

***“What follows are some specific ways to start saving water in your garden so that, when combined with other household savings, you can achieve the 19% mandate from EBMUD. It’s totally doable.” Peter Tourtellotte***

So I have 3 basic concepts to cover:

- To water LESS frequently but MORE deeply
- To Eliminate Waste
- To Embrace Change

Any one of these will help you save water but put all 3 into action and you’ll probably save more than 19%!

**The most important of these is to...  
Water LESS FREQUENTLY but MORE DEEPLY**

- This should be the easiest concept to implement, save you the most water and have the biggest impact on making your garden more self sufficient.
- The goal here is to encourage a deeper root system.



- When you apply water at the surface it is exposed to the elements and can easily be lost to evaporation before your plants even have a chance to use it.
- Deeper soils contain a more stable volume of water which is insulated from the drying affects found at the surface... so in a deeply watered garden the water is basically waiting for the roots to use it.
- I’ll be hammering home the concept of deep watering because the idea is to get the water down where you want the roots to grow and we want them to grow deep. Infrequent watering, on the other hand, is what makes them go searching for it – roots are smart, they go where the water is. So if there’s no water at the surface they’ll grow deeper to find it and that’s what you want.

- So let’s talk lawns for a bit, since they’re the biggest user of water in the garden, they’re also the easiest place to start saving water.

*“My lawn may not be the best lawn on the block but it’s perfectly green and I only water my lawn once a week. Because I water for hours when I do, it can even go longer if it has to.”*

- I think it’s a common misconception that lawns need daily water. While this is true when they’re first planted – the problem is often that time clocks get set and are never adjusted once the lawn gets established. Lawns are perfectly happy to soak up all that water, but just like the rest of the garden, lawns will develop deeper roots if encouraged to by allowing the surface to dry out a bit. You can save a bunch of water by changing how you water your lawn.

<b>Water LESS Frequently but MORE Deeply</b> “...add an extra day between waterings AND water about 50% longer”		
<b>Water:</b>	<b>for:</b>	<b>and save:</b>
every day	10 min.	wasteful & not recommended
every other day	15 min.	<b>25% over daily water</b>
every 3rd day	20 min.	<b>33% over daily water</b>
		<b>13% over every other day water</b>

- This table shows an example of how much water you can save by watering less frequently but more deeply. As you can see...

**If** you’re watering every day you can save more than 30% by switching to **every 3rd day for twice as long**. Even if you’re currently watering every other day you can still save as much as 13%.

**If** you’re already watering every 3rd day, good job but you too can still save about 9% by just adding another day between waterings and 15% to how long you water... you’ll have to do the math for your own situation but I think you’ll be surprised how much you can save.

- You really want to avoid shallow watering, 5 minutes every day will keep roots at the surface because that's where the water is. When you have a shallow root system, extreme conditions, one missed watering or a time clock failure while you're on vacation can all spell disaster.
- So how do you go about DEEP watering?

**1st you want to water slowly** enough to allow the water to penetrate. Try figuring out how long you can run your sprinklers before the water starts to runoff, then set your timer for something less than that and cycle through your stations multiple times so the water has chance to soak in. This way you're still applying plenty water but in a way that gets the majority of it to the plant without runoff or waste.



**Building basins** around your plants will also help if you are hand watering. They keep the water where you want it to soak in. This is especially important for new plants... basins allow you to soak the original root ball (which is where the roots are now) and the surrounding soil (which is where you want the roots to go). Water will always take the easy route, without a basin the water may just runoff or fly past the root ball wetting only the new loose soil – and your plant suffers.

**Another important thing to understand is how water moves through soil.** This is especially true with drip systems. Water moves down and out wetting a cone of soil so initially emitters should be

placed on top of the root ball, a few inches to the side and the roots will be missed. As roots grow into the surrounding soil, the emitters should be moved out to the drip-line and multiple emitters should be use to water all sides of the plant. Personally, I don't recommend drip systems because most people don't have the time to maintain them properly. Emitters clog, lines get tripped over and ripped out and most often they get run like a sprinkler system. Run a gallon per hour emitter for 10 minutes and you've got a teacups worth of water – not exactly deep watering. How water moves also varies with the soil type. Sand, Amended Soil, Loam and Clay all accept water differently. If you're like most of us, you have clay soil which accepts water very slowly so application techniques are really important so as not to waste water.

