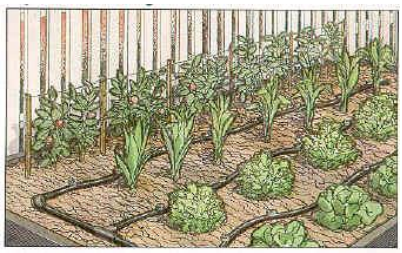
Drip Irrigation for Vegetable Beds and Annual Flowers



by Cathy Rymer, former Water Conservation Coordinator, City of Chandler

Drip irrigation systems for areas that are periodically maintained or renovated should be as simple as possible. They will require parts that can stand up to tasks like weeding, hoeing, digging and fertilizing. Plus when garden beds are replanted each year, the irrigation system should be easy to remove and replace.

Getting Started

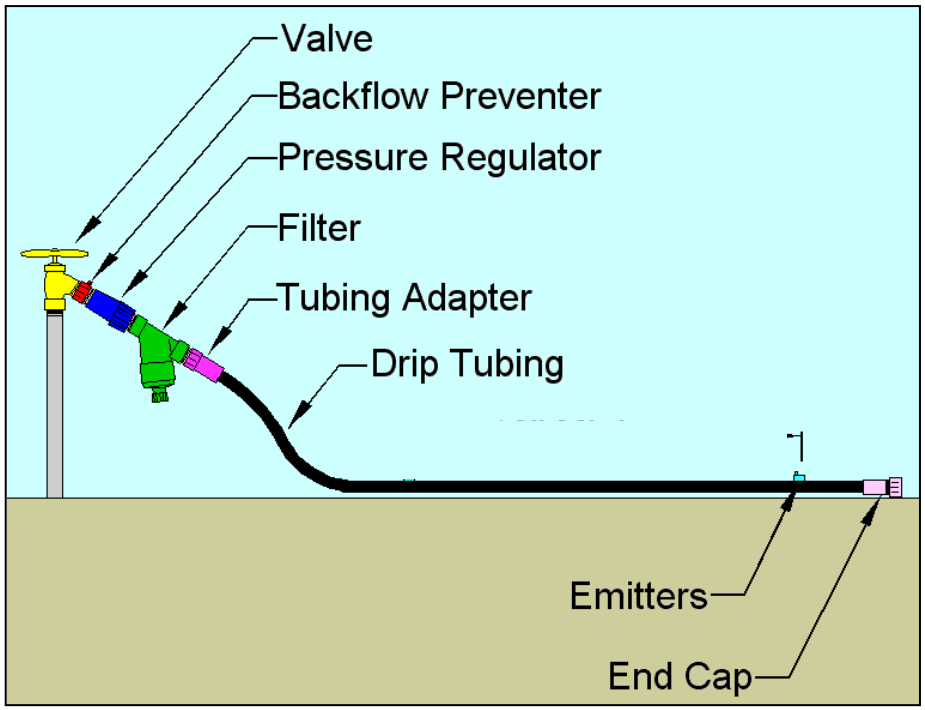
- Locate the garden plot(s) in a spot that receives at least 6 to 8 hours of sunlight each day.
- A permanent water supply is essential. There should be a hose bib (faucet) nearby. If not, it may be possible to extend a line using PVC pipe to a location near your garden.
- An automatic controller for your garden is recommended. This way plots can be watered while you're away during breaks or summer vacation. Some systems operate on batteries, others can be hard-wired to an electric source. If you choose a permanent power source, you will need access to power, but this does not necessarily need to be close to the garden.

