Localscapes®
IRRIGATION
WORKSHOP

Localscapes University

Irrigation Workshop

Efficient watering is the goal

Localscapes
Localscapes.com

We want to give the plants the amount of water they actually need.

Localscapes watering standards

1. Lawn is always watered separately from other plants.

Localscapes watering standards

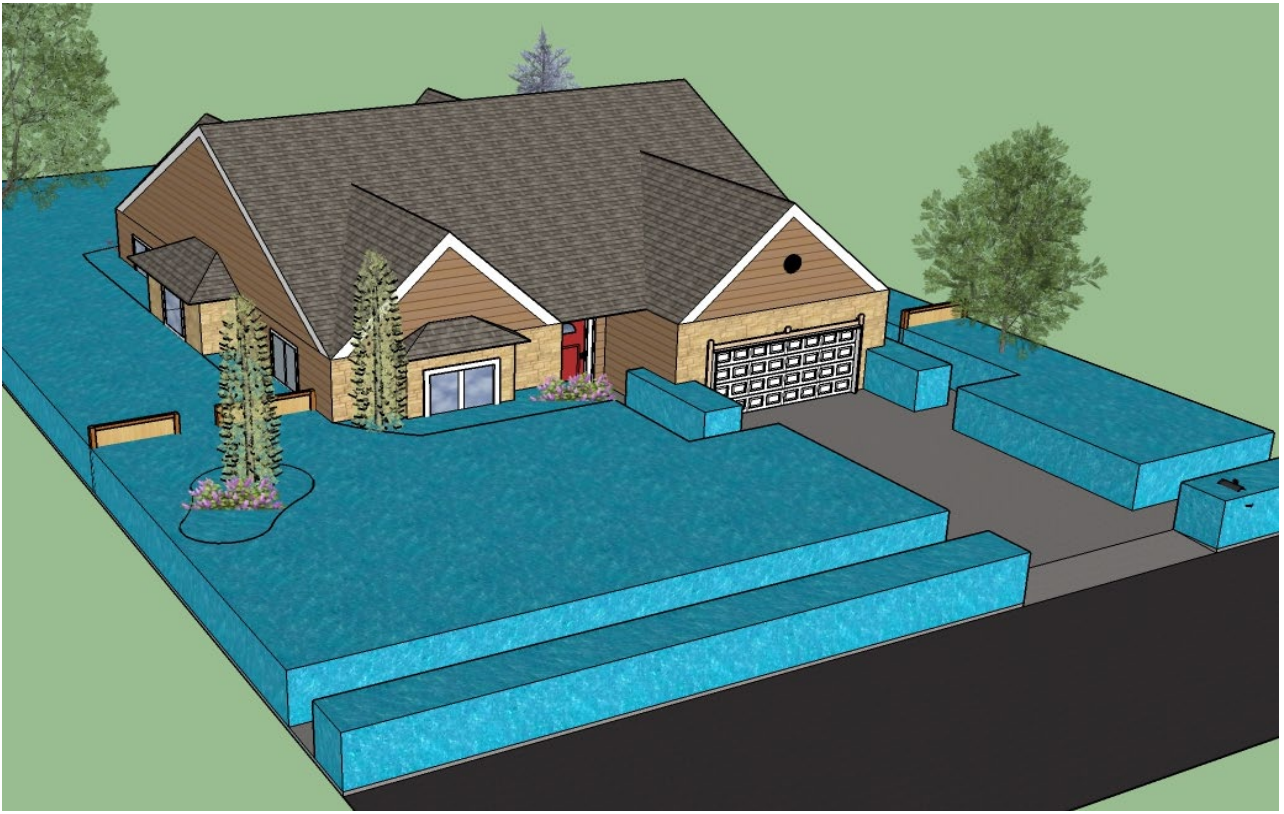
2. Planting beds are always watered with drip irrigation.

Localscapes watering standards

3. Use only one type of irrigation per zone. Don't mix spray and drip lines on same zone.

Why do these details matter?

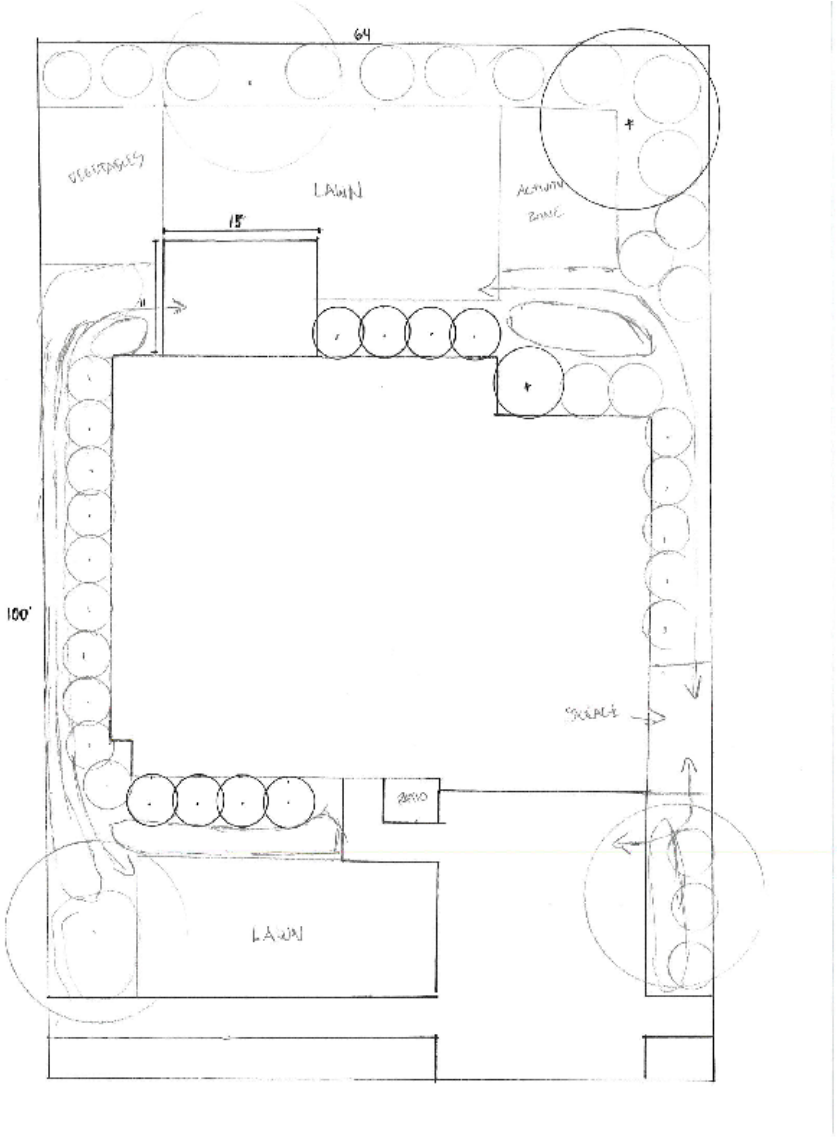
130,000 gallon annual water savings



Typical @ 40” per season= 196,250 Gal. Vs. **Designed for Utah Localscape = 64,766 Gal.**

