NEWPORT
KENTUCKY

TREE PLANTING GUIDELINES

FOR NEWPORT VOLUNTEER GROUPS

HOW TO HOST A TREE PLANTING IN YOUR NEIGHBORHOOD

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FIRST, THANK-YOU!!

The City of Newport, like you, values its trees. We understand the services they provide to our community (see “Role of Trees” section, page 4) and have a set of tree canopy goals as well (see sidebar). We currently have almost 4,000 public trees along streets and in parks. We know the importance of proactive caring for these existing trees so we have them for the long term. For this reason, the majority of the city’s budget for trees goes to care for existing trees. So your involvement in efforts to continue planting new trees is important!

Tree planting projects truly wouldn’t be possible without the hard work and dedication of volunteers throughout the community, and we sincerely appreciate the opportunity to work with you all to make our city a better place.

PROCESS OVERVIEW

There are a series of steps that community groups must follow to implement a tree planting project. Our city arborists (contact information on first page) are available to work with your group. Each of these steps are explained in more detail in the following pages.

1 Obtain Permission

It's required to get permission from the city BEFORE planting!

2 Planning & Ordering

Next, set planting sites and choose trees. Site and species selection are especially important to consider in urban areas, where competition for space can create tough conditions for trees. City arborist can help.

3 Preparation Work

There are a lot of important preparation steps that come before planting day - organization of tree delivery, recruiting volunteers, marking sites, acquiring mulch, organizing planting day and more.

4 Planting Day

Consider inviting the city arborist or doing a planting demonstration before volunteer planting begins. Proper planting technique can go a long way to ensuring a healthy tree.

5 Encourage Continued Tree Care

Don't let alll your hard work go to waste! Encourage follow-up care like watering and proper mulching. Staking often isn't necessary, and pruning will be done by city arborists.

Watch Newport's Tree Canopy Grow!

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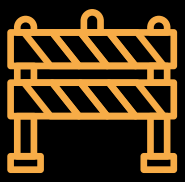
STEP 1: OBTAIN PERMISSION

Every public tree planting (see more in “Site Selection”) must be cleared with the city arborist prior to planting. This required to 1) confirm the tree species and sites selected won’t interfere with long-term management plans or public utilities, and 2) to add the tree to the City's inventory for monitoring, pruning, and other long-term maintenance needs.

Tree planting groups must also obtain permission from the adjacent property owner prior to planting, as some homeowners have concerns about having a street tree planted in front of their property.

Funding.
Many volunteer groups ask for a small donation, but this often doesn’t begin to cover the full cost of a tree. Grant funding, donations from small local businesses, and collaboration with other groups with similar goals may be opportunities to extend your reach.



POTENTIAL ROADBLOCK

"A TREE WILL DESTROY THE SIDEWALK AND RUIN MY PIPES. "

One of the things we hear often from homeowners is that they don't want a street tree because of the idea that a street tree will cause damage. Here is some information that may prove helpful.

PIPES. Studies have shown that tree roots do not break pipes. However, if there are cracked pipes present and water available, tree roots can move in and take advantage of that source of water and nutrients. Older clay pipes that break down over time are often the culprit. It is also worth noting that the majority of tree roots are located in the top 18” of the soil, while most pipes are located at least three feet below surface grade.

SIDEWALKS. The conflict between trees and sidewalks is constant. Shade is critical to a walkable neighborhood, yet can present challenges as well. The City of Newport instituted a policy on the minimum width of planting spaces, and is regulating all species selections. This will reduce the severity of these conflicts over time. It is also helpful to understand that sidewalks are engineered to last only 15-20 years. Once cracks occur and water and oxygen reach the ground under sidewalks, tree roots will move in, so it is often a combination of wear along with tree growth.

THE ROLE OF TREES: MAKING THE CASE

Given you're currently reading guidelines on coordinating a tree planting with the City, you probably already know many of the benefits of trees. However, the residents you speak with may not be aware. People cite many reasons for not wanting a tree - fears of tree failure, annoyances at fruit drop, concerns about who provides care to name a few. The list of services provided by trees might be helpful in these conversations.

