



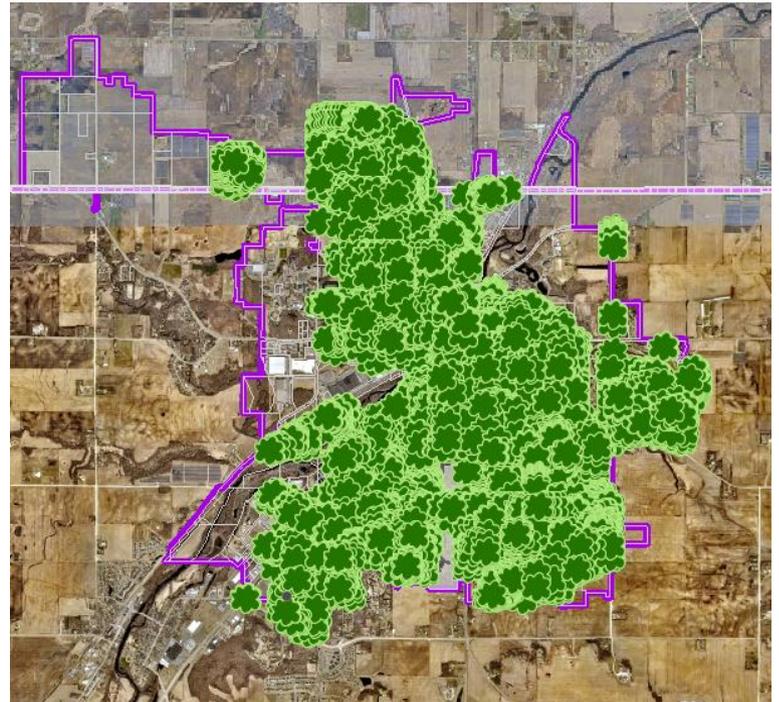
THE CITY OF
NORTHFIELD
MINNESOTA
ESTD. 1855

Tree Canopy of Northfield

ArcGIS Map of Documented Trees in Northfield



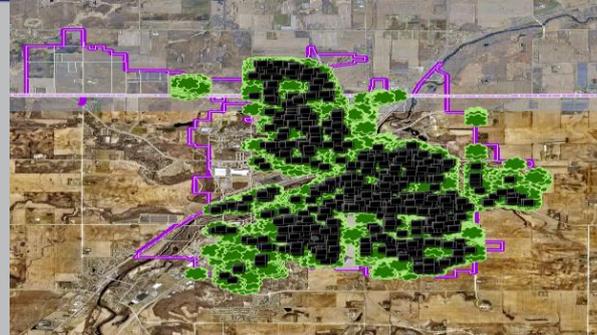
- There are 11,850 documented trees along the boulevards and in the manicured areas of the 35 parks (564 acres).
- 25% of the documented trees are updated each winter measuring their diameter, height, and health.
- Trees are not documented in the heavily wooded areas of the parks such as Hauberg Woods, Lashbrook Park, Sechler Park, Oddfellows Park, and George Rysgaard Nature Preserve.



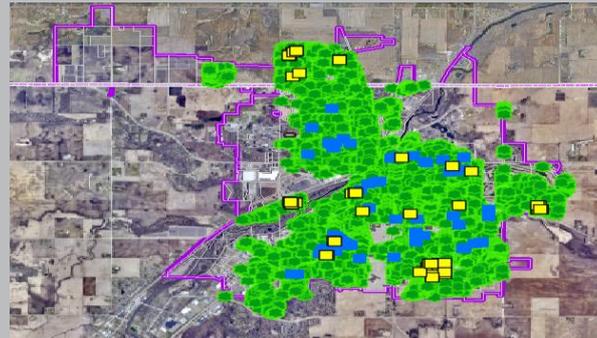
Ash Trees



- There are 1010 documented Ash Trees along the boulevards and in the parks.
- Emerald Ash Borer (EAB) was first discovered in Northfield in March 2023.
- Emerald Ash Borer causes ash trees to decline and die within 2 -5 years of being infested.
- 160 Ash trees along the boulevard (residents-70 trees) and in the parks (City-60 trees) have been treated with an injection of emamectin benzoate to protect them from Emerald Ash Borer. These trees will need to be treated every 2 years. Emamectin benzoate is 85%-95% effective.