What you need to get started

- Conceptual plan
- Irrigation plan
- Find out:
  - *Water pressure (psi)*
  - *Flow rate (gpm)*
  - *Soil texture*



Water Pressure

- *Water pressure that is too high or too low can cause problems.*
- *Misting spray heads and water hammer are signs of high pressure*
- *Heads that don't pop up and dry spots are signs that pressure is too low*
- *Drip Irrigation- 10-30 psi*
- *Spray Irrigation- 30-50 psi*

Flow Rate

- Use an empty bucket.
- *Fill the bucket for a minute and you have your number.*
- *You can also. . .*
- *Fill for half a minute and double the gallons.*
- *Fill it for 15 seconds and x by 4.*

			Assume Gravity to Low Pressure. About 6f/s flow velocity, also suction side of pump		Assume Average Pressure. (20-100PSI) About 12f/s flow velocity		Assume "High Pressure" PEAK flow. About 18f/s flow velocity+	
Sch 40 Pipe Size	ID (range)	OD	**GPM** (with minimal pressure loss & noise)	**GPH** (with minimal pressure loss & noise)	**GPM** (with minimal pressure loss & noise)	**GPH** (with minimal pressure loss & noise)	**GPM** (with significant pressure loss & noise)	**GPH** (with significant pressure loss & noise)
1/2"	.50-.60"	.85"	7 gpm	420 gph	14 gpm	840 gph	21 gpm	1,260 gph
3/4"	.75-.85"	1.06"	11 gpm	660 gph	23 gpm	1,410 gph	36 gpm	2,160 gph
1"	1.00-1.03"	1.33"	16 gpm	960 gph	37 gpm	2,220 gph	58 gpm	3,510 gph
1.25"	1.25-1.36"	1.67"	25 gpm	1,500 gph	62 gpm	3,750 gph	100 gpm	5,940 gph
1.5"	1.50-1.60"	1.90"	35 gpm	2100 gph	81 gpm	4,830 gph	126 gpm	7,560 gph
2"	1.95-2.05"	2.38"	55 gpm	3300 gph	127 gpm	7,650 gph	200 gpm	12,000 gph

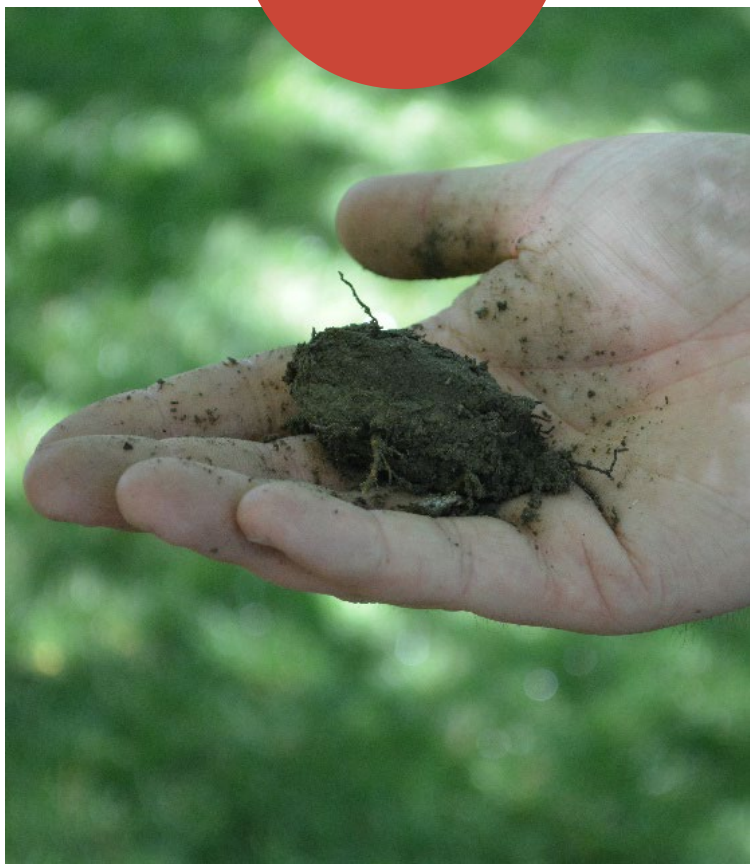
Soil Texture

The Ribbon Test

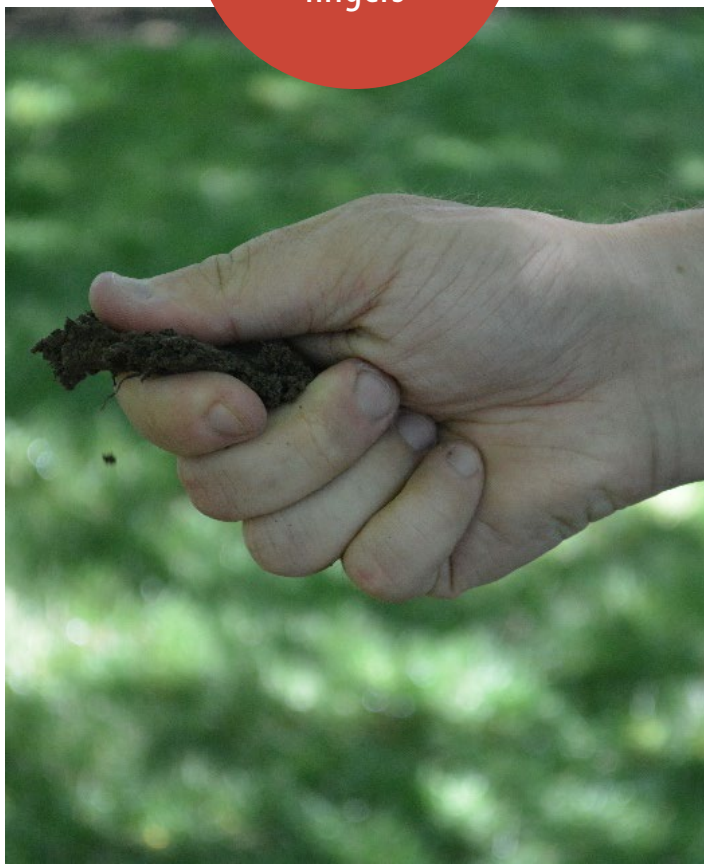
- Quick way to determine the type of soil that you have in your landscape