Drip systems consist of many parts, each has a specific use. Controller, valves, filters, pressure regulator, drip fittings, drip tubing, micro-tubing, drippers, drip soaker tape, laser drilled soaker hose, micro-sprinklers, sprayers and of course, there are the accessories. For vegetable and flower beds you'll need the following:

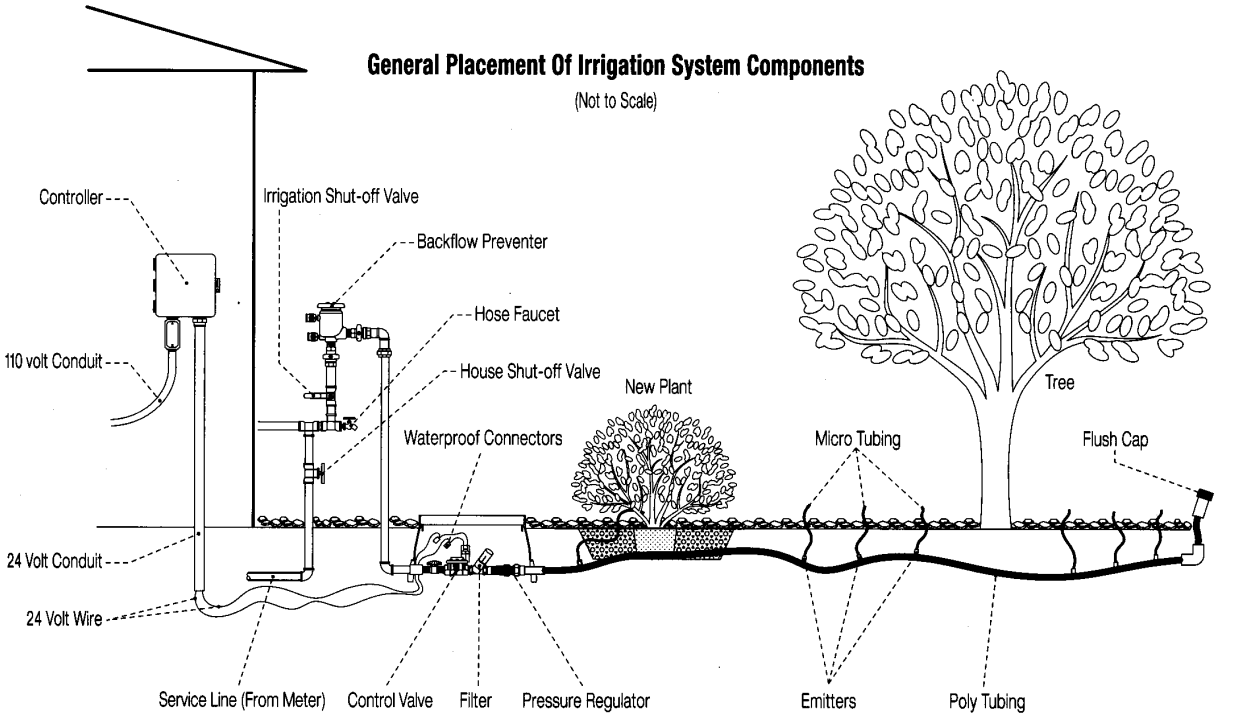
Parts List

Electric Controller	**Battery Operated Controller (at faucet)**
Irrigation Controller	Battery controller
Valve Box	
Electrical wire (from controller to valve)	
PVC pipe (from water source to valve)	
Irrigation Valves	
Y Filters	Y Filters
Pressure Regulators	Pressure Regulators
1/2" flexible black poly tubing	1/2" flexible black poly tubing
¼" drip tubing with embedded emitters	¼" drip tubing with embedded emitters
Connectors, end caps, goof plugs	Connectors, end caps, goof plugs
Vacuum Breaker (may already installed where main water supply enters school)	Vacuum Breaker (may already installed where main water supply enters school)
Comments	*Comments*
Several garden beds can be watered on different schedules and for varying lengths of time. This is great for sprouting seeds vs. more mature plants.	Reduced cost ☺, all garden beds are watered at the same time on the same schedule ☹

