Irrigation for your Garden

PROTECT WATER RESOURCES: Please protect our water resources from waste and pollution. We are in a severe drought with mandatory water restrictions.

- **Repair** heads and breaks as soon as you discover them.
- **Learn to be a Smart Controller** by learning how to operate your irrigation timer and adjust it to the seasons and needs of the plants in your garden.
- **Use organic fertilizers** – feed the soil microbes to improve soil fertility and water-holding capacity.
- **Protect your soil.** High nitrogen synthetic fertilizers will damage it.
- **Stop the runoff!** Does your irrigation water runoff your lawn and down the drain? There should be little to no runoff from your lawn / garden.

SMART IRRIGATION CONTROLLERS: What is a Smart Irrigation Controller? Be a smart controller!!

- A **smart controller** connects with a weather station or satellite to determine temperature, wind, humidity, **ET – evapotranspiration** (the rate that water is used by a plant), rain, etc., based on your location, plant types and soil type.
- **Smart controllers** are generally used in agriculture, sports parks and large-scale landscape developments, but they can be used by homeowners as well.

WATERING – HOW MUCH/HOW LONG? How much or how long should I water? The basic answer is "it depends". It's all based on your soil, slope, plant types, lawn type, exposure, and irrigation method. You need to know your irrigation methods, soil & garden and then adjust the irrigation to the seasonal demands.

- It takes about 3 - 4 inches of water per week in the peak of production at *Our Garden* to water the annual summer crops of tomatoes, squash, beans, cucumbers, etc.
- Applying one inch of water to 100 square feet (10' by 10' or 20' by 5' for example) uses 62.5 gallons.

- **Understand runoff!** Know how fast water flows off your landscape, lawns and garden. Time it.
  - Use multiple start times if necessary - allow water to soak in.
  - Improve soil by incorporating compost and applying an organic mulch at the surface.
  - Aerate lawns to ease compaction and allow water to get to the roots.

- **Check results!** Check the moisture below the surface, at the root zone.
  - Dig down with a trowel, shovel or soil probe to check moisture. Soil should be moist but not soaked. If you can squeeze water out when you ball up your soil, it is too wet.
  - Get very familiar with your soil and the available moisture at the root zone.

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WHAT HAVE WE DONE AT *OUR GARDEN*? HOW CAN YOU APPLY THAT AT HOME?

LEARN YOUR PRESSURE AND CAPACITY: The first thing to do before building an irrigation system, drip or otherwise, is find out your pressure and capacity. This information tells you how to divide up the system, how many valves you need, and how many feet of drip lines can be supported per valve.

- **Pressure is the force** behind the water and **capacity or "flow" is the amount** or gallons per hour that the water source can deliver to the irrigation system.
- **Test your water pressure** with a pressure gauge, about $10 from a hardware store. Pressure just needs to be adequate and steady, ideally above 40 pounds but **capacity is the key**. You must install a **pressure reducer** and **filter** before the drip lines to protect the drip lines and fittings from fluctuating or excess pressure and from any dirt in the delivery lines.
- **Test your capacity:** To test capacity, all you need is a 5 gallon bucket and a stop watch.
  - Turn water on at the hose bib - **all the way open.**
  - Time how long it takes to fill the 5 gallon bucket.
  - Example: Say filling the bucket took 60 seconds – (one minute).
    - 5 gal X 60 min = 300 gal per hour – **that is your capacity.**
    - 62.5 Gallons over 100 sq. ft. is 1 inch of water.
  - Dripworks.com has an online calculator for this.

LEARN THE PARTS & PIECES: Let's take a look at the drip irrigation parts and today's plumbing display board to see how all this fits together. Take pictures for reference later.

- **Don't mix & match parts:** Use the same manufacturer's drip parts if possible. Some parts may not fit properly if you mix and match parts.
- **Always use a filter** so your drip lines do not clog.
- **Always use a pressure reducer** to control pressure; 30 - 40 pounds is what you will want. The pressure reducer will keep the emitters working properly and prevent damage to the system from too-high water pressure.
- **Always place the filter before** the pressure reducer.
- **Always flush** the delivery lines before adding any ¼ inch emitter tubing.

RESOURCES:

- Contra Costa Water District has good info on plants and water use.
  http://www.ccwater.com
- Water Savers stores in Concord, Livermore & Brentwood
  Concord Store, 4025A Nelson Ave Concord CA 94520
  http://www.watersaversinc.com
- YouTube video of how to set up a drip irrigation system
  https://www.youtube.com/watch?v=66V8QDM8e5Q
- UC Master Gardeners of Contra Costa for Help Desk, info and links
  http://ccmg.ucdavis.edu
  Call: 925-646-6586.

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