- Lower Heat. Trees significantly reduce heat levels, which is a big factor in human health. They also lower energy bills (AC), which is especially important in low income areas (Toparlar et al. 2020, Bocheneck & Klemm 2020). This is critical to Newport as the climate continues to warm.
- Cleaner Air. Trees filter out pollutants (dust, soot, chemicals) from the air which has significant health impacts, including lower rates of asthma (Nowak et al. 2014).
- Reductions in Flooding, Cleaner Water. Trees absorb and slow down rainwater runoff, reducing flooding during and after storms. They also clean rainwater, resulting in cleaner water flowing into the Licking and Ohio Rivers.
- Better Business. Business districts with trees have shown to be more successful than those without. People are willing to spend 12% more and shop longer in areas with trees (Wolf 2005).
- Better Health. Trees have a significant impact on human health:
    - Heat reduction is a key role for trees in cities. More people die from heat related deaths over all other natural disasters combined (storms, earthquakes, etc.)
    - Trees have an impact on mental health, including less anxiety and depression, and positively impacts those with ADHD or autism (Annavarapu & Kathi 2016, Maas et al. 2009, South et al. 2018).
    - Higher canopy coverage resulted in more and better quality sleep (Astrell-Burt & Feng 2019).
    - Spending more time in places with trees increased academic success and creativity (Kim & Doo 2019, Sivarajah et al. 2018, Li et al. 2019)
    - Populations living in areas with higher tree canopy saw better birthweights and fewer preterm births (Braur 2015, Vieira 2015, Yin 2019).
    - Trees are associated with huge reductions in incidences of respiratory and cardiovascular disease, with health benefits across the United States valued at $6.8 billion for a single year (Donovan et al. 2013, Nowak et al. 2014).
- Removing Carbon. Trees absorb carbon from the air, helping slow climate change events (Heath et al. 2011, Gratani 2020).
- Less Crime. Areas with more trees have shown reductions in crime (Brunsun 1999, Burley 2018).
- Less Noise. A 100-ft wide tree buffer can cut noise from nearby highways significantly (Bentrup 2008).
- Wildlife Habitat. More trees means more wildlife - with increased tree density, even rare birds of prey may come to city spaces and provide more opportunities for learning (Mirski 2020). Additionally, Many tree species, like lindens (Tilia) and black gums (also called "tupelo," Nyssa), which you can find planted along some of our city streets, are important food sources for our pollinators (Sponsler et al. 2020).

STEP 2: PLANNING & ORDERING

The planning process involves getting sites selected and choosing and ordering trees.

SITE SELECTION

Depending on the location you would like to plant, there are some guidelines to be aware of. There are essentially two kinds of tree planting spaces that exist in public space, and thus require permission from the city arborist before planting:

Street Trees

Also called right-of-way trees, street trees are the ones planted in the space between the sidewalk and the street. This is often the most popular selection for public tree planting, and for good reason! While competition for space in this area is tight (between people, cars, utilities, and even trash cans), the advantage of adding shade for walkers and nearby homes makes the challenge worth it. The following parameters dictate planting location spacing in Newport:

- Stop sign - planted no closer than 30'
- Utilities - (water and gas) planted no closer than 5'
- Hydrants - planted no closer than 10'
- Spacing between trees - no closer than 20' for ornamental trees, or 30' for large canopy trees
- Planting spaces must be at a minimum 3' wide, and 8' long - but bigger is always better. National ADA requirements require that at least 4' width of sidewalk must remain to allow for wheelchair access.

Keep in mind that after a couple of years of establishment, the City Arborist will be pruning the trees for clearance - 8' over sidewalks for pedestrians, and 14' over roadways for cars and delivery trucks. Weeping trees do not work for street sites for this reason. Species selection is limited based on location (see also the guided illustration on the next page).

NOTE! Street tree plantings are especially important to start coordinating with the city arborist early, as there are many limitations, both in terms of respecting overhead space (powerlines), and for clearance (traffic/property clearance and maintaining sight lines for safe travel).

