

~ Plant trees for beauty, shade, oxygen, to sequester CO₂, to slow runoff, and to add habitat ~

Tree selection websites:

treebenefits.com - Demonstrates the value of different tree species

www.extension.umn.edu/garden/yard-garden/trees-shrubs - UMN recommendations and species info

www.ci.brainerd.mn.us/docs/citycode/section1405.pdf - Check local codes

dotapp7.dot.state.mn.us/plant/faces/apps/main.jsp - Narrow down by characteristics

Evaluate your site:

Soil type - sandy, clay, or loam; compacted or loose; pH

Water retention - fast-draining or standing water

Hours of Sunshine

Wind

Height (overhead wires) and width (other trees or structures)

Call before you dig, to find buried utilities: It's the law! Dial 811 or www.gopherstateonecall.org

Some favorites for Zone 3:

Maples, Oaks, Elms, Linden, Birch, Bitternut Hickory, Ironwood, Evergreens

Choose disease-resistant varieties

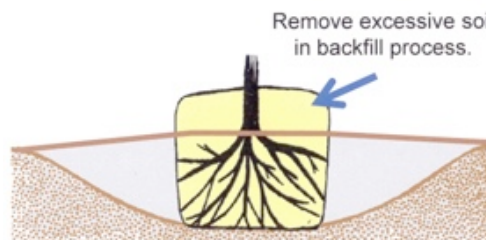
Buy only healthy trees - check roots, trunk taper, branch spacing and angles, leader, buds

Bare root - Cheapest, visible roots, vigorous, need immediate planting, lightweight

Container grown - Established roots, plant any time, watch out for rootbound

B&B (Balled & Burlapped) - For large trees, widely available, expensive, heavy, most of roots lost

~~~~~ THE FLARE: Where Root Tissue Meets Trunk Tissue ~~~~~



Planting depth is the most critical part of process. The root flare must be at ground level or slightly above. Deep planting causes root-girdling which will strangle the tree eventually. Healthy roots radiate out in all directions.

~~~~~ NO TELEPHONE POLE PLANTING! ~~~~~

Prevent circling roots:

Box cutting - Saw or cut root ball into a square shape. Deeply X or trim off the bottom

Root washing - Rinse off planting medium. Untangle and prune circling, damaged, or unhealthy roots. Spread out remaining roots

The Hole: Dig the hole only as deep as the roots (from the flare to the bottom) and at least three times as wide. Create rough, sloped walls. To maintain a solid base, don't loosen the soil underneath. For bare roots, create a slight mound in the center. For B&B, remove as much burlap and wire as possible. Remove planting medium to expose the flare.

~~~~~ MAKE SURE THE ROOT FLARE SITS AT OR SLIGHTLY ABOVE GRADE ~~~~~

Fill the hole with only the soil you dug out. DON'T IMPROVE THE SOIL BY ADDING ANYTHING!

Press firmly with your hands (no foot-stomping) and soak thoroughly to remove air pockets - add more soil if the level sinks, but keep the flare at grade.

Add amendments on top - container soil, compost, manure. No fertilizer, gels or magic additives.

Lastly, mulch well! Mulch prevents soil temperature extremes, conserves soil moisture, breaks down to release nutrients and improve soil structure, prevents erosion, reduces competition, protects from lawnmowers and trimmers, and creates a natural appearance. Use compost or wood chips, 3-4" deep, 3" from the trunk. Let water and air reach the roots.

~~~~~ DONUTS, NOT VOLCANOES! KEEP THE FLARE VISIBLE ~~~~~

Tree wrap prevents sunscald and critter damage. Wrap from bottom to top and remove in the spring.

Staking is not necessary for most trees. Bare roots may need some for one growing season. Let the tree move - swaying makes stronger roots and prevents spindly trunks and top heavy crowns.

Remove container stakes. Use as few stakes as possible, usually just one. Use flexible material around the trunk - rubber hose, canvas or burlap straps, soft, wide plastics, etc. No wire. Keep it loose and no more than 2/3 of the way up the trunk, well below the first branches.

~~~~~ STAKE TO PREVENT FALLING OVER, NOT TO HOLD THE TREE UP ~~~~~

Water the tree well, especially its first year. 5-7 gallons per week, but don't keep it soggy.

No pruning except for dead, damaged, or crossing branches.

### Resources:

[www.myminnesotawoods.umn.edu/wp-content/uploads/2009/12/sgr-book.pdf](http://www.myminnesotawoods.umn.edu/wp-content/uploads/2009/12/sgr-book.pdf) Stem-Girdling Roots,  
Gary Johnson & Dennis Fallon

[files.dnr.state.mn.us/assistance/backyard/treecare/howtoPlantTree.pdf](http://files.dnr.state.mn.us/assistance/backyard/treecare/howtoPlantTree.pdf)

[www.slideshare.com](http://www.slideshare.com) Planting Tree and Shrubs, Mike Maddox

[www.extension.umn.edu/garden/yard-garden/trees-shrubs/img/guide-stem-girdling-roots.pdf](http://www.extension.umn.edu/garden/yard-garden/trees-shrubs/img/guide-stem-girdling-roots.pdf)

[puyallup.wsu.edu/lcs/](http://puyallup.wsu.edu/lcs/) Horticultural Myths, Linda Chalker-Scott

[gardenprofessors.com/category/what-about-the-trees/](http://gardenprofessors.com/category/what-about-the-trees/)

[www.extension.umn.edu/garden/yard-garden/trees-shrubs/choosing-landscape-evergreens/](http://www.extension.umn.edu/garden/yard-garden/trees-shrubs/choosing-landscape-evergreens/)

[dotapp7.dot.state.mn.us/plant/faces/apps/main.jsp](http://dotapp7.dot.state.mn.us/plant/faces/apps/main.jsp)