Clay holds onto water better than sand and will affect your watering time

Moist clump of soil



Squeeze through fingers



Soil Texture

Localscapes
Localscapes.com

Clay

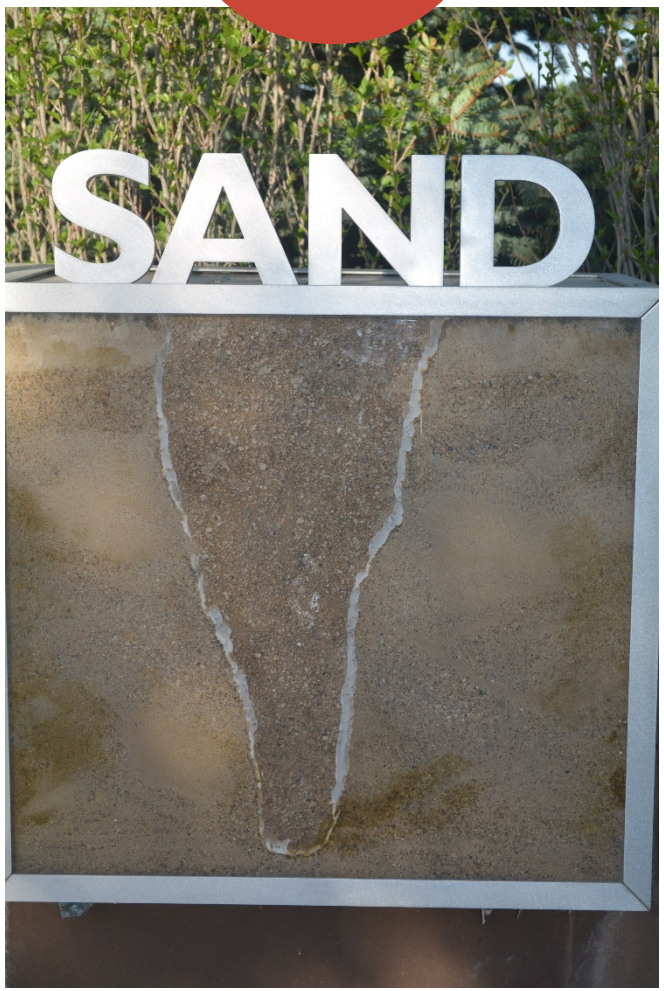
Wide but not very deep

Laterally and not very deep

Sand

Deep but not very wide

Deep and not as wide



Drip system considerations

- Use manufacturer's website to help determine spacing of emitters and rows.

Techline Calculator & Techline Calculator App

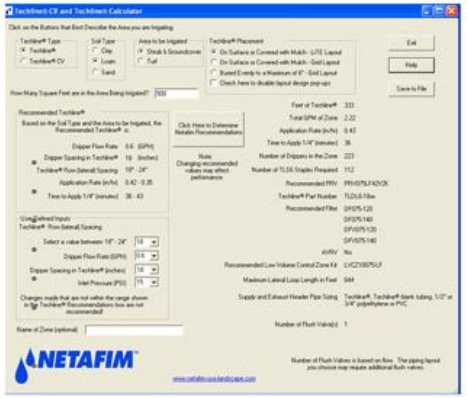
The Techline Calculator App gives you a quick and easy way to determine your landscape design needs from anywhere. Just plug in your dripline placement, soil type, and size of project, and the calculator app provides you recommendations for dripline amount, total GPM of zone, application rate, application time, and a control zone kit.

Save and email your results
Available for iphone and android devices
Free download

Download on the App Store

GET IT ON Google Play

Techline Calculator – Desktop Version



The Techline Calculator provides a complete analysis of your dripline zone and includes all of the necessary support components. Plug in the square footage of the area you want to irrigate, whether it's a garden or lawn, and what type of soil you're working with, and the calculator will give you the following information:

Amount of dripline in feet
Range of inches between rows
Distance between emitters
Total emitters in zone
Flow of the zone in GPM
Application rate in water in inches per hour based on the row spacing you choose
Amount of time to apply 1/4" of water

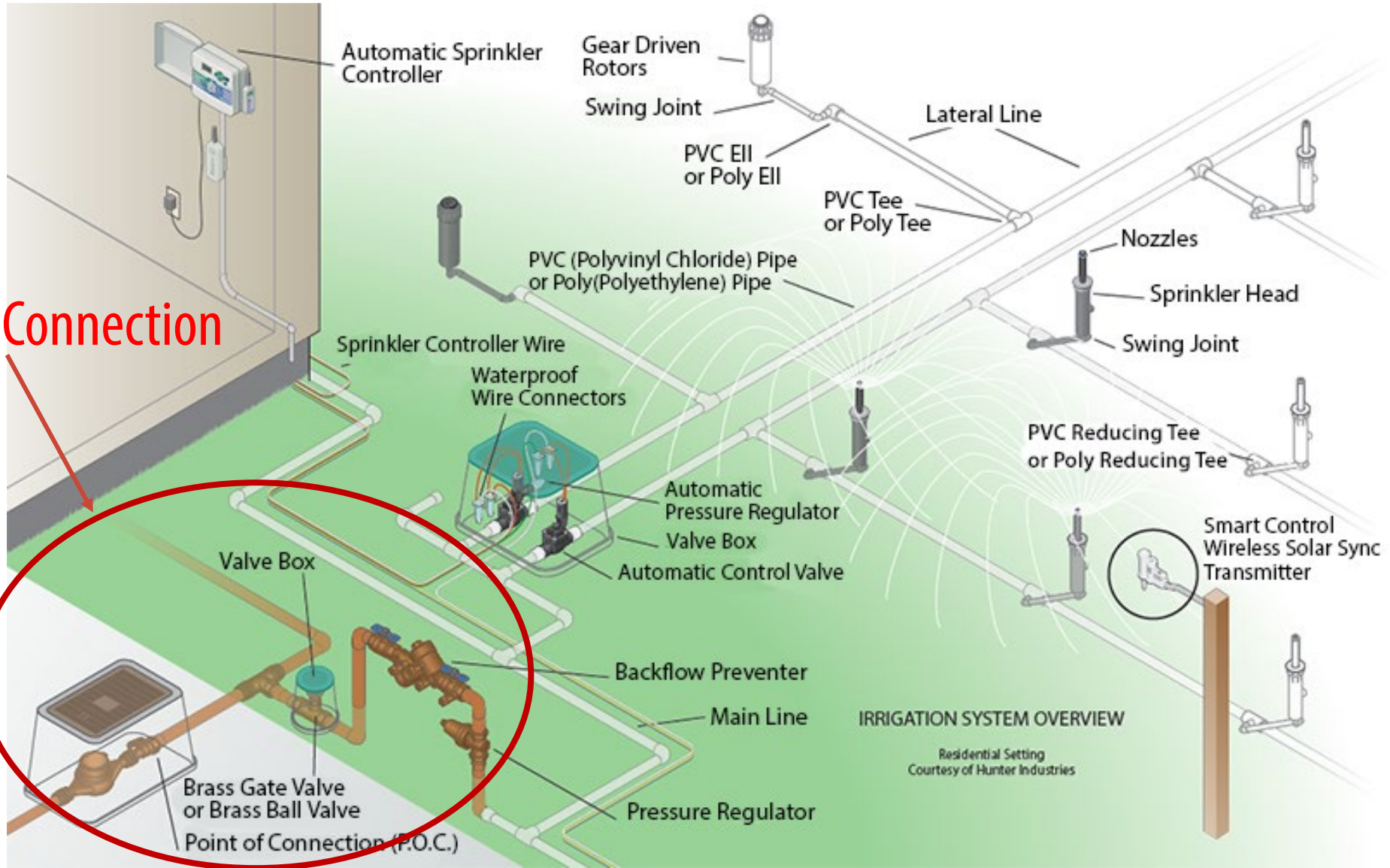
Download Techline Calculator.

Localscapes

How to install a new sprinkler system

Anatomy of a sprinkler system

Point of Connection



Graphic courtesy:
Hunter Industries

Stop and waste valve

Supplies water for the irrigation system.

Best if located outside of the house.

Drains excess water once closed.

Backflow Preventer

Localscapes
Localscapes.com

Prevents contaminated water from being siphoned into the house.

Required by most city ordinances.

Pressure Regulator

Localscapes
Localscapes.com

Keeps system pressure within optimal range.

Reduces wear on equipment.

Improves system efficiency.

PVC vs Poly Pipe

Localscapes
Localscapes.com

PVC

Poly Pipe

PVC vs Poly Pipe

PVC

- Rigid/Inflexible
- Can break if water is frozen inside
- More available in warmer climates
- Fittings are secured with glue

Poly Pipe

- Flexible
- Expands to allow freezing without breakage
- More available in colder climates
- Fittings secured with gaskets and barbs

Winterization

- Drains can automatically drain water from the system

- Compressed air can be used to clear water from the system after shutdown
  - Caution: use volume more than pressure to avoid damage to your system

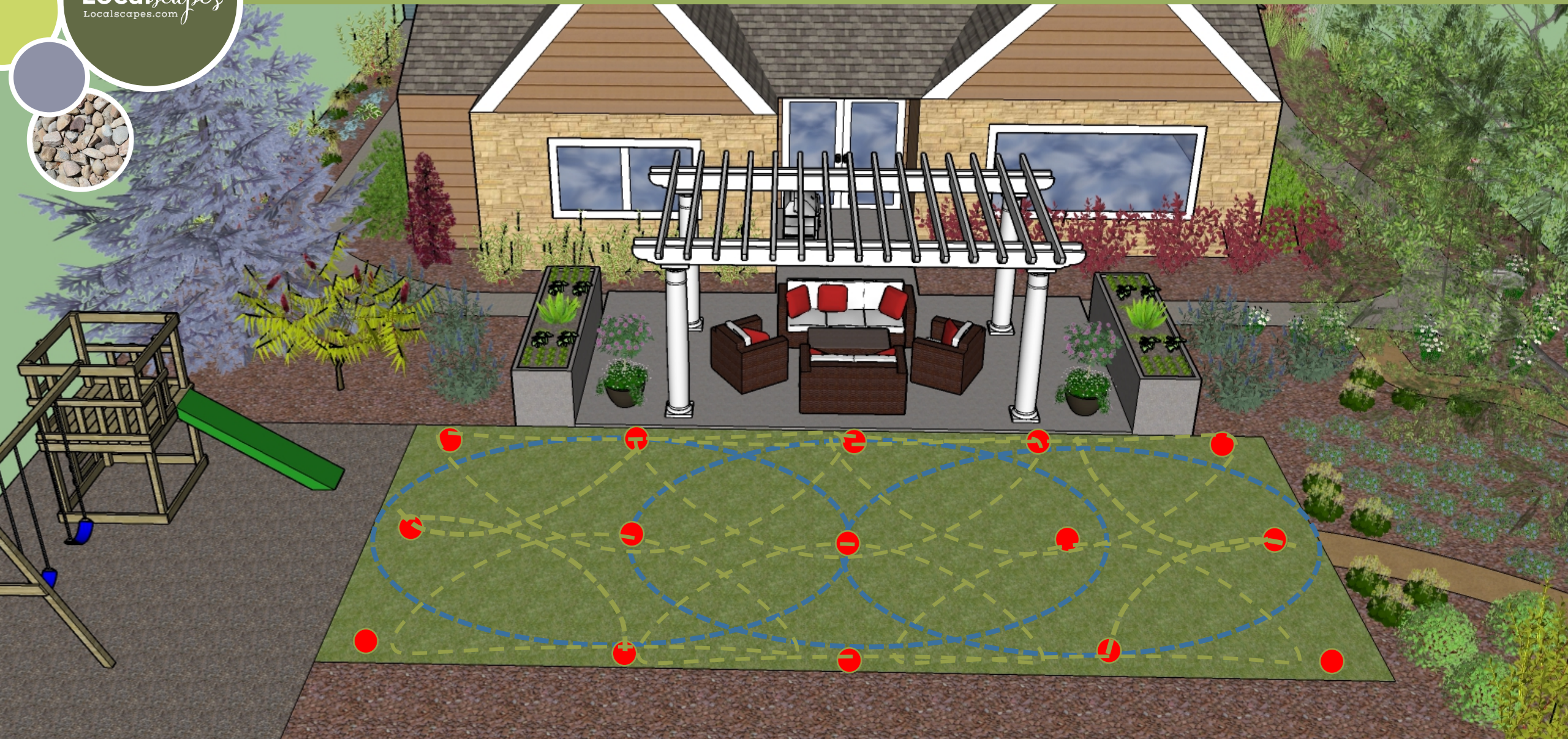
Trenching

Localscapes
Localscapes.com

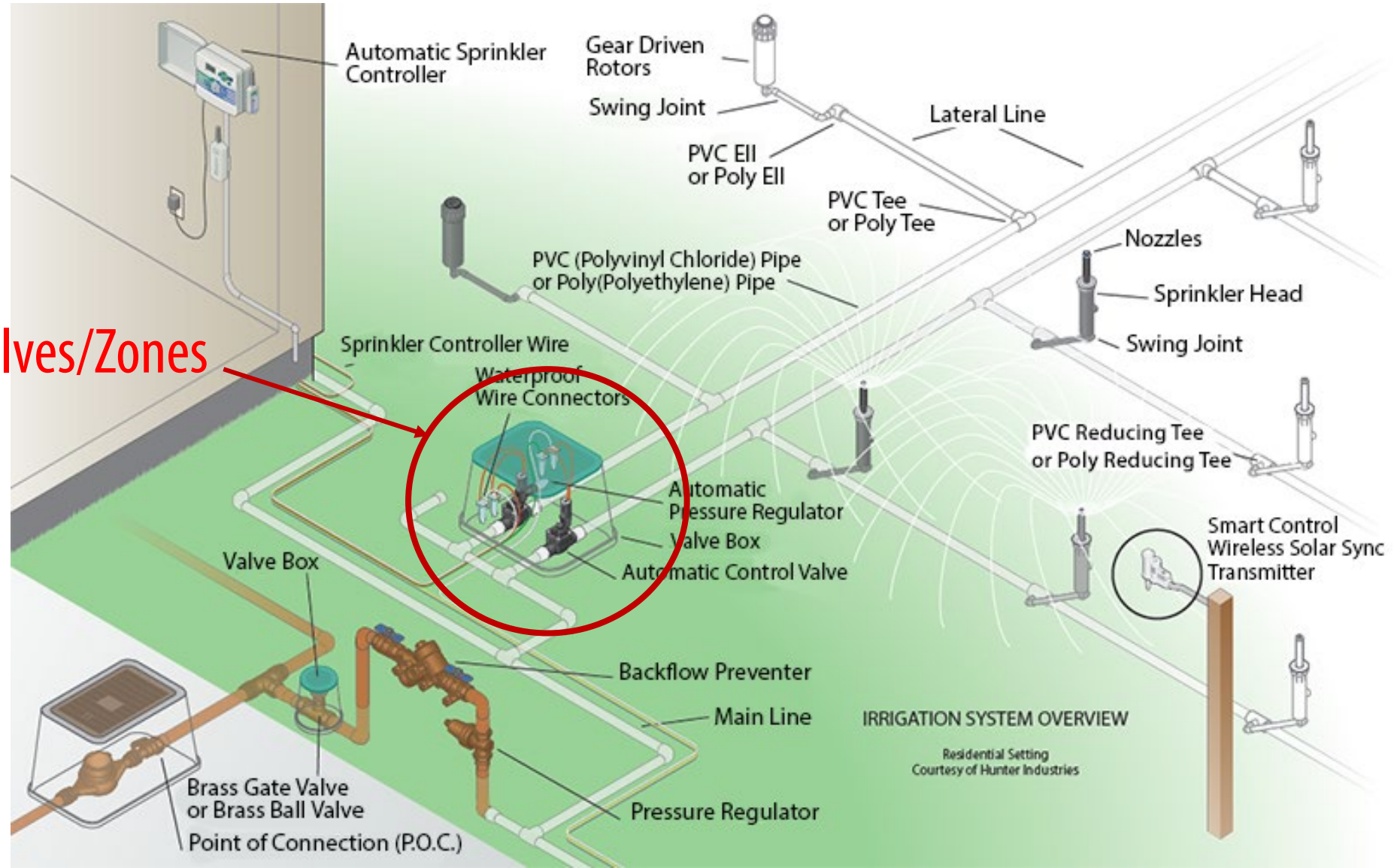
Depth: 6-12" is optimal.

Mark desired head locations and lines before beginning.

Head-to-head coverage



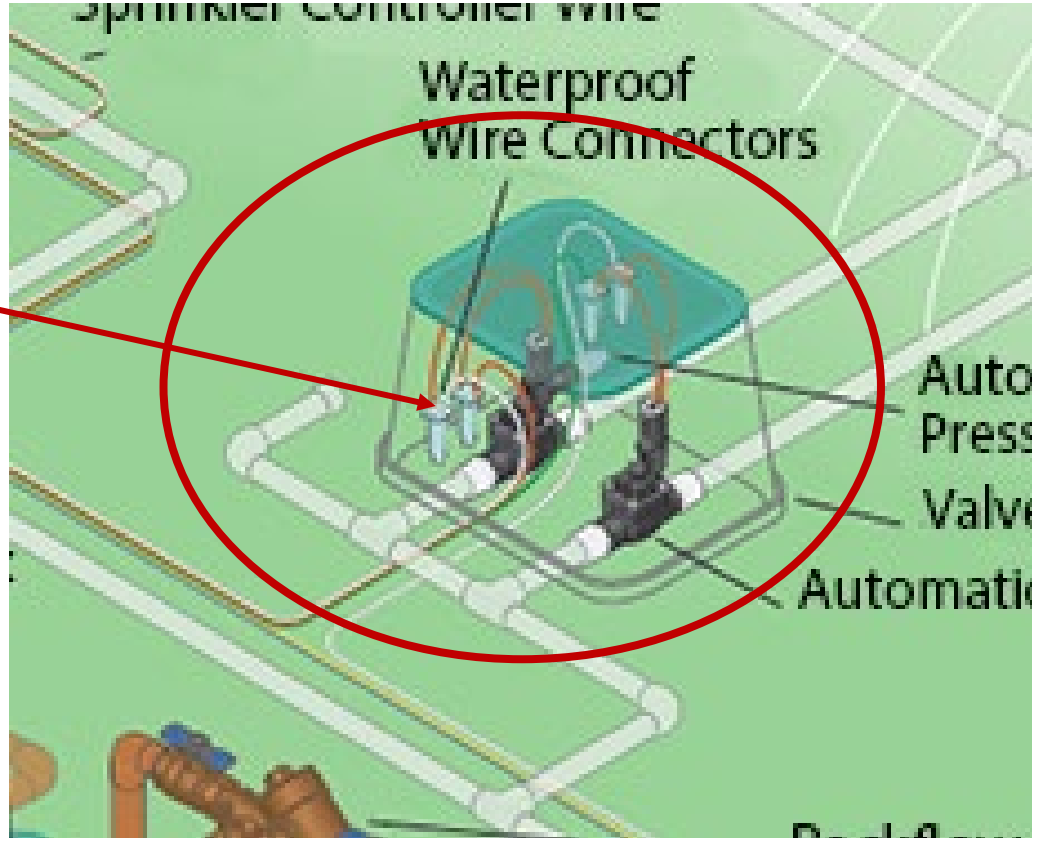
Anatomy of a sprinkler system



Graphic courtesy
Hunter Industries

Anatomy of a sprinkler system

Valves/Zones



Graphic courtesy
Hunter Industries

Sprinkler valves

Localscapes
Localscapes.com

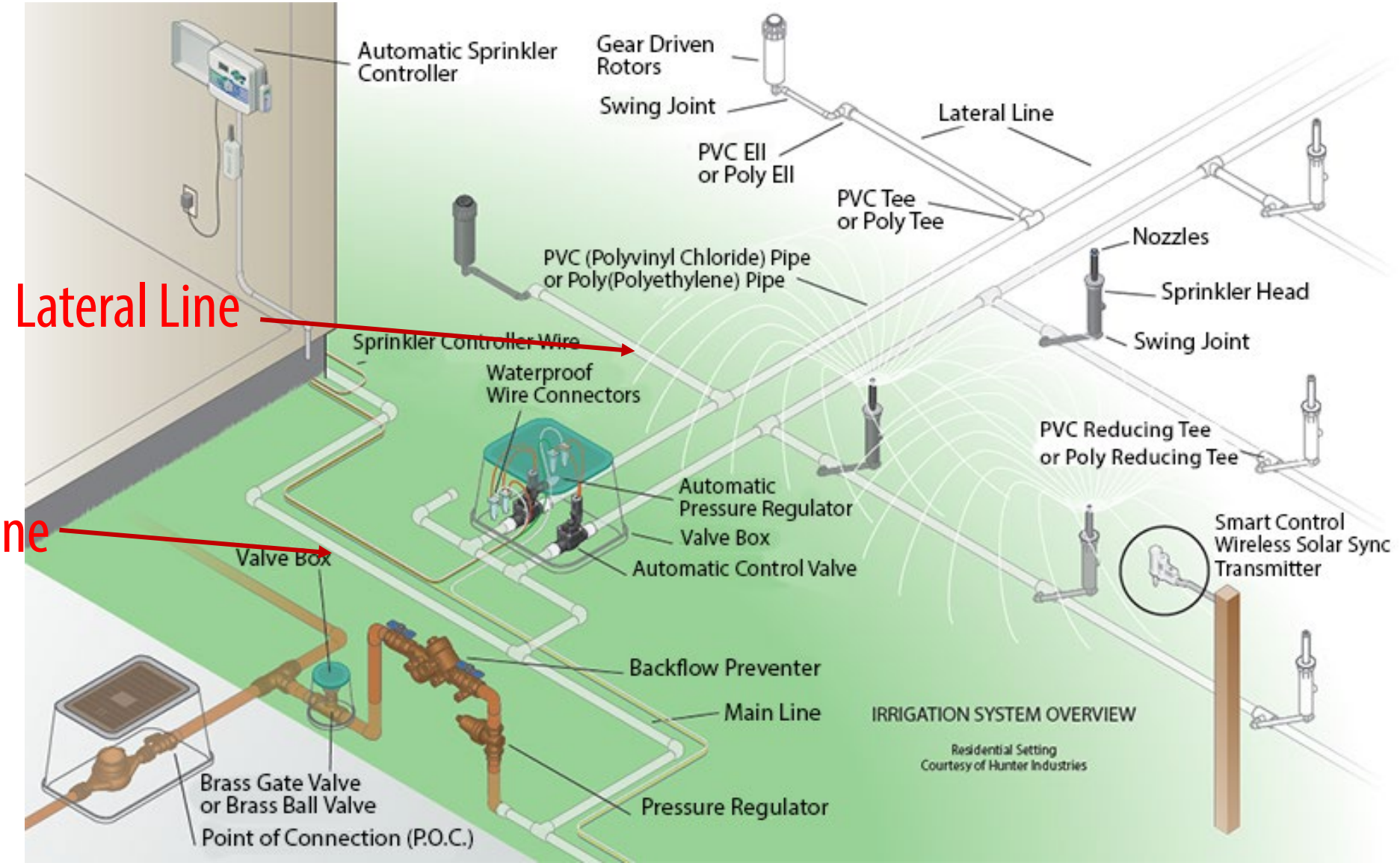
Standard Valve

Valve w/ pressure regulator

Valve considerations

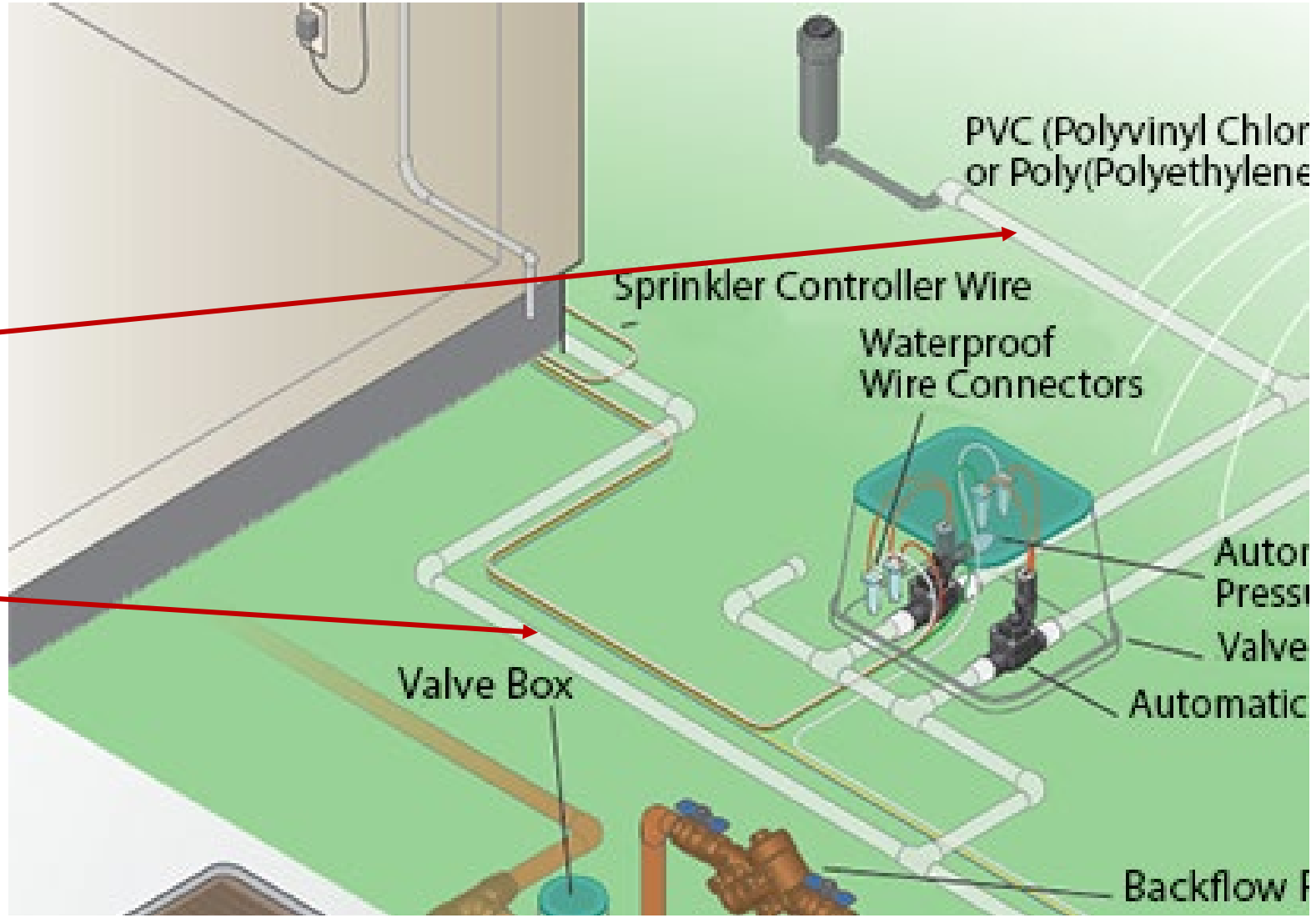
- Location
  - Should be near area being irrigated, but not IN the lawn
- Each valve should water a zone with drip or spray but not both
- Valve manifolds help with later repair and replacement

Anatomy of a sprinkler system



Graphic courtesy
Hunter Industries

Anatomy of a sprinkler system



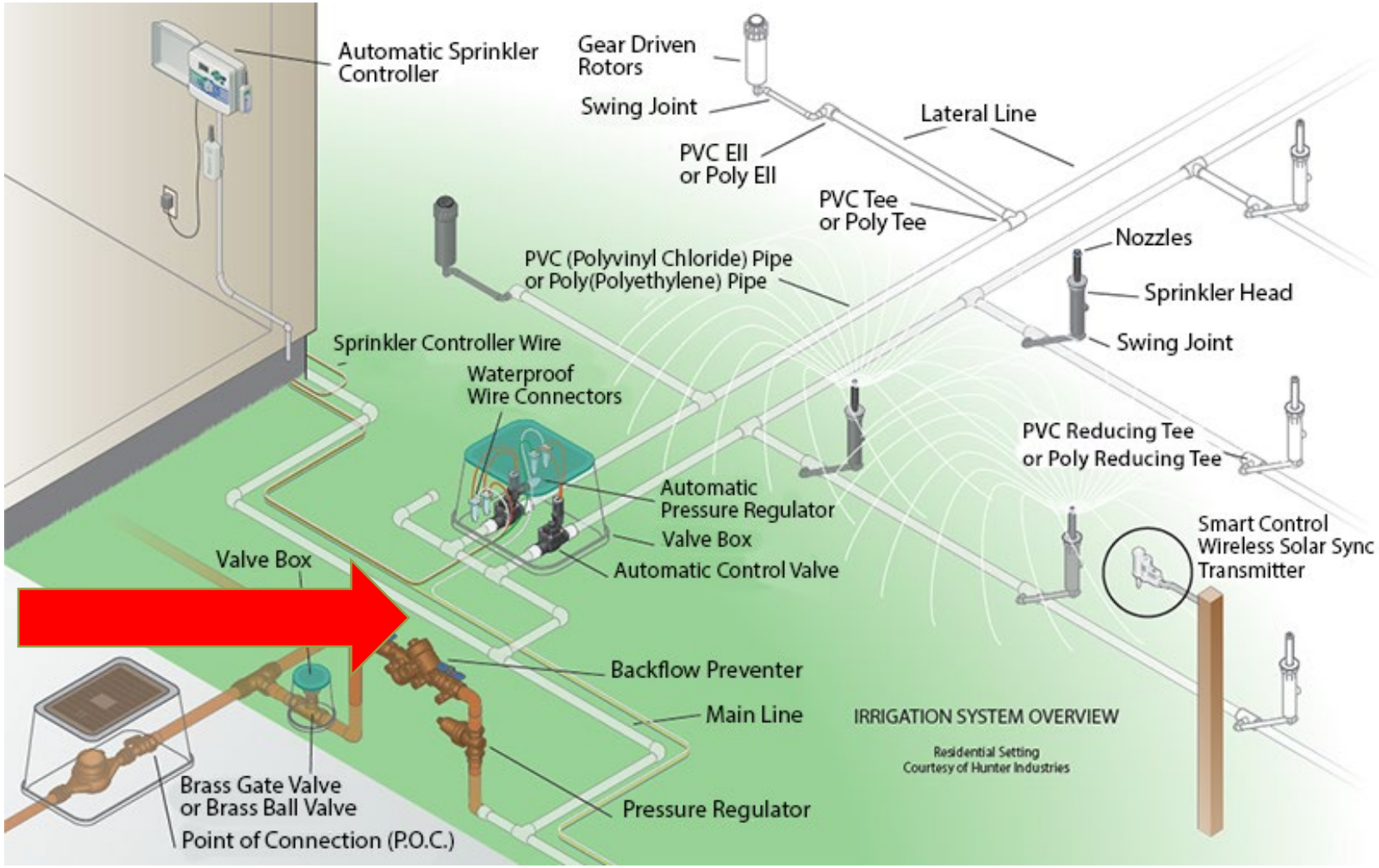
Graphic courtesy
Hunter Industries

Main Line

Localscapes
Localscapes.com

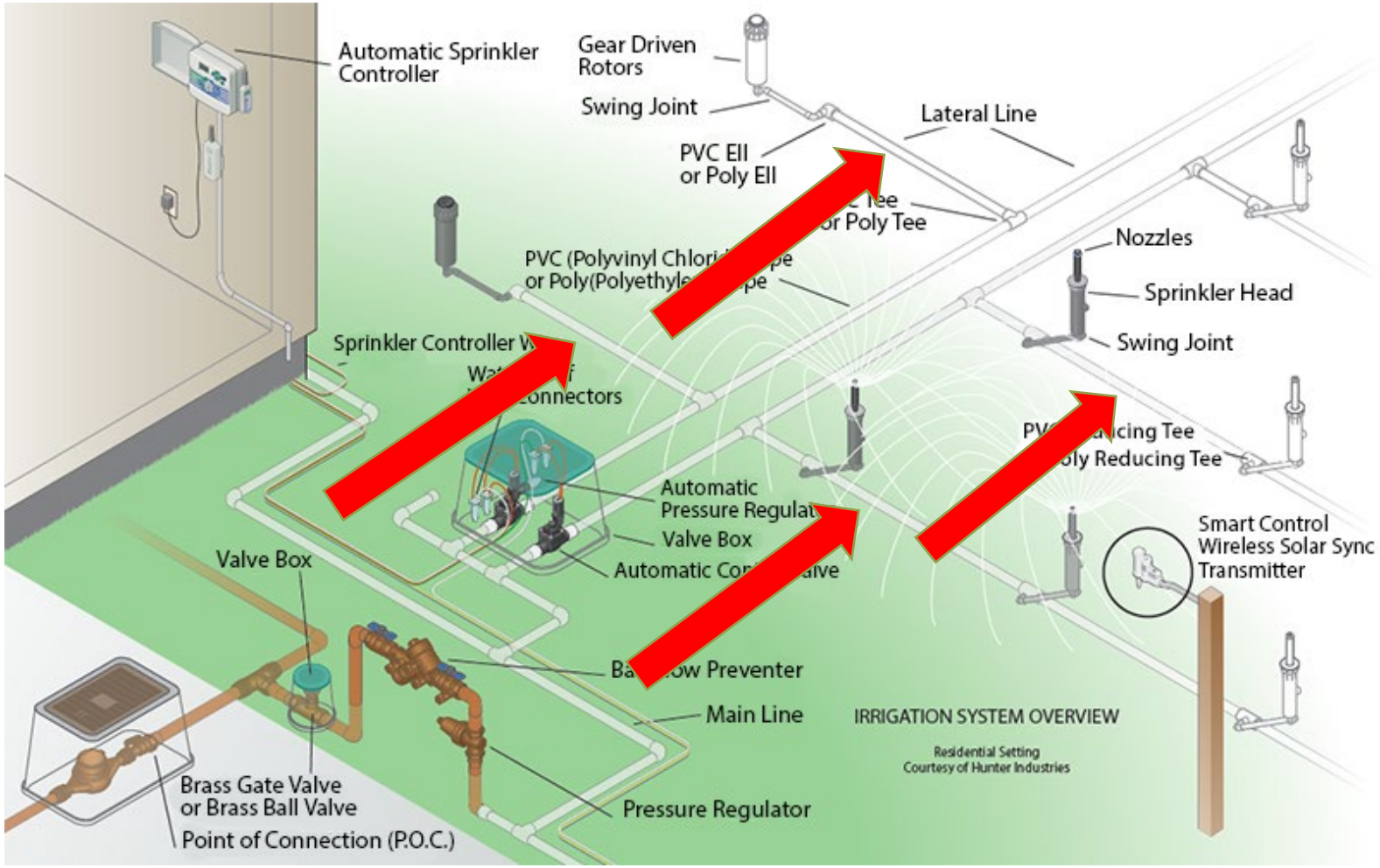
Constantly pressurized.

Should be larger size than lateral lines.

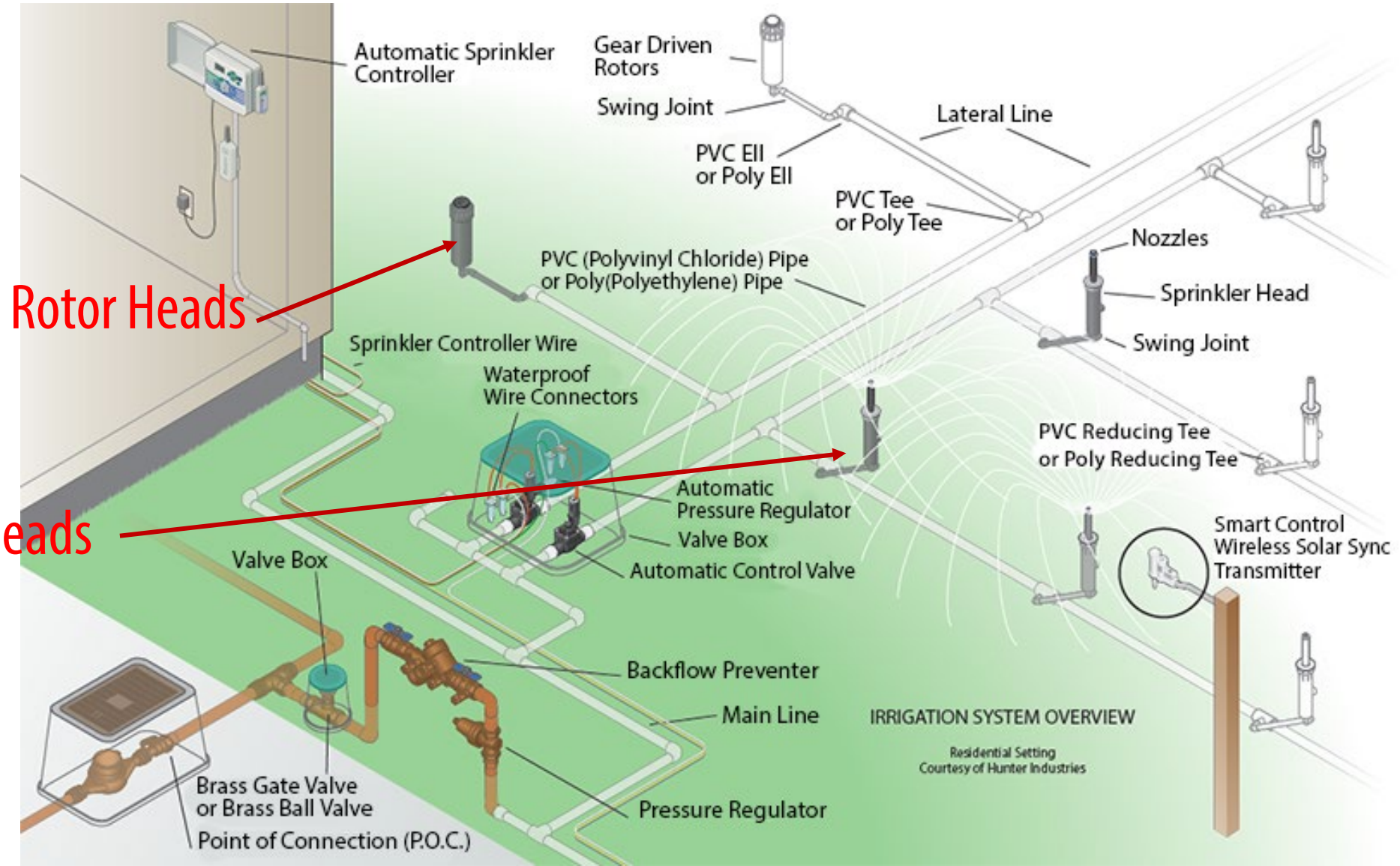


Lateral Line

Pressurized only when the valve is in operation



Anatomy of a sprinkler system

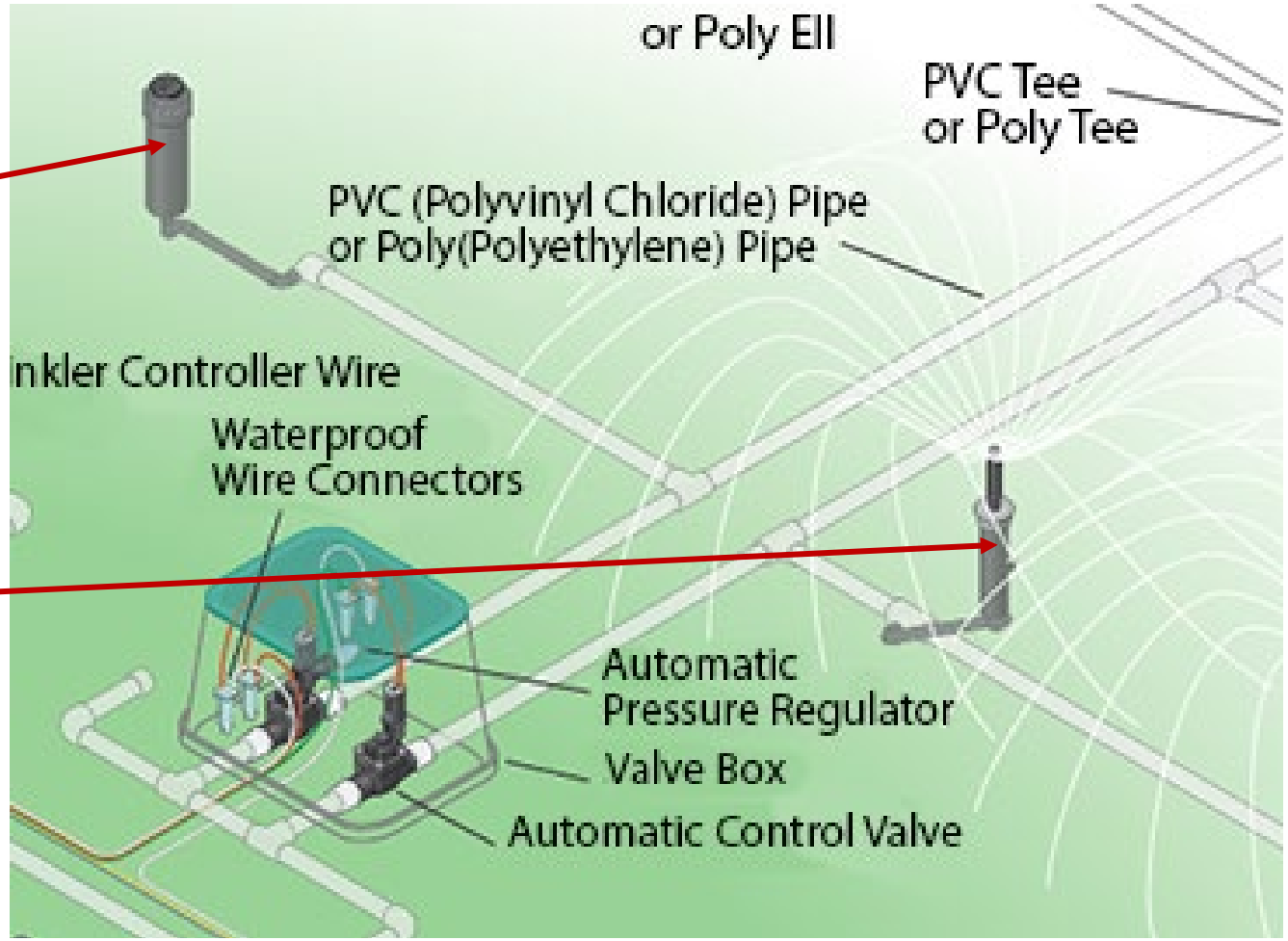


Graphic courtesy
Hunter Industries

Anatomy of a sprinkler system

Rotor Heads

Spray Heads



Graphic courtesy
Hunter Industries

Fixed spray heads

Best for small areas

Highest precipitation rates

Fixed spray nozzles

Choose from
Full
Half
Quarter
SST
U

Rotor heads

Best used in large areas

Lower precipitation rates

Rotor nozzles

Choose the right Gallons Per Minute for the area the head is covering

Rotary nozzles