Other Public Spaces

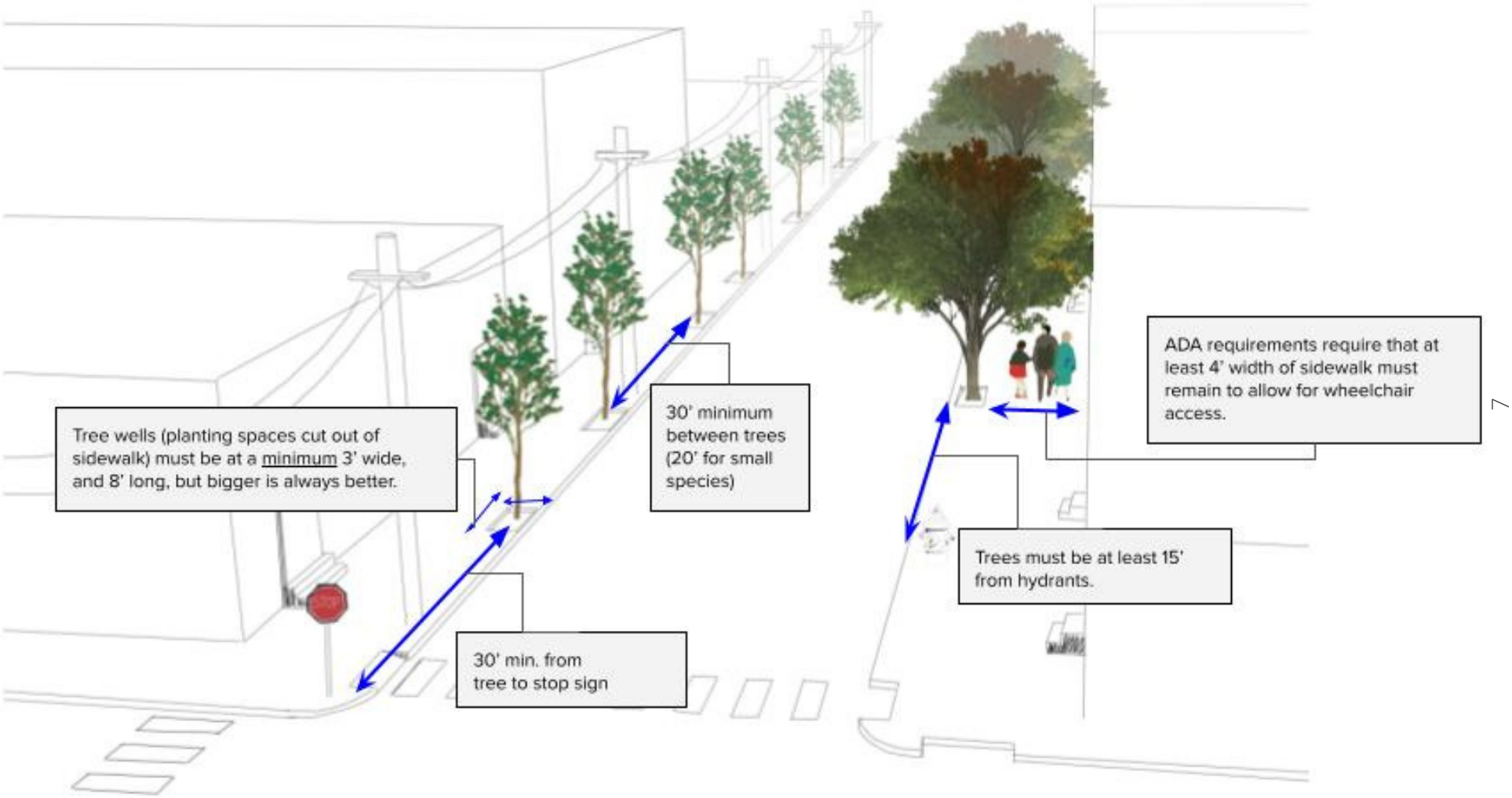
Tree planting can also happen in parks and other public spaces. However, it is important to keep in mind that planting trees in these spaces must have a responsible party for ongoing tree establishment care (watering, weeding, mulch) that makes sure the tree is cared for in early stages (ie: watered).

STEP 2: PLANNING & ORDERING

SITE SELECTION

Species should always be selected with long-term care and site conditions in mind. This is especially important for any street tree plantings, where space is at a premium.