■ Ash Trees

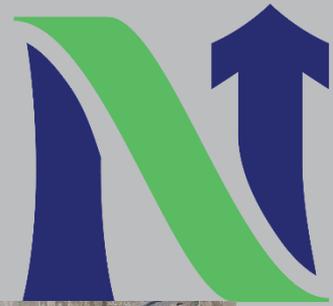


■ 2024 Treated Ash Trees

■ 2025 Treated Ash Trees

Minnesota Department of Natural Resources

EAB Grants



2021 Preparing for EAB Grant:

125 Ash trees were removed and replaced in 2022 (right of way and parks)

2024-2027 Shade Tree Bonding Grant:

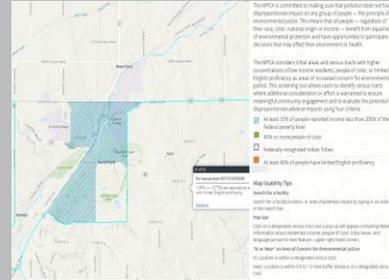
200 Ash trees (50 trees per year) are being removed and replaced in 2024-2027 in the right of way in the areas defined by the MPCA in 2023 as the Environmental Justice area.

2026-2027 Community Tree Planting Grant:

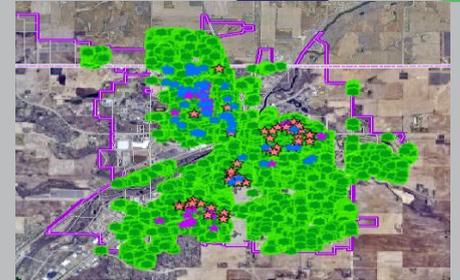
260 Ash trees (145 trees in 2026 and 115 trees in 2027) are being removed and replaced in the right of way and in the parks.

Tree Species planted:

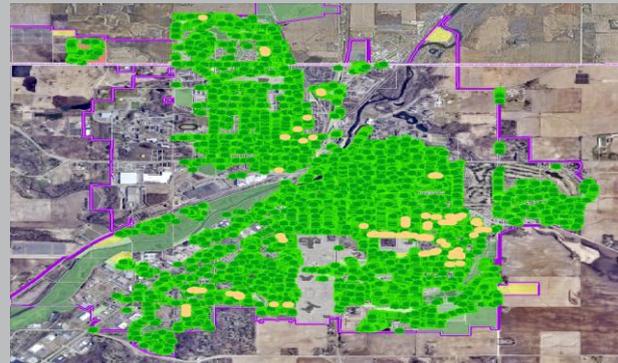
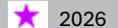
Climate adapted Urban Trees (recommended by the Minnesota DNR) including Serviceberry, American Linden, American Elm, Bur Oak, Swamp White Oak, Hackberry, Honey Locust, Ironwood, Kentucky Coffeetree, and River Birch are being planted as replacements.



2023 Environmental Justice Area



Shade Tree Bonding Grant



2026 Community Tree Planting Grant

Future Ash Tree Plan

1. Continue to seek funding/grants to help with removals and replacements
2. Staff will remove as many as time and accessibility allows
3. Operating Budget covers the removals by contractor

1010 Ash Trees

- 160 Treated (will not be removed if they are healthy)
- 100 will be removed with Shade Tree Bonding Grant
- 260 will be removed with Community Tree Planting Grant
- 69 will be removed with Engineering Construction Projects (2026-2030)

=421 Ash trees to be removed in the next 2-5 years

Approximate Cost: \$277, 860 (avg. \$660.00/tree contractor cost)