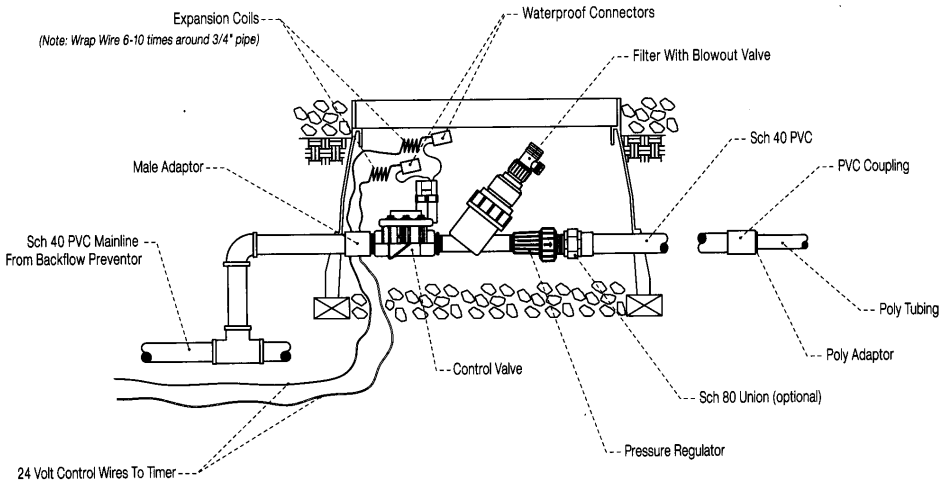
Manual or Battery Operated Controller Layout