First, check for overhead lines - if there is a primary electric line (photo below), only ornamental trees should be selected (typically trees that reach a mature height of 35 feet or less). Other types of lines, like the cable and internet service lines, won't result in topping the trees, so larger canopy trees can be planted (those growing to a mature height of 40 feet or more) underneath. It's also important to keep in mind the width of the tree for these tight spaces - some "small" trees grow much wider than tall, and may not be appropriate for tight sidewalks or busy roads.


Tree wells (planting spaces cut out of sidewalk) must be at a minimum 3' wide, and 8' long, but bigger is always better.
30' minimum between trees (20' for small species)
ADA requirements require that at least 4' width of sidewalk must remain to allow for wheelchair access.
Trees must be at least 15' from hydrants.
30' min. from tree to stop sign

STEP 2: PLANNING & ORDERING

TREE SELECTION

Once you have your locations selected, the next step is making sure the trees you select will fit the site conditions and not interfere with city infrastructure, as well as contribute to the long term sustainability of Newport's urban forest.

Diversity of species selection is one of the most important things you can do for the continued resilience of Newport's urban forest. This is important to forest resiliency because then no potential new pest or disease can impact a very large portion of our public trees (like we saw with loss of ash trees). We recommend striving for no more than 10% of any one species during planting, but understand that this may be difficult to do with larger projects.

Other than these site-specific limitations, we like to keep your options open as much as possible, in order to encourage as much diversity in species as possible. Therefore, instead of a "recommended tree list" we have a short list of species to avoid.

Prohibited Tree List

- Callery pears and other invasive species - A full list of invasive species at the Kentucky Invasive Plant Council website (https://www.se-eppc.org/ky/). In Newport, this can include callery pear, Tree of Heaven, Paulownia/Empress tree, mimosa, Siberian elm, and wisteria. Additional species can be found on the invasive species "watch" list and are discouraged but not yet prohibited.
- Ash trees - susceptibility to emerald ash borer
- Maples and tree lilacs - currently exceed diversity threshold, so we recommend choosing other species when possible
- Prohibited on streets, but permissible in parks:
    - Crabapples and mulberries - fruit debris on sidewalks can be a nuisance depending on variety. Some disease resistant/low-fruiting varieties of crabapple may be permissible.
    - Evergreens, like pines, spruce, and arborvitae - not ideal due to clearance issues.
    - Weeping varieties of trees - avoid due to inevitable clearance issues.
    - Heavy Fruiting trees - those such as walnut and hickory should be avoided along streets to reduce possibility of damage from fruit drop, either to pedestrians or vehicles. These trees would still be welcome in naturalized park spaces.
    - Cottonwood - better for naturalized areas.

STEP 3: PREPARATION WORK

Start Early!
A lot of preparation is needed prior to any volunteer planting, so it's important for planting organizers to start early, maybe even a year or more in advance. The City focuses its work on the care of existing trees, but may be able to provide some assistance along the way with community projects. Don't forget to consider the following:

S**cheduling.**
Fall is often the best time of year to schedule a tree planting for the tree root establishment; spring can also work for planting, but the heat of summer and frozen soils of winter can be avoided. Also consider the timing of other city or regional events and how that may impact the number of volunteers.

Marking Utilities.
Location of utilities should be marked as part of site selection, but definitely before any digging begins. Always call 811 before digging.

Concrete Cutouts in the Sidewalk.
If your project requires cutting out sections of the sidewalk to create a place to plant a tree, it is important to note that these often require extra time and/or funding. In the fall, the City is available on a limited basis to assist with sidewalk cuts, but is limited to ten (10) sites per project, and the City must be notified absolutely no later than July 15. The sidewalk wells will be backfilled with topsoil to eliminate trip hazards until planting occurs.

If you decide to plant in spring, the city cannot assist with the sidewalk work, but must be notified (at least 2 weeks in advance) as with any sidewalk work.

STEP 3: PREPARATION WORK

Stump Removal.
Stump removal typically only occurs in late fall/winter, assuming the weather cooperates (too much snow means no access to stumps and crews busy with snow removal). Email the city arborist if you aren't sure if your stump is on the list and want to be sure you're ready for the following planting season. Timeline on stump removal cannot be guaranteed.

