TREE PLANTING

To give your investment the best possible beginning for a long and beautiful life in your landscape, please take time to become informed of the current recommended tree installation practices. This handout is a **brief summary** of proper tree planting procedures for deciduous and evergreen trees, as well as most shrubs.

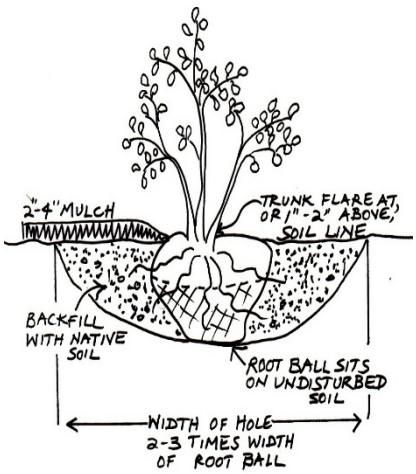
In addition to this handout, you may want to **review the source materia**l **at the end of this document**. The sources provide more detailed, research-based explanations and illustrations of proper planting techniques for both 'ball & burlap' and containerized trees.

Step One:
Call 811 to request a FREE underground utility locate before you start digging. It takes at least two business days for the utility company to send someone out, so plan accordingly. Call several days before you need to start work. For more details, go to https://digsafewashington.com/.

Step Two:
Find the root flare.
The what? The root flare is where the tree trunk meets the tree's first large, structural roots. The roots radiate outward from the trunk at an approximate 90-degree angle. Most 'ball & burlapped' trees accumulate excess soil piled on top of the root ball in the process of being dug up. If the tree is transplanted without unearthing the root flare, that excess soil will smother the tree. If a tree is unable to obtain oxygen through its roots, it will suffer decreased vigor and possibly die.

Step Three:
Before you dig the hole, remove excess soil from the top of the root ball, whether it be in a container or 'ball & burlapped'. This soil removal must be done to determine the correct depth of the planting hole. Remember, you will be digging only as deep as the root flare. You want **undisturbed soil** at the bottom of the planting hole so there is not settling of the soil after planting.

Step Four:
Dig a saucer-shaped planting hole approximately 3X the root ball diameter.
Why saucer-shaped?
Research suggests that a wide, saucer-shaped planting hole best supports rapid root growth. By creating sloped sides, the roots are directed upward and outward toward the higher oxygen soil near the surface. This allows the root system to grow up to 400% of the original root ball size before being slowed by the undisturbed soil. This amount of unhindered root development gets the tree off to a solid start and significantly reduces transplant shock.



FOR CONTAINER GROWN TREES
Step Five:
Remove the tree from its container and assess the root ball.
You're looking for any large roots that are starting to encircle the root ball, roots that have folded back on themselves ('j-hook'), and/or an overly dense root ball. Encircling & 'j' roots need to be removed before planting the tree because they will eventually girdle and kill the tree.

Please refer to the links at the end of this handout for more details.

Step Six:
"Shave and a haircut!"
To remove circling roots, the outside of the root ball should be shaved off. New research shows that the practice of shaving off about 1 inch of the outer periphery of the root system to *physically remove* the circling roots and overly dense roots, stimulates the development of new roots that will grow outward into the soil. (See source link for illustrations of this.) Once the roots are shaved, you're ready to plant. Place tree in the planting hole; check the tree from all angles to be sure it's straight. **Remember: the root ball should be sitting slightly *above grade* approximately one-two inches.**

FOR BALL AND BURLAPPED TREES:

Step Five: For B & B root balls, you will also create a sloped planting hole that is 2-3 times the width of the root ball. *With burlap intact*, place root ball in hole. Try not to lift with the trunk as a handle. Adjust the tree so the inside curve of any graft crook faces north. Check the depth of the root ball in the planting hole so it sits 1-2 inches above soil grade.

Step Six: Do I remove the burlap? Current research suggests best practice is to remove the wrapping (burlap, fabric, twine, wire basket, etc.) from *just* the **upper 12-inches** or upper 2/3 of the root ball, whichever is greater.
But *do NOT attempt to do this before the tree is in the hole*. Do not try to remove ALL the burlap, etc from the hole. After partially removing the burlap, if you find circling roots, shave off the outer 1-1½ inches of the root ball with a pruning saw and/or pruners; or remove these roots with a pair of pruners if the roots are very large.

CONTINUED: Instructions for BOTH B&B or CONTAINER GROWING TREES

Step Seven:
Backfill with the native soil you dug out of the original planting hole. It is **NOT recommended to add compost or other amendments into the planting hole**. Backfill halfway and gently water the soil to remove air pockets. Repeat filling and watering until the tree is firmly planted. Do **not** put any soil on top of the root ball. You just removed excess soil on top for better oxygen exchange for the roots. Don't put it back on.

Step Eight:
To stake or not to stake?
It is generally not necessary to stake your new tree. Studies show that trees develop a stronger root system if left to stand without stakes. If you do stake, remember to remove them after the first growing season.

Step Nine:
Mulch – To keep weeds and grass from growing near your new tree, you need to create a mulch 'donut' with compost or organic mulch. Create a four-inch-deep mulch berm around the perimeter of the planting hole, but NOT on the top of the root ball, root flare or touching the trunk. This mulch berm will help direct water to the root zone, suppress weeds, and protect the trunk from mechanical damage from mowers or weed whackers.

Step Ten:
Maintenance – for the next two growing seasons, water the planting hole so that the roots are encouraged to grow into it. Rule of thumb is approximately 1-2 gallons of water per inch of truck diameter every three to four days, depending on the temperature and wind. Water slowly so the moisture goes down into the root zone. Periodically, check the soil to determine if the soil is getting enough moisture, especially in very hot weather or if the tree seems to be 'flagging'. Using a trowel or hori-hori, carefully dig down about 6-8 inches into the planting hole. The soil should be moist after a watering session. You don't want either soggy or bone dry.
After two years, you will start watering less frequently and further away from the planting hole. Watering LESS frequently will encourage roots to seek deeper sources of water and be better able to tolerate summer drought.

BARE ROOT TREES: Bare root plants must be planted as soon as possible because they dry out quickly. Prune off any damaged, broken or overly long roots. Dig the planting hole wide enough to accommodate the roots. Don't bend the roots to fit the hole. It's a good idea to soak the roots in a bucket of water while you are preparing the planting hole. To help place the plant at the correct depth, create a cone of soil and drape the roots over this cone. Back fill with native soil, watering the soil as you go. Press down on the soil with your hands to create a firm hold. Don't stomp with your feet.

Recommended reading:

- Colorado State University Extension "The Science of Planting Trees"
  https://csfs.colostate.edu/wp-content/uploads/2024/01/The-Science-of-Planting-Trees.pdf
- Purdue University Extension 'Tree Installation: Process and Practices"
  https://www.extension.purdue.edu/extmedia/FNR/FNR-433-W.pdf

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