PLEASE, WATER YOUR TREES DURING THE DROUGHT

It is imperative that we water our trees. Austin is facing an exceptionally bad time of high heat and drought that is killing hundreds of trees. Our trees have been in trouble for several years now. We are essentially in a four year drought, and we are now losing drought-tolerant, established and healthy native trees all over our area. We must help trees survive this drought.

Established native trees don't often require supplemental watering, except under drought conditions. Established trees need to be watered slowly and deeply, for about 90-120 minutes (depending on size), but only every 2-3 weeks, and only in the worst of summer conditions and/or drought. Water from June until probably September, perhaps longer, depending upon the drought. Young trees, from one to three years old, need to be watered once or twice weekly for about 10 minutes for the first three years to get established.

Trees are important: It is critical to help our trees because they provide significant ecosystem benefits. A large shade tree can reduce energy usage equating to 30% lower AC bills. Trees can increase the resale value of your property by up to 20%. Trees, even if stressed, can be saved with additional watering. The lack of water weakens and stresses trees, making them more susceptible to get diseases and insects, and even die.

It is expensive to allow a tree to die in your property. If a tree dies on your property, you will have to remove it because it will be a safety issue. The removal of a large tree can cost $1,000 or more. The cost of watering the tree from now until September is negligible in comparison. Trees grow very slowly, so they are not easy to replace. It's not as easy as replacing dead plants in your landscape.

Trees must be watered following City of Austin's water conservation guidelines. These guidelines are not meant to prevent watering your trees, but, instead are intended to water trees in an efficient manner, providing them just the right amount of water they need, during the right time of the day, to prevent run-off and wasting water.

City of Austin Water Conservation Guidelines are currently at Stage 2. This means that you can water with an automated irrigation system or hose-end sprinklers only before 10 am and after 7 pm in your assigned days of the week (Single family homes: Even addresses Sunday, Odd addresses Saturday; Commercial and multi-family: Tuesday or Friday). Hand held hose watering can be done any day.

HOW TO WATER TREES

Don't water the tree trunk, water away from the trunk, from ½ to the edge of the dripline. Typically, the roots of a tree extend to the dripline (and often beyond), and many of the important feeder roots run in the top 12 inches of soil. The dripline is, more or less, the area under the canopy. Please, see drawing below.

The roots need to receive water applied as evenly as possible to the outer section of the dripline because this is where the water will be most beneficial to the roots. The most active feeder roots are located in this outer section. It is ineffective to water the tree trunk, and this will eventually lead to fungus and decay at the base of the trunk, which will kill the tree.

METHODS TO WATER TREES

There are various ways to water trees. Choose the one that is best for your situation and location. Don't allow water to run-off, and check that enough water was provided to the tree.

Test to check that sufficient water is provided to tree, more or less evenly to the outer dripline: Make a small hole in the soil (move away the mulch or other material above the soil, and insert your finger) at the dripline, about 3-4 inches deep, and confirm that the soil is wet to that depth. If not, water for another 30 or 60 minutes. Check that the soil is wet at several spots in the outer dripline to make sure that the water was applied more or less evenly.

A couple of days after watering, look up at the tree canopy and check that the tree looks OK. If tree looks droopy and thirsty, you may need to water longer, or try a different watering method.

1) **Drip irrigation:** This is the most efficient method, and can be easily installed by the homeowner with kits that are somewhat affordable and can be automated (with a timer). The kits consist of a small plastic tube that you lay on the ground, and connect to your faucet.

   Place tube on the outer part of the dripline, around halfway between the trunk and the edge of the dripline, install on a spiral pattern for better coverage, place emitters to water as much of dripline as possible, as evenly as possible. Cover tube with a thin layer of mulch.

2) **Hose on the ground:** This is the simplest method and requires no further investment, but it requires you to change the hose to 4 locations around the tree, to be able to provide water evenly to the outer dripline section.

