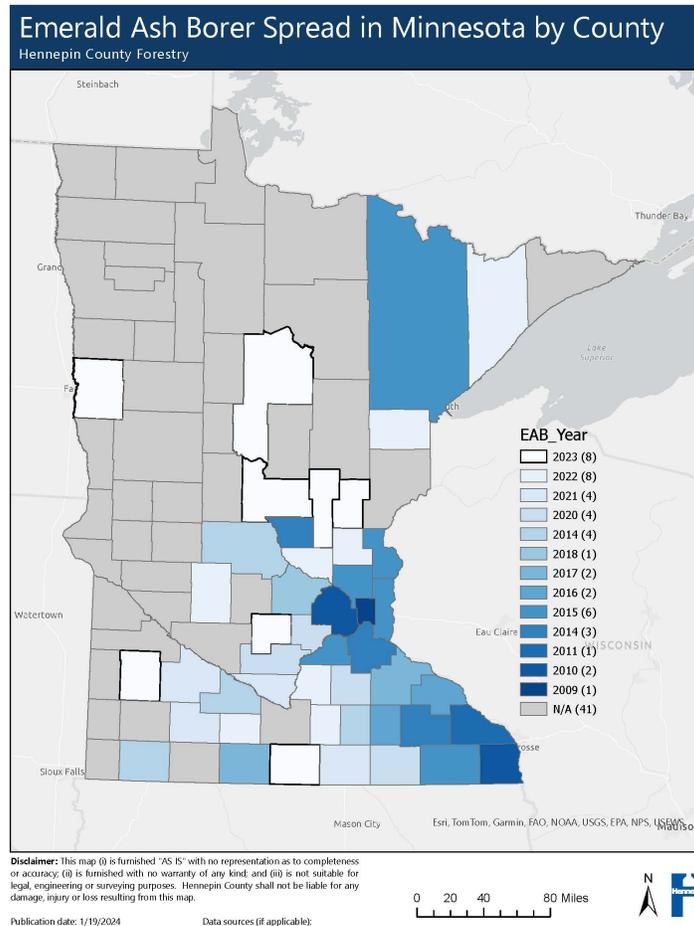
Figure 2 - Map of EAB in Minnesota

Hennepin County foresters continue to update the inventory of ash trees on county property. As of December 2023, there are 1,314 existing ash trees within the right-of-way along county roads. Transportation Operations assisted with removal of infected trees during the 2023 to 2024 winter. Proactive removal of infected trees before they become hazardous is necessary to reduce the overall removal costs and eliminate threats along county roadways.

In response to a growing need for funding to remove infested trees on properties owned by residents with low incomes and along the Hennepin County rights-of-way, the forestry unit applied for multiple grants in 2023 and was awarded two. The first of which was a $10 million Urban and Community Forestry grant(External link) from the U.S. Forest Service to remove diseased trees, plant trees, educate residents, and support businesses and workforce development. The project will improve resilience to climate change, pests, storms, and extreme heat events. With the grant funding, Hennepin County forestry will help homeowners with low incomes get trees removed and replaced from their properties.

County foresters will also educate residents about tree care and the benefits of trees. This funding addresses a significant need identified by community members as the emerald ash borer has swept through the county. Cities and other entities within the county that also received Urban and Community Forestry grants include: The City of Minneapolis ($8 million), The City of Richfield (nearly $500,000), Great River Greening ($10 million), and The University of Minnesota ($1.7 million). The second grant award was for $500,000 through the Minnesota Department of Natural Resources and will be used exclusively on diseased and infested tree removal and replacement along the Hennepin County rights-of-way.

Objective 2.3: Continue the Healthy Tree Canopy Grant Program

In October 2023, the Hennepin County Board approved twenty-five 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 2023 approved grants include thirteen cities, two affordable housing providers, and ten schools and nonprofits. Eleven of the twenty-five recommended grants are located entirely within moderate and high priority planting areas or contain canopy deficient areas.

Additionally, fifteen projects from previous grant rounds were completed in 2023.

Objective 2.4: Protect and increase trees on Hennepin County property

Hennepin County Forestry is a 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.

One new tree preservation measure, introduced in 2023, aims at assigning a tree preservation score for all trees involved in new transportation and facilities reconstruction projects. This consists of creating an inventory of all trees on site that may be impacted by project construction activities, and assessing them for factors like size, health, location, etc. This information is used two ways. Firstly, this allows staff to quantify benefits that each tree provides. Quantifiable benefits can include carbon sequestered, greenhouse gasses averted, stormwater intercepted, stormwater runoff avoided, and kilowatt hours saved. Secondly, the trees are then given a tree preservation number that can be used to make a compelling case to project managers for the preservation of high-quality trees on each site. We look forward to using this new tool to help preserve trees on county projects going forward.

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. The ordinance is expected to be completed in 2024.

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

Landscape planning and improvement in transportation corridors

During 2023, Hennepin County staff completed final maintenance of the County State Aid Highway 81 (CSAH 81) corridor landscape that was installed in 2019 within the five-mile segment from the eastern city limits of Robbinsdale, through the city of Crystal, to the Interstate 694/Interstate 94 interchange in Brooklyn Park. Final maintenance activities included weeding, plant replacement, mulching, irrigation repair, trash removal and the repair of any vehicle damage to the landscape within the 14 medians and 3 intersections where new landscaping was installed.