- A garden that has been established on frequent shallow water is another challenge. It needs to be **retrained** to develop that deeper root system we want. If this is you, every month you need to extend the time between waterings and water longer...but you can't just go cold turkey and switch from daily water to once or twice a week all at once. Roots need time to grow deeper, and they will, as you water less and less frequently. Within a year you should have a more self-sufficient garden that can be watered less frequently. Remember, **always** water deeply when you water – I can't say it enough.

### The 2nd basic concept is to ELIMINATE WASTE

- You'll need to assess and adjust how & where you're delivering water.
- The goal is to put the water where the plants can use it.
- Which means you should avoid over-spray onto pavement or other hard surfaces
- You should check all your sprinkler heads for breaks or clogs that can misdirect and waste water.
- You shouldn't water unplanted areas, you can save a lot of water by turning off individual sprinkler heads in those areas.
- You can also minimize water to established trees and shrubs... ideally you should separate them from your regular watering so you can soak them deeply and infrequently.

- You don't have to water your whole garden as frequently as your lawn and it's best not to.
- As I mentioned earlier, avoid runoff by cycling your system multiple times for shorter periods so the water has time to soak in.
- For your hoses use shut-off valves and watering wands to save water while moving from plant to plant around the garden.
- Manual shut-off timers like the **Dramm Water Timer** are great on your faucets AND, if you want to save water, electronic timers are a must to run your sprinkler system. Forgotten sprinklers are big water wasters.
- And finally, you can eliminate waste by watering early in the morning. This prevents evaporation and allows the water time to penetrate deeply before the temperature rises. Remember, the deeper the water, the more insulated it is.

### The final concept is to EMBRACE CHANGE

- Perhaps the most difficult to implement because it requires a concerted effort to monitor you gardens' water needs. There are fancy timers out there that take weather conditions and your soil moisture into account but unless you have one you'll need to be the monitor and adjust how much you water as conditions change.
- Seasonally your garden is going to need different amounts of water:

Spring and Fall will require moderate watering with the occasional skipping of scheduled waterings, if it rains or if it cools considerably you can save water by using your 'rain-off' button and skipping a cycle.

Summer, of course, will require the most water but you can still save water by running the 'Time to Wilt' test to determine how long you can go between waterings. Just water thoroughly and then monitor your garden to see how long it takes for things to start wilting. Wilting in the heat of direct sun is common for veggies like tomatoes and zucchini – if they don't perk up in the evening then it's time to water.

Winter, on the other hand, signals the time to turn your watering system OFF! We've all seen sprinklers

running on a rainy day. If it's particularly dry you can always run a manual cycle when you need to but it's important to turn your system off as soon as the weather changes in the fall. Remember, we're trying to save water at every opportunity.

- The weather we've been having recently is a good example of why we need to embrace change... last week it was a demanding 100 degrees and this week it's in the 70's and we should be saving water by skipping some watering cycles.

### I've talked a lot about established gardens... but what about new plantings?

- Well, the key for them is to treat them separately from the rest of your garden. There's no need to run your entire system more often, that's wasteful... just run that one station OR, better yet, water by hand for the 1st few weeks so you can be sure your plants are getting what they need. Remember, always water deeply and as infrequently as possible.

### SO... CONCEPTS TO IMPLEMENT TOMORROW

- Add an extra day between waterings AND water longer... in a few weeks, add another day and water even longer... do the math for your situation but ultimately you shouldn't have to water your lawn any more than twice a week so long as you are watering long enough for a deep soaking.
- Whenever you can, allow the soil surface to dry a bit between waterings, this will force roots to go deeper.
- Check your sprinklers for coverage and leaks and adjust accordingly.
- Get familiar with your timeclock so you can adjust is easily... learn how to cancel or initiate cycles, learn how to run just one station, learn to program cycles that repeat for deeper soaking, learn how to vary programs for different seasons... if your clock is just too complicated, a landscaper friend of mine thinks the **Iritrol Raindial** is the best. Easy to understand and simple to use at about \$125.

*Our thanks to Orchard Nursery Manager, Peter Tourtellotte, who created and presented this program in June of 2008.*