



Growing Green Infrastructure: Tree Planting Guidelines for MSD Urban Reforestation Grant Recipients

Helping communities grow greener, healthier, and more stormwater-smart—one tree at a time

Trees play a vital role in managing stormwater and improving watershed health. Their canopies intercept rainfall, reducing the volume and velocity of water that reaches the ground. This natural interception helps minimize soil erosion and surface runoff. Tree roots also enhance soil structure and increase infiltration, allowing more water to soak into the ground rather than overwhelming stormwater systems. Additionally, trees absorb and transpire water, reducing the overall moisture load in the landscape. By planting trees in the right places, you're not just adding greenery—you're actively protecting your community's water resources. Thoughtful placement helps absorb rainwater, improves the quality of nearby streams and creeks, and strengthens the long-term health of urban watersheds. It also prevents future issues with infrastructure, ensuring your planting efforts remain beneficial for decades to come.

BEST PRACTICES FOR SELECTING, PLANTING, AND MAINTAINING TREES

This guide is for residents, neighborhood associations, cities, and community organizations participating in MSD's Urban Reforestation Program. As grant recipients, you are vital partners in strengthening the resiliency of Louisville's communities—your efforts directly contribute to healthier neighborhoods, improved stormwater management, and a more vibrant urban forest.

Tree Selection Guidelines

Choosing the right tree species is essential for long-term success in urban reforestation. Select species that suit your site and community goals. Native trees, for example, are adapted to local conditions, support biodiversity, and contribute to stormwater management by intercepting rainfall, improving soil infiltration, and reducing runoff. **All trees planted through the MSD Urban Reforestation Grant must be on Louisville Urban Forestry's [permitted tree list](#).**

- Native or well-adapted species: Support local ecosystems and require less maintenance.
- Diversity matters: Avoid monocultures—plant a mix to reduce pest/disease risk.
- Size at maturity: Consider height, canopy spread, and root extent.
 - Louisville Urban Forestry's permitted tree list sorts by Tree Size Type (height at maturity): A (50ft +), B (+25ft – 50ft), and C (10ft – 25ft).
 - Setback distance requirements will inform the allowable tree size type for particular locations.
- Purpose-driven selection: Consider shade, aesthetics, wildlife habitat, and stormwater benefits.
- Tree species to avoid: Avoid invasive species or those prone to breakage or disease in our region.

Need Help? If you're unsure about tree selection, placement, or care, consider consulting a certified arborist. You can find one through the [ISA \(International Society of Arboriculture\)](#) website, which offers a [searchable directory](#) of credentialed professionals in our area.

Selecting the Planting Location

Proper tree placement is essential to avoid future conflicts with infrastructure and to ensure long-term tree health and stormwater benefits. Thoughtful siting helps protect utilities, drainage systems, and built structures while maximizing the benefits of your planting.

Avoiding Utilities and Other Infrastructure

Before planting, **always call 811** to locate underground utilities. Be mindful of water, gas, sewer, drainage, and electric infrastructure when selecting your planting site. Minimum setback requirements for sewer and drainage infrastructure are provided below. For additional guidance on spacing and species selection near utilities, refer to the [Louisville Urban Forestry Street Tree Planting Standards](#) and [LG&E's Right Tree, Right Place guide](#).



Photo Credit: [Nashville Tree Conservation Corps](#)

Sewer and Drainage Setbacks

Tree roots love water—and they'll go looking for it—even if it means invading sewer or stormwater pipes and channels. These minimum distances aim to reduce the risk of sewer backups and drainage blockages caused by root intrusion: issues that become increasingly prevalent as trees mature (*see photos on next page*). You can help prevent these hazards by selecting the right tree size, species, and location relative to existing infrastructure.

At a minimum, plant trees at least the following distance from wastewater and stormwater infrastructure:

	Class A (50'+ at maturity)	Class B (25'-50' at maturity)	Class C (10'-25' at maturity)
Minimum Planting Distance*	12'	10'	7'

* Setbacks apply to point distances from catch basins and manholes and centerline distances from drainage ditches, sewer lines, and Property Service Connections. Planting trees in MSD easements is prohibited.

Please note: Visual observation is needed for infrastructure not marked by Kentucky 811 practices, such as ditches, swales, and catch basins. MSD's Urban Reforestation program **has stricter requirements for avoiding sewer and drainage** conflicts than those outlined in the city's guidelines. Please reach out to trees@louisvillemad.org if you are uncertain about the sewer or drainage infrastructure impacting your tree planting projects or have any questions about MSD's setback requirements.

Right-of-Way Considerations

Whenever possible, we recommend planting trees outside the public right-of-way to simplify maintenance and reduce permitting requirements. However, if you choose to plant street trees in the right-of-way, you **must obtain a permit** from [Louisville Metro Urban Forestry](#) and follow their standards, as well as the required minimum planting distances listed above.

Planning Tip

Before planting, sketch a simple site plan showing existing utilities, buildings, and proposed tree locations. This helps visualize spacing and ensures compliance with all guidelines.

By nature, trees are water-seeking, with roots that can extend far beyond a mirror of the canopy overhead. Trees planted too close to sewer infrastructure can cause odors, sewer backups into homes, and overflows to the environment. In addition to minimum utility buffer distances, a good **rule-of-thumb is to plant your tree at least as many feet away from sewer and drainage infrastructure as its expected mature height**. Use extra caution and ensure additional space when considering large, fast-growing trees that thrive in wet areas and are more likely to damage infrastructure.

Examples of increasing root obstruction as trees mature:



Trees planted too close to drainage infrastructure can cause localized flooding and blockages.

How to Plant Your Tree

Planting your tree correctly is one of the most important steps in ensuring its long-term health and resilience. A well-planted tree will establish faster, grow stronger, and provide greater environmental benefits over time.

Planting tips:

- Dig wide, not deep: Your planting hole should be 2–3 times wider than the root ball to allow roots to spread easily, but only as deep as the root ball itself. Planting too deep can suffocate roots and stunt growth.
- Prepare the roots: Remove any containers, burlap, or wire baskets. Gently loosen circling or compacted roots to encourage outward growth.
- Position the tree upright: Place the tree so that the root flare (where the trunk widens at the base) is visible at the soil surface. This helps prevent rot and promotes stability.
- Backfill with native soil: Use the soil you removed from the hole to backfill. Avoid adding fertilizers or soil amendments at planting time—they can disrupt root development.
- Mulch mindfully: Apply 2–3 inches of mulch in a donut shape around the tree, keeping it away from the trunk. Mulch helps retain moisture, regulate soil temperature, and reduce weeds.
- Stake only if necessary: Most trees don't need staking. If staking is required for stability, remove stakes after one year to prevent girdling and allow natural movement.

Tree Care: First 3 Years

Establishing a healthy tree starts with consistent care in the first few years. While every site and species is different, young trees generally benefit from regular watering, proper mulching, light pruning, and routine monitoring for pests or disease.

For detailed guidance on tree care, pest identification, and soil health, we recommend consulting these local resources:

- **Jefferson County Extension Office**
Offers expert advice on plant health, pest and disease diagnosis, and soil testing.
jefferson.ca.uky.edu/horticulture
- **Jefferson County Soil and Water Conservation District (SWCD)**
Provides soil testing vouchers, tree care workshops, and conservation support.
jeffcd.org