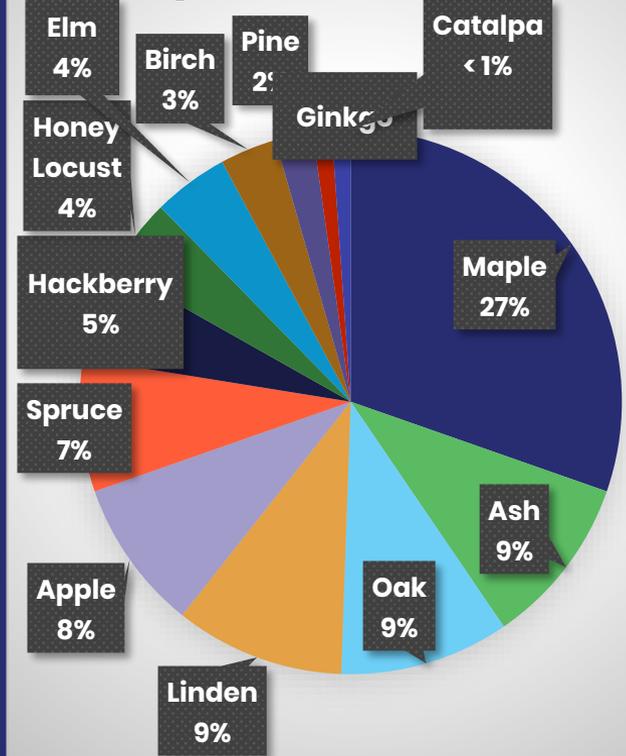
Northfield Tree Canopy Diversity

To increase the tree canopy diversity of the public tree population, it is best to follow the MN-DNR 20-10-5 Guideline:

- Less than 20% of trees are a single family
- Less than 10% of trees are a single genus
- Less than 5% of trees are a single species

Genus	% of Total Population (11,850)
Acer (Maple)	27
Fraxinus (Ash)	9
Quercus (Oak)	9
Tilia (Linden)	9
Malus (Apple)	8
Picea (Spruce)	7
Celtis (Hackberry)	5
Gleditsia (Honey locust)	4
Ulmus (Elm)	4
Betula (Birch)	3
Pinus (Pine)	2
Ginkgo	1
Syringa (Lilac)	1
Populus (Poplar, Cottonwood)	<1
Gymnocladus (Coffeetree)	<1
Amelanchier (Serviceberry)	<1
Sorbus (Mountain Ash)	<1
Prunus (Cherry)	<1
Juglans (Walnut)	<1
Ostrya (Ironwood)	<1
Magnolia	<1
Unlisted	<1
Crataegus (Hawthorn)	<1
Aesculus (Buckeye)	<1
Juniperus (Juniper)	<1
Cercis (Redbud)	<1
Carya (Hickory)	<1
Larix (Tamarack)	<1
Cornus (Dogwood)	<1
Salix (Willow)	<1
Carpinus (Beech)	<1
Catalpa	<1
Forsythia	<1
Nyssa (Black Tupelo)	<1
Abies (Fir)	<1

Northfield Tree Population (Genus)



Spring Tree Sale

- Bareroot and container grown trees purchased through Knecht's Nursery in Northfield and Cross Nursery in Lakeville are available for sale to Northfield residents in April.
- Trees species are selected based on the Minnesota Department of Natural Resources and the University of Minnesota recommended climate adapted species lists. This year Maple trees will not be available due to being over the recommended 10% (Genus) tree canopy diversity guideline.
- Residents can request help with planting the trees purchased. A small volunteer group is usually available to help with tree planting during the Love Our Community event in May. In the past, there was a larger volunteer group available to help with planting all the trees purchased during the tree sale.
- 50 to 75 trees are purchased through the tree sale each spring.



2026 Tree Sale		Quantity Available
River Birch, 1 ½" (Bare root)	\$61.95	10
Blue Beech, #7 container	\$129.00	5
Coffeetree, Espresso 1 ¼" (Bare root)	\$87.95	5
Crabapple, Pink Spires 6' (Bare root)	\$36.95	10
Crabapple, Royal Raindrops, #7 container	\$149.00	10
Princeton American Elm, 1 ¼" (Bare root)	\$61.95	10
Jefferson American Elm, #3 container	\$89.99	10
Hackberry, #7 container	\$129.00	10
Honey Locust, Northern Acclaim (Bareroot)	\$64.95	10
Linden, Boulevard 1" (Bareroot)	\$54.95	10
Bur Oak, #3 container	\$99.00	10
Northern Red Oak, 1" (Bare root)	\$61.95	10
Regal Prince Oak, 1" (Bare Root)	\$63.95	10
Swamp White Oak, #7 container	\$119.00	10
Swamp White Oak, 8' (Bare root)	\$54.95	10
Serviceberry, Autumn Brilliance, 6' (Bareroot)	\$59.95	10