Tree Purchasing.
The city arborist is available to consult on tree species or provide help in procuring stock from the nurseries.

Delivery/Distribution of Trees.
The City is available to help with distribution only for fall plantings only; trees should be delivered the Thursday morning prior to planting (assuming a Saturday event).

Tools & Supplies.
Make sure you have tools needed for the day of - shovels, rakes, brooms, gloves, pickaxe, wheelbarrows, etc. City will not pre-dig holes. You may should also order mulch and other soil amendments for the planting.

Post Planting Care.
Watering the tree immediately after planting is especially important for those roots that were just exposed. It's best to have a plan in place ahead of time to be sure the newly planted trees get watered.

Promotions.
Alert city to tree planting day to encourage greater participation - what other local organizations might be interested in helping you get the word out?

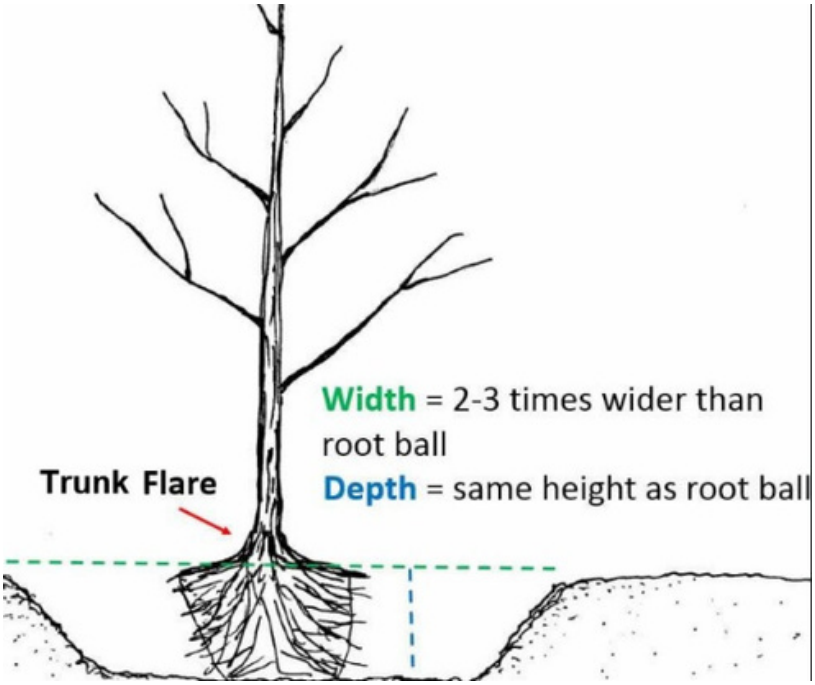
Other Event Items.
Volunteer events might include light snacks and refreshments. You might also want to do something fun like have an event t-shirt, bring theme music, or create fun name-tags for the trees after planting, or just designate a hang-out spot for afterwards.

STEP 4: PLANTING DAY

Hopefully by now you've done enough planning that, weather-willing, your planting event goes off without a hitch! Consider having the city arborist do a planting demonstration so everyone at the event knows how to properly plant a tree, ensuring the best possible chance of survival for every tree you've invested in.

HOW TO PROPERLY PLANT AND MULCH A TREE

Identify the trunk flare.
The trunk flare is where the trunk begins to widen into the roots at the base of the tree. Sometimes, nurseries pile soil on top of the root flare, and it's necessary to remove soil until you reach the flare. Once visible, you can use this to help determine how deep your hole should be, as the flare should be visible after the tree has been planted.



Dig a broad, shallow hole.
The hole should be 2-3 times as wide as the root ball, but only as deep as the root flare to the base of the container so the flare will be visible when you're done.

