

Plan for **Zero Runoff** (even after converting to Drip)

Keep Water in the root zone.

Just because your new sustainable landscape has a more efficient irrigation system doesn't mean that the rest of your property should not benefit from the same principles. Observe the irrigation while running and check to make sure that no water is flowing onto sidewalks, patios or walkways. If the water is being applied too fast for the soil to absorb, runoff will occur whether you irrigate using spray or drip. Puddling and pooling also may be an indication that water is applied too fast or too often. Repairs to broken pipes, drip lines, and emitters should be made immediately, or the system should be turned off until repairs can be made. The optimal time to water is in the late evening and very early morning.



Install a “Smart” Irrigation Controller that automatically adjusts irrigation schedules in response to changing site and/or weather conditions; most of these interface with mobile devices and computers, so you can change the programs in your pajamas. ET (Evapotranspiration) controllers monitor weather conditions and Soil Moisture Sensors directly sample moisture in the soil profile. When selecting a controller, look for brands with the EPA WaterSense® label.

Cycle and Soak Programming eliminates water runoff. Observe how quickly runoff occurs when you are running your irrigation. This is the **MAXIMUM** run time for your irrigation controller in this hydrozone. So, to cycle and soak your irrigation, you divide up the total minutes required by the hydrozone into blocks of time no longer than the observed runoff time and allow a 30 minute rest period in between the irrigation cycles. **For example, if we need 30 minutes of water in a certain hydrozone, but we observe runoff after 10 minutes, break down the 30 minute total into three 10 minute cycles with 30 minutes between each cycle.**

Hand Watering is especially good for getting a garden established when you are going to want to spend more time looking at the plants to make sure nothing is amiss. During establishment you may need to water more frequently because roots are only 4”-10” deep on a newly-planted one gallon plant. (That’s why it’s great to try to plant during the rainy season!) Be sure to use a hose shutoff so that you are not inadvertently wasting and spraying water into the street.

Really look at your plants. Are they appearing droopy or sad? Is the soil very dry? If so, then give the plants a good drink and watch. Don’t water more than two days in a row, and let the soil partially dry out before watering again. Remember the symptoms of overwatering and underwatering are very similar (*see p. 64*).



Hose Shutoff Nozzle

After the first year or two, once your plants are settled, your sustainable garden should not need water more than once or twice a month, if at all. If you are at the coast, you may be able to eliminate regular irrigation altogether after establishment.

Pressure Regulation either for the whole house, or at each irrigation valve for each zone, eliminates excess pressure, and allows the irrigation system to run more efficiently. With drip systems, pressure regulation is essential, because drip lines operate best at very low pressure.

What Is Irrigation Efficiency (IE)?

Irrigation Efficiency describes how well your irrigation system is delivering water to the plants you are intending to irrigate. Since no mechanical system could be 100% efficient, the IE of any particular irrigation system will always be less than 100%. A well maintained spray system may achieve 70% IE, while a drip system could be as high as 90% IE.

Since there are many inter-connected mechanical parts of a system, there are lots of ways your irrigation can become inefficient and begin applying water in places that are not beneficial to your landscape. IE depends upon four key elements:

- 1** Design of your system reflects the best components for the specific conditions of your site.
- 2** Installation of the system uniformly distributes the water to the plants in the landscape.
- 3** Management of the system correctly balances the soil moisture account.
- 4** Maintenance adjustments and repairs are made frequently.

Tips for Eliminating Runoff: Drip or Spray

In general, several things can be done to minimize runoff due to irrigation. These include:

- 1** Convert spray systems to drip irrigation with the lower precipitation rates, pressure regulation, and a filter (*see p. 37*).
- 2** Make sure to have check valves in all hillside and low point spray systems.
- 3** Do not install spray irrigation in areas that are too narrow for spray (10’ wide or narrower).
- 4** Move spray heads 24 inches from any buildings or hard and impermeable surfaces.
- 5** Cycle and Soak irrigation run times.
- 6** Be sure to follow organic maintenance practices to keep your soil spongy.