Sustainable Tree Diameter Distribution

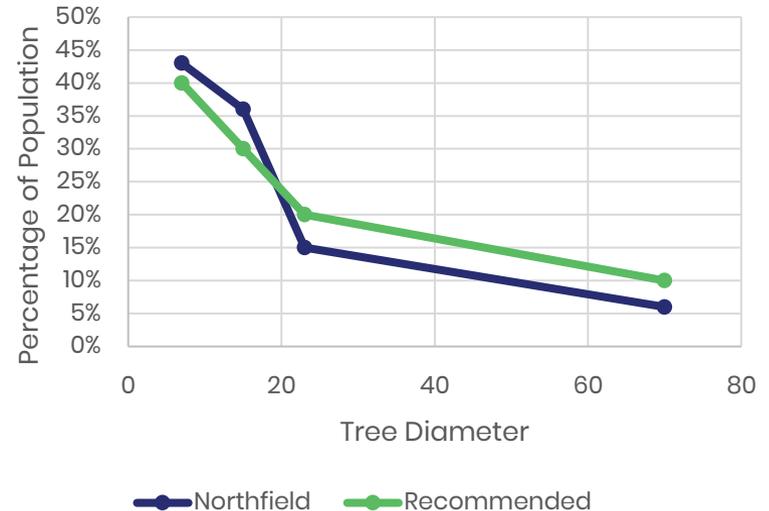


- Following the Richards' (1983) model for urban forest structure which ensures long term stability and continuous flow of the ecosystem, a healthy urban forest should have the following proportions:

- Small trees (1–7-inch diameter) : 40% (Northfield:43%)
- Medium trees (8–15-inch diameter): 30% (Northfield: 36%)
- Large trees (16–23-inch diameter) : 20% (*Northfield: 15%)
- Very Large trees (over 24-inch diameter): 10% (*Northfield: 6%)

*These numbers are lower due to the recent ash tree removals which have an average diameter of 17-inches.

Sustainable Tree Diameter Distribution



Tree Care

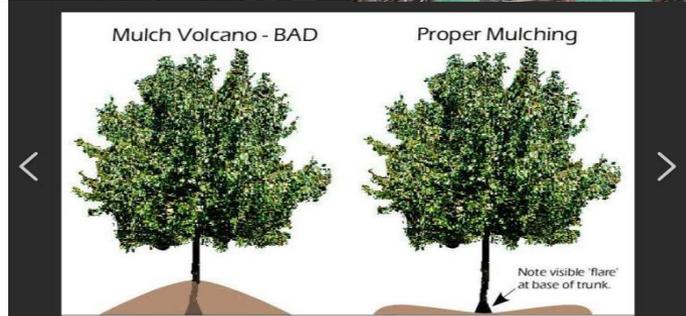


- **Watering:** Once the ground is thawed, watering of young trees may begin before the leaves come out, especially if it was a dry winter. Additional watering is beneficial if trees do not receive at least 1-inch of rainfall per week especially in the first 3 years after planting.
- **Inspection:** Trees are looked over for any damage, particularly along the trunk, decay, or broken branches from snow or ice. If the tree appears dead after the winter, trees are not removed until after mid-June as some species such as Honey Locust and Coffeetree are slow to break dormancy.
- **Mulching:** Mulch is added as needed around some of the young trees. A ring of mulch that is 4 – 5 feet in diameter, is 2 to 4 inches deep, and at least 2 inches away from the trunk (think donut) is applied. This helps to retain moisture and reduce weeds.
- **Pruning:** Broken, dead, and fallen branches that are caught in the tree are removed during the growing season. Pruning of anything else is avoided to prevent disease and insect issues. The best time to prune most trees is November 1st through April 15th



WHAT NOT TO WORRY ABOUT

- **Leaf Litter:** Leave the leaves! A leaf layer around the base of plants and trees can provide excellent habitat for beneficial insects and tends to break down quickly in the spring rains, adding nutrients for tree roots.
- **Fertilizing:** Don't fertilize trees unless you've had a soil test to determine what nutrients are missing.



Streets and Parks Tree Replacement Policy



- **6.07 BOULEVARD TREE MAINTENANCE POLICY**
 - **TREE REPLACEMENT**

- The City does not replace boulevard trees that are removed because of maintenance activities, severe weather, traffic/safety issues, or diseased trees unless authorized by another policy. The City has an annual tree sale for residents to purchase trees or residents may purchase approved boulevard trees from a private vendor. Property owner is responsible for replacement costs related purchasing and installing a new boulevard tree.