   Simply place the end of the hose, at a low water flow rate, on the ground. Place hose end underneath mulch or any other material above ground so that the water goes into the soil. Water for the amount of time described below. Move hose to another spot. Repeat. Since this process takes a bit more time and effort to water, remember that you can continue watering the spots that you missed later in the week.

   Optional: Metal or plastic bubblers are available for less than $10 to connect at the end of the hose, so that the water is more spread out.

3) **Soaker hoses:** This is a very simple method, but the amount of water delivered may be more localized than the other watering methods, depending on your soil type. To cover more of the outer dripline area, install the soaker hose in a spiral pattern, along the drip line, but away from the trunk. This method may require watering times longer than indicated below.

4) **Sprinkler on the dripline:** This method allows some water to be lost due to evaporation into the air, but it is a good method to water the tree if you have many trees and/or you can't move hoses around. Use an oscillating sprinkler (the kind that goes right and left, not the kind that projects water far away in a circular pattern), or a small ring sprinkler for smaller trees.

   Place sprinkler around ¾ of the way out from the trunk towards the dripline, and water half of the tree (see sketch below), move sprinkler to other side of the tree, repeat. Avoid watering the trunk. Don't try watering the entire tree at once by placing the sprinkler close to trunk. There will be a large shadow area behind the trunk that won't get any water, and the trunk will get very wet.

Note: Don't use pipes or wands stuck into the soil 12-24 inches deep because that is not where the tree roots are. Watering deeper than the top 12 inches will miss the active roots, wasting water.

HOW LONG TO WATER TREES

It's been so dry and hot that you will probably need to water longer the first time, and you may have to water again in 2 weeks. After that, you may need to water only every 2-3 weeks.

Watering time depends on the size of the tree, soil type and site conditions, and will vary depending on the method you choose to water and the water flow rate used. The idea is to provide 1 inch of water **slowly** to the roots of established trees. Water the tree deeply by watering at the slowest flow rate possible to allow it to penetrate the soil 3-4 inches deep. In general, follow the recommendations below, but check that sufficient water was applied, and if not, continue watering slowly. Figure out what works for your situation.

Avoid light frequent watering because this encourages shallow rooting which will damage the tree. It's very important to water with a slow water flow rate on slopes, compacted soils, and heavy clay soils to prevent run-off. A tree surrounded by sidewalks and asphalt will need more water.

1) **Young trees, water once or twice weekly:** Trees 1 to 3 years old need 10 minutes of watering. The younger the tree, the more frequently it will need to be watered.

2) **Established trees, water every 2-3 weeks:**

a) Trees up to 15 inches of trunk diameter need 5 gallons of water per inch of trunk. This is about 30 to 60 minutes when using a hose end at low water flow rate.

b) Trees larger than this need 10 gallons of water per inch of trunk. This is about 90-120 minutes when using a hose end at low water flow rate.

c) Exceptionally large heritage trees need 2-3 hrs.