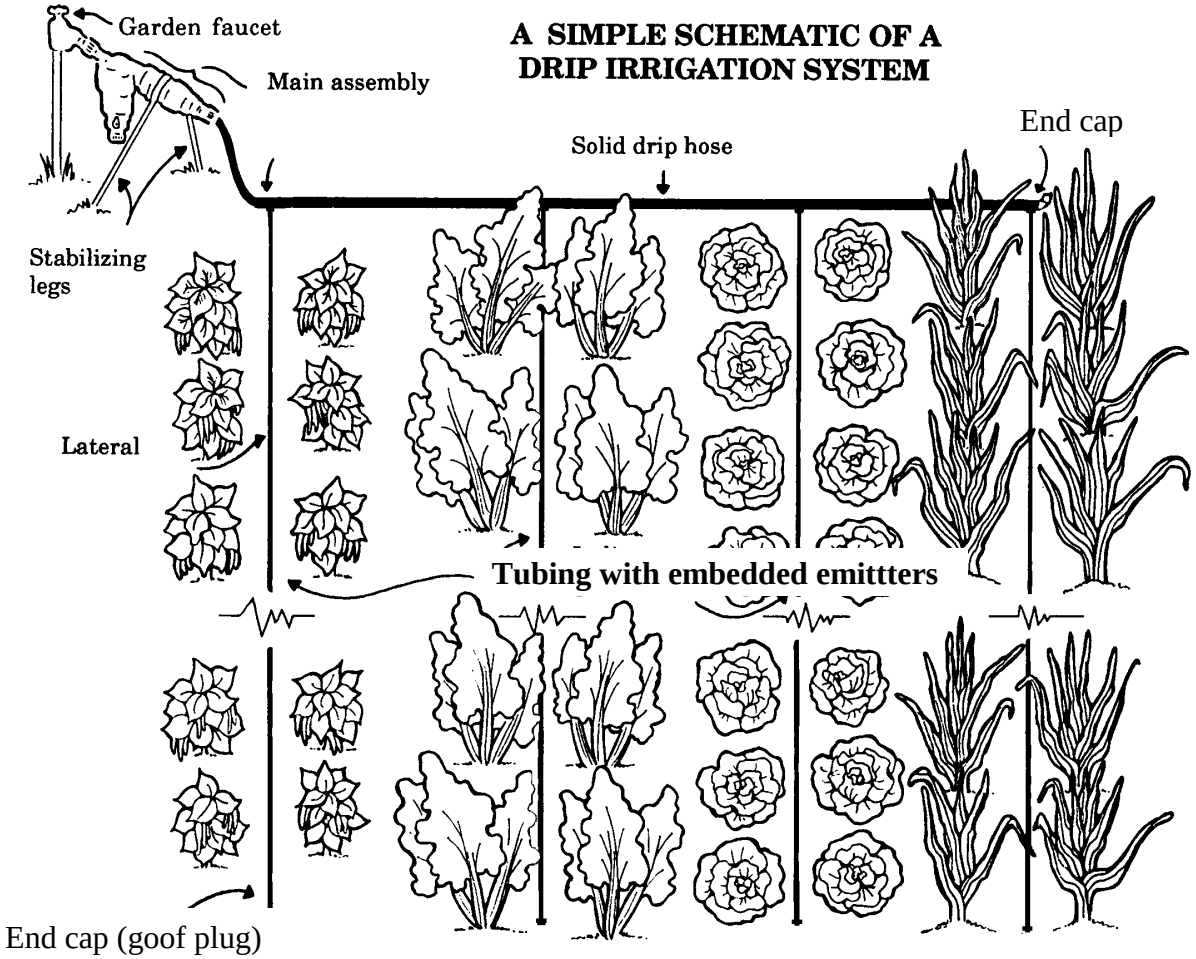


Electric-Controlled Irrigation Layout



Valve Assembly Box
(for electric controller)





End cap (goof plug)

Tips 

- ✔ Plan Big – You may want to expand your garden plots someday. Installing an extra valve or two will save work later on.
- ✔ An extra valve will make it easy to have a variety of irrigation schedules. One bed might be newly planted and will need water more often until germination. Another might only need water once or twice a week.
- ✔ Limit your length of 1/4" tubing to 12 or 15 feet. Any longer and water pressure will be too low at the end of the run to irrigate effectively.
- ✔ Lay 1/4" tubing on top of the soil. This way it's visible when planting and may not get cut accidentally.
- ✔ 1/4" tubing on top of the soil is easy to pull back or lift out when beds are cultivated.
- ✔ Cover 1/4" tubing with mulch after transplants are installed or seeds have sprouted.
- ✔ Sprinkler systems are not recommended because as water evaporates from the leaves, it leaves salt deposits that cause leaf burn.

Advantages of Drip Irrigation

- ***Economy of Water Use***. The greatest advantage of trickle irrigation is its low water use.
- ***Fewer Weeds Germinate***. Water is directed only to the crop.
- ***Easy to Operate***. Once the system is installed, it is simply a matter of opening a valve to water the entire garden.
- ***Fewer Leaf Diseases***. The leaves are not wetted which discourages fungus and bacterial plant diseases.
- ***Allows Work in the Garden While Watering***. Only a small area around the row of plants is irrigated. Walkways and between-row areas remain dry.
- ***Uniform Watering Pattern***. Interference from the wind results in uneven watering with overhead sprinkling.
- ***Minimal Contamination of Groundwater Supplies***. With the limited volume of soil irrigated, leaching of fertilizer salts into the groundwater supply is largely eliminated.
- ***Laborsaving***. You do not have to shut off the faucet and move the hose.

Despite the great advantages of drip irrigation, it has its drawbacks. It doesn't wash dust from foliage. It requires pressure regulation. And, if the system is installed beneath mulch -- an excellent water-conservation technique -- you can't see it working. You know something is wrong only when plants start to wilt.

Local irrigation suppliers can be a great resource when setting up your system. Their staff is knowledgeable and can answer questions you may have. Just keep in mind that while they do sell retail, the majority of their customers are landscape contractors. Be prepared to wait a bit if the counter is busy.

Irrigation Suppliers (just a few, there are more on the internet).

Horizon	4055 W Saturn Way, Chandler, AZ 480-961-3311
Horizon	4635 E Warner Rd, Gilbert, AZ 480-279-2404
Turf Irrigation (Hughes Supply)	8355 E Butherus Dr #7., Scottsdale, AZ 480-951-0124
Sprinkler World	3164 S Country Club Dr, Mesa, AZ 480-892-5001
Ewing Irrigation	18 S Roosevelt Ave, Chandler, AZ 480-940-9541
Ewing Irrigation	22030 S Scotland Ct, Queen Creek, AZ 480-882-3944