- **TREE MAINTENANCE**

- Boulevard trees that are dead, diseased, or present a hazard or a public nuisance will be removed. Removal of a boulevard tree shall include grinding the stump and restoring the boulevard using topsoil and seed. All limbs of trees or portions of limbs that overhang public streets, sidewalks or paths and are less than 10 feet above the surface of any public sidewalk or path or are less than 13 feet above the surface of any public street constitute a nuisance. Limbs that overhang a sidewalk or street shall be trimmed to gain proper clearance

- **5.03 INFRASTRUCTURE TREE REPLACEMENT POLICY**

- To maintain the health of the urban forest, any tree that is over 8 inches in diameter will be replaced with the project at a 2:1 ratio on infrastructure projects. For example, if 50 trees are removed for the project, 100 trees will be planted in the project area if space is available. If space isn't available, the City Horticulturalist shall identify locations where trees can be placed in other areas of the City.



Community Development Tree Planting/Replacement Policy



- (b) **Tree Bank Alternative.** Where the installation of replacement trees is not practicable due to site constraints, replacement trees shall be provided to the city or a cash payment to the city in amount equal to the replacement trees not installed shall be required as an alternative to the tree replacement standards in this section.
- (c) **Location of Replacement Trees.** Replacement trees shall be either planted on the lot or site where the protected tree was removed or, in cases where space on the lot or site is insufficient, the city planner may authorize the planting of the replacement trees on city-owned properties.
- **3.5.7 Street Trees Required. (this is for new subdivisions)**
- (A) At least one street tree shall be properly installed for each 40-foot length of right-of-way. There is an exemption to allow more distance based on the tree.
- **Parking Lot Landscaping Requirements** are required for small lots (14 spaces or less) and large parking lots (15 or more). Both types require landscaping around the perimeter of the lot. Only large parking lots have interior landscaping requirements. They both require a tree every 30 ft. around the perimeter.
- **Buffering Between Zoning Districts** occurs when a proposed use, addition or new building is constructed as part of a site plan review. Then you use the table to see what the zone is next to, and it shows which buffering type is needed.

Table 3.5-2: Replacement Tree Requirements

Caliper of Original Tree	Replacement Trees Required
12 to 17 inches DBH	One replacement tree for each protected tree removed
18 to 23 inches DBH	Three replacement trees for each protected tree removed
24 to 35 inches DBH	Six replacement trees for each protected tree removed
36 to 47 inches DBH	Ten replacement trees for each protected tree removed
48+ inches DBH	Twelve replacement trees for each protected tree removed

Table 3.5-4: Minimum Planting Requirements

Required Buffer Area	Minimum Trees (Deciduous or Ornamental) per 100 lineal feet	Minimum Evergreen Trees per 100 lineal feet	Minimum Shrubs per 100 lineal feet
"A"	3	None	10
"B"	0	3	10
"C"	3	3	12
"D"	3	6	18

Healthy Tree Guidance



1. LDC Chapter 34: Table 3.5-1: Species Diversity

Change "Species" to "Genus"

Change 33% to 10%

2. To prevent damage to sidewalks, do not plant Elm, Poplar, Freeman Maple, Silver Maple, Norway Maple, and Willow if they are less than 4 feet away.

3. Trees should be planted at the proper depth (root flare at surface), and root pruning should be done at planting to prevent girdling roots.

4. Trees should be given adequate spacing to grow based on the species.

- Narrow Canopy (20-35 feet mature width): 15-30 feet apart
- Wide Canopy (35 feet wide or more): at least 35 feet apart

5. Trunk guards are helpful to protect Crabapple, Honey Locust, Linden, and Maple for the first 2-5 years after planting.

6. Trees should be staked (if needed) for only 1- 2 years after planting

7. Adequate watering is important for the first 3 years.

8. Structural pruning is highly important in the first 10-20 years after planting.

Table 3.5-1: Species Diversity

Number of Trees Required on Site	Maximum Percentage of Trees that may be of a Single Species
7-19	33%
20-39	33%
40 or more	33%