

Newsletter #2: Improving Irrigation System Efficiency

What you may not know about...

Water Conservation



What do we do when the irrigation program and the limits of the existing field equipment have been maximized?

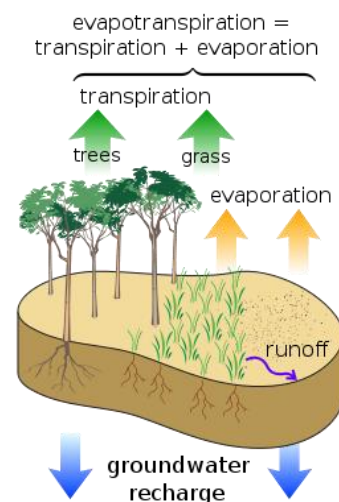
Most of the time, the first action recommended is to change out the irrigation controller for an ET ([evapotranspiration](#)) controller that can cost anywhere between \$3K to \$6K, but a 20%-30% reduction in water can be seen. However, the equipment in the field is still losing water through leaking equipment, under coverage, over coverage, and overspray. Even though the expensive ET controller can collect weather data daily, it cannot correct the water loss in the field. Additionally, the ET controller capabilities have just been disabled in areas where watering limits of one or two days have been placed.

Remember the base line that was established?

Here is where it starts to pay off!

As a starting point, which of the following systems wastes the most water: turf, shrubs, or trees? In order to assemble a working list, about 12 hours of field time is needed for every 36 station controllers (or 22 minutes per station) in order to collect the number of heads, radius, nozzle type, trajectory, and sprinkler body type of each valve. Once this information is collected, a list of corrective action can be assembled.

Let's take a look at sprinklers, for example, the type of issues



typically looked at are:

- Sprinklers with a **pressure regulator** and check **valve feature**
- Nozzles with rotating stream spray or emit water in large droplets with **appropriate trajectory**
- Sprinklers with the proper height extension for an **unimpaired spray pattern**

If these issues are addressed, you can see a **20%** to **30%** reduction on *each* valve because of the corrective equipment installed.

All properties have portions of landscape environments that have changed since they were first installed. This imbalance can lead to either increased water needs or portions of a valve being over watered due to a now-mature tree. These micro-environments can be handled in two ways:

- 1) The valve zone can be split into separate valves
- 2) The water output can be changed at the emitting point by reducing or increasing the GPM of that particular sprinkler. In the past, this was frowned upon. (Today, however, this *fine-tune-tinkering* must be done, as it is a cost-effective way to manage water).

Another action that can be taken is to discontinue either a portion of a valve zone or the entire valve zone completely.

**It is not recommended that drip irrigation and overhead spray systems be combined. These water delivery systems should always remain independent of one another.*

A quick savings would be turning off the tree bubblers. In most cases, these trees have become established and are pulling water from 5+ feet down in the soil. This zeroing out of the tree station on the controller can get up to a 5% reduction. Other areas to look at are the systems that use individual bubblers (not drip) at each plant. Replacing those bubblers with 1/2" caps where plant replacement has been put on hold, during the drought, will stop the watering of barren soil. Keep in mind that many of these targeted approaches can best be seen when partnered with your landscape management service provider.

Remember, the name of the game here is "partnering" in order to deliver the best use of limited water supplies!

Each property is different. Be aware that the Bay Area has **4** main climate zones (as outlined by [Sunset Garden](#)). Inside of these zones, each property has differing geographic location, topography, exposure, soil, architect design, development maturity, equipment, and property personality. It is clear to see that one-size does NOT fit all. This knowledge accentuates the need for the sharing of basic information with those that can do the most with it. So get those water bills to your landscape manager!

What's happening next month?

How healthy soil uses water more effectively! Stay tuned.

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