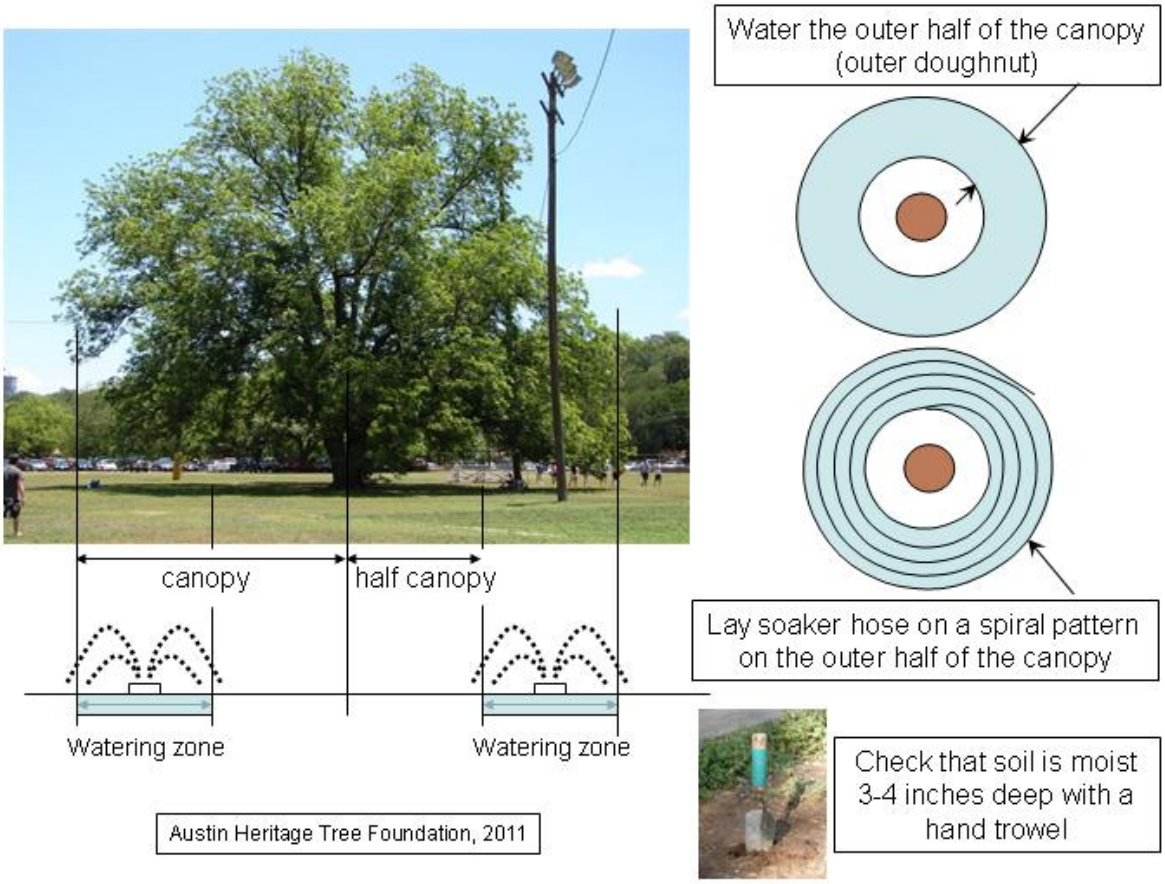
WHAT ELSE CAN BE DONE

- **Improve your soil and cover with mulch:** Clay soils retain water, be careful to not overwater. Sandy soils can drain too much. Adding composted organic material and organic mulch on the soil surface can help hold and prevent water run-off.

  Apply 3 inches of mulch, from 3 inches away from the trunk to the edge of the dripline. Don't apply mulch thicker than 3 inches because this makes it harder for water and nutrients to reach the roots. Trees with large canopies shade the grass and plants under the canopy, so instead of fighting to grow anything there, apply mulch to benefit the tree. Grass and plants under the tree canopy compete for nutrients and water with the tree roots, so try to mulch as much of the dripline as you are willing to give up. Any kind of organic mulch will do, but shredded hardwood mulch is preferred. In addition to preventing evaporation, mulch will decompose and work itself into the soil, enriching it and helping the tree roots. Mulch needs to be re-applied every 1-2 years.

Small rocks, gravel, glass and other "mineral mulches" are not good for trees because they don't provide nutrients to the roots and heat up the area. And they will need to be removed to apply mulch. These non-organic mulches are OK to provide drainage around cactuses and succulents, but please, don't use these near the trunks and on the driplines of trees.

- **Plant drought-tolerant native trees**. Plant large and long lived shade trees.
- **To avoid wasting water**, fix all leaks, check your hoses and connectors, and use a hose timer to shut off the hose if you forget.
- **If using recycled water**, make sure that it doesn't have soaps, chemicals, or too much salt because these will affect the tree. Some soap types are OK, but some are not.
- **To promote root growth** water twice as long during non-drought years.



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