Sheet Mulching & Irrigation for Lawn Conversions

If you are planning a lawn conversion by sheet mulching and want to plant a drought tolerant garden in place of the lawn, you may want to install a drip irrigation component to the project.

- **Measure the area you are going to sheet mulch.** This is important information for figuring out your materials list and also when applying for rebates – Cash for Grass etc.
- **Convert existing irrigation system to drip:** If you have an irrigation system in place for the lawn, it can be easily converted to a drip system for a drought-tolerant garden.

1. **Identify the valve that runs the lawn area** and turn it on so you know where all the sprinkler heads are located. This will be the valve that runs your new drip system.
2. Mark the location of all irrigation heads that are in the existing lawn.
3. Run the lawn sprinkler system so that the soil is moist to about 8 inches below ground. This will make the digging easier and will also help to keep the soil microorganisms alive and active.
4. Choose a sprinkler head that is centered but along the perimeter of the area; this will be your connection point for the drip system. Refer to the plans in your info packet or today's demonstration.
5. **Materials needed for the job. An irrigation supply store can help you with this step.**
   a. Irrigation parts: caps, risers, tubing, purge valve, pins, connectors, **filter and pressure reducer**.
   b. Use ½ inch in-line emitter tubing with .9 GHP emitters every 12 inches.
   c. Burlap or cardboard, enough to cover the lawn.
   d. Have compost and mulch delivered to cover the area approximately 4 inches deep with about 1 inch of compost and 3 inches of mulch. It takes about 1½ cubic yards of material to cover 100 square feet 4 inches deep.
6. **Install the pressure reducer and filter after the control valve**. Refer to separate handout in your packet.
7. Dig out the chosen sprinkler head, attach a riser where the sprinkler head was connected bringing the riser above grade, and attach a tee. This is the connection point for the new drip system
8. Mow grass down as short as you can.
9. Dig out and cap all other sprinkler heads below ground. (**Yes, you have to dig.**)
10. Dig out the grass and soil around the perimeter so that the grade tapers downwards towards the edges of the area, to about 4 inches below the surrounding concrete or header boards. This will let you add the layers shown in the separate sheet mulch diagram, and will help keep those layers in place.
11. Add the burlap or cardboard on top of the lawn and pin it down or water it down.
12. Install the drip irrigation lines **on top of the cardboard or burlap** and run it to test.
    a. **Follow the Netafim designs handout** in your info packet.
13. Flag the lines so you know where they are; this helps when you place plants.
14. Cover up the sheet mulch and irrigation with the compost / loose mulch material.
15. Keep the area moist by running the drip system every week for about 30 minutes.
16. Place new plants in desired locations when you are ready to plant.
17. Rake back the compost in the planting location and cut the burlap or cardboard in an X pattern, pull back and dig the planting hole. Plant your plants, and water them in with a hose.

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Additional Irrigation Information:

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 in 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 them.
- **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 Gardener Program of Contra Costa for Help Desk, info and links
  http://ccmg.ucdavis.edu
  Call: 925-646-6586.

Prepared/presented by UC Master Gardeners Janet Miller & Steven Griffin at the GET DRY Plant Sale & Workshop, September 2015.