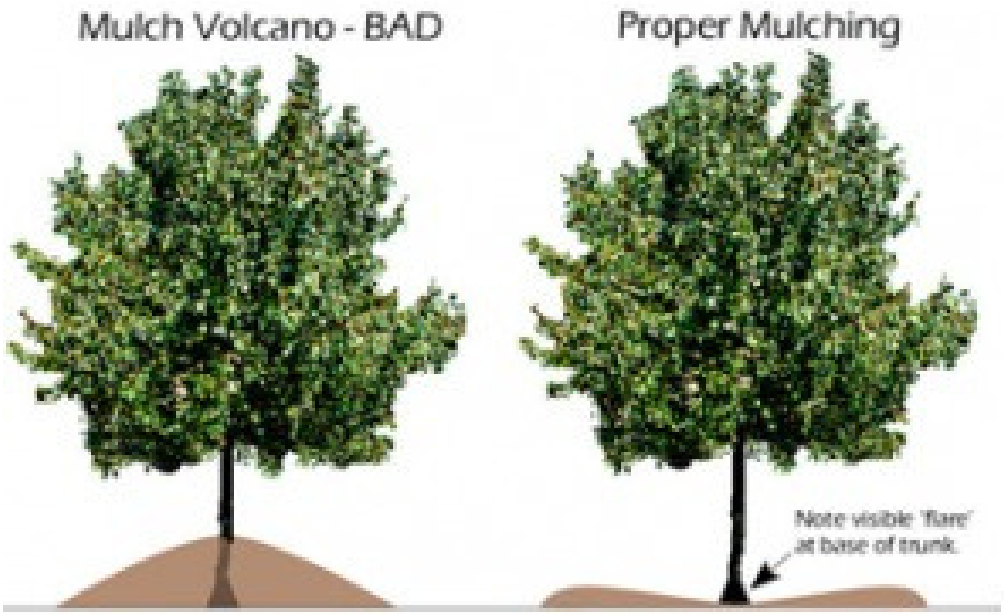
Remove the container and place the tree in the hole.
If, at this step you notice the roots are circling around the outside, you'll want to loosen them up so they don't continue to circle and eventually choke out the tree. Don't be afraid to cut any roots you can't loosen.

Straighten the tree.
Be sure to view from multiple directions! If you can, angle branches away from traffic.

Fill the hole gently but firmly.
You may need to pack soil underneath the tree first to stabilize it. Gently pack the soil to eliminate air pockets, but be sure to avoid stomping, which can lead to soil compaction. Fertilization should not be necessary and could accidentally burn your new tree. Limit pruning to broken branches only. *Important note: if expecting city to help with clean-up (fall planting only) DO NOT backfill containers with extra soil, as this makes them too heavy to move*

STEP 4: PLANTING DAY

Mulch the area around the tree.
Be sure to avoid a "mulch volcano", which invites decay on the trunk of the tree and prevents normal root development.



Water.
It is important to water slowly so the water can sink deep into the ground and help promote proper root growth, about 1 inch per week. Check the soil periodically to be sure it stays moist, watering more frequently in hot, dry spells. Some options for slow watering include a gator bag or soaker hose.

DON'T FORGET TO TAKE TIME TO APPRECIATE YOUR HARD WORK!!

STEP 5: ENCOURAGE CONTINUED TREE CARE

Watering.
Deep watering is the key, and should continue through at least the first three summers after planting. The easiest way to achieve deep watering is to set up a system where water can slowly drip into the rootball (vs. run off). This can be done in a number of ways:

1. Water by hand with a hose at a trickle. Set hose on trickle and leave it sitting on the rootball for an hour.

2. Buckets. Get a 5 gallon bucket, punch one or more small holes (1/8 inch diameter) in the side near the bottom. Simply fill the bucket and set it at the base of the tree so it drips onto the original root ball. Let it leak slowly.

3. Store-Bought slow/deep watering tools like Treegator® bags can be filled and let drip. Always remove these bags during winter as they can harbor pests and damage trunks, and reapply after the rainy season of spring. Continue to supplement watering for the first 3 years of the tree's growth.

Staking.
Only stake if necessary (it often isn't, unless dealing with bare root trees), using smooth or other non-wire attachments that won't dig into the tree. Trees should be loosely staked to allow for proper tree movement/development. Remove stakes after one year of growth and establishment.

Pruning.
No need to prune trees at planting time. Leave it to the city arborists and be sure that your tree is pruned properly.

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