Roadways are harsh environments for plants due to the high levels of salt applied during winter and extreme heat and drought in the summer. Hennepin County and a hired contractor maintained the landscape during the plant establishment period. Beginning in 2024, cites will be responsible for maintenance of these areas.

Median landscaping along CSAH-81

Environment and Energy staff participate on roadway design teams, advocating for stormwater green infrastructure practices, one of which is saving existing trees and planting new trees. When streets and county roads are designed, it's important to save existing trees as large trees are more efficient at sequestering and storing carbon and reducing stormwater runoff compared to smaller, new trees. Foresters inventory the roadway trees (type, size, and condition) in the reconstruction zone and supply the design consultant with this information. The tree inventory informs the design process.

Conservation easements

In the spring of 2023 Hennepin County foresters teamed up with other department staff to collaborate on the largest planting in the program's history. Over twelve thousand seedlings were planted in a large-scale reforestation project on a private land conservation easement. We created a video that summarizes the work that was done on this project and the importance of conservation easements. The first-of-its-kind project was a success, and other similar restoration projects are in the works for the next few years.

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 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.

Carbon credit sales

In 2023, Hennepin County entered into an agreement with Green Minneapolis to act as the project operator and facilitator of carbon credit sales. The carbon credits are generated from the newly planted right-of-way trees over the previous three years. These are then packaged and approved by City Forest Credits, and urban forestry carbon credit registry. Hennepin County's first project was approved and has now moved into packaging and sales. We expect the first sale to happen in 2024. The revenue generated from these sales will directly go towards the purchase and maintenance of trees on Hennepin County maintained property. Forestry intends to continue to package right-of-way tree plantings for further sales to act as another revenue source for forestry activities.

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.

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.

The final facilities were completed in 2022 and the pruning cycle will begin in the winter of 2023/2024.

Diseased and hazardous tree survey

Every August, Hennepin County forestry surveys infested, diseased, and hazardous trees within the rights-of-way along county roads for Transportation Operations. A full survey was conducted in 2023 which identified 110 high priority disease trees for removal. Among these trees were 11 Dutch elm disease infested trees, 87 emerald ash borer infested trees, and 10 oak wilt infested trees.

As was the case in 2022, we continued to work in 2023 to clean up the diseased tree inventory to reflect current conditions. This consists of field truthing the presence of select trees to verify removal status. This process will be ongoing but has helped to improve the accuracy of the data contained in our tree inventory.

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

Objective 4.1: Educate and engage volunteers

Volunteer tree planting

Hennepin County's forestry team led two volunteer tree planting events in 2023. The first involved planting nearly 70 trees at Yorktown Park in Edina, and the second involved establishing an arboretum with over 45 newly planted trees and nearly 300 seedlings in North Minneapolis. There was a total of over 70 volunteer hours between the two tree planting events.

Tree Stewards

In 2023, a Tree Stewards class was held for the first time since 2019. Hennepin County partnered with the University of Minnesota and the City of Edina to hold a class that educated residents about proper tree pruning, planting, maintenance, and basic tree ailments. Both the county and City of Edina can call on these educated residents as a volunteer resource for opportunities in the future.

Fun planting trees at Homewood Park

Objective 4.2: Educate and engage youth

Through the Healthy Tree Canopy Grant program, forestry staff partnered with schools to educate youth throughout the county. Grant partners utilized staff as a resource for technical knowledge as well as guidance on designing educational programs.

A big achievement under this objective was work completed in partnership with Northside Safety NET. Northside Safety NET is an environmental careers exploration program designed to decrease the barriers to environmental careers for youth of color in North Minneapolis. Hennepin County and Environmental Initiative have been partnering on Northside Safety NET since its launch in summer 2021. Interns worked with Hennepin County to learn about the many facets of the work of an urban forester. They then helped lead the outreach, planning, and planting of a large 2-acre parcel in the Homewood Neighborhood of Minneapolis. The planting included 45 trees as well as Tree Trek signs that will be installed in spring 2024, to create an educational self-guided tour for community members.

Objective 4.3: Educate and engage residents

Hennepin County foresters tabled at many events in 2023 including BuzzFest, Minnesota State Fair, University of Minnesota Environmental Justice Expo, and Hamel Open House. Additionally, county foresters provided seedlings and educational materials to be distributed at BatFest and Eden Prairie's Arbor Day event. At these events, residents were engaged, provided with educational materials and tree seedlings, as well as information about county programs.

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.

Hennepin County hosts a monthly tree canopy expansion cohort meeting with municipal partners within the county. This cohort has been used to increase communication and cooperation between organizations, as well as giving communities a platform to voice their needs. These meetings have led to the inception of joint reforestation projects between the county and the cities of Edina and Minnetonka.

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 Green Infrastructure 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.

Hennepin County Forestry also has a position as subject matter expert on Clean Air Minnesota's committee on the Urban Heat Island Effect. This has allowed us to work with new partners and coordinate information and strategies related to the urban tree canopy.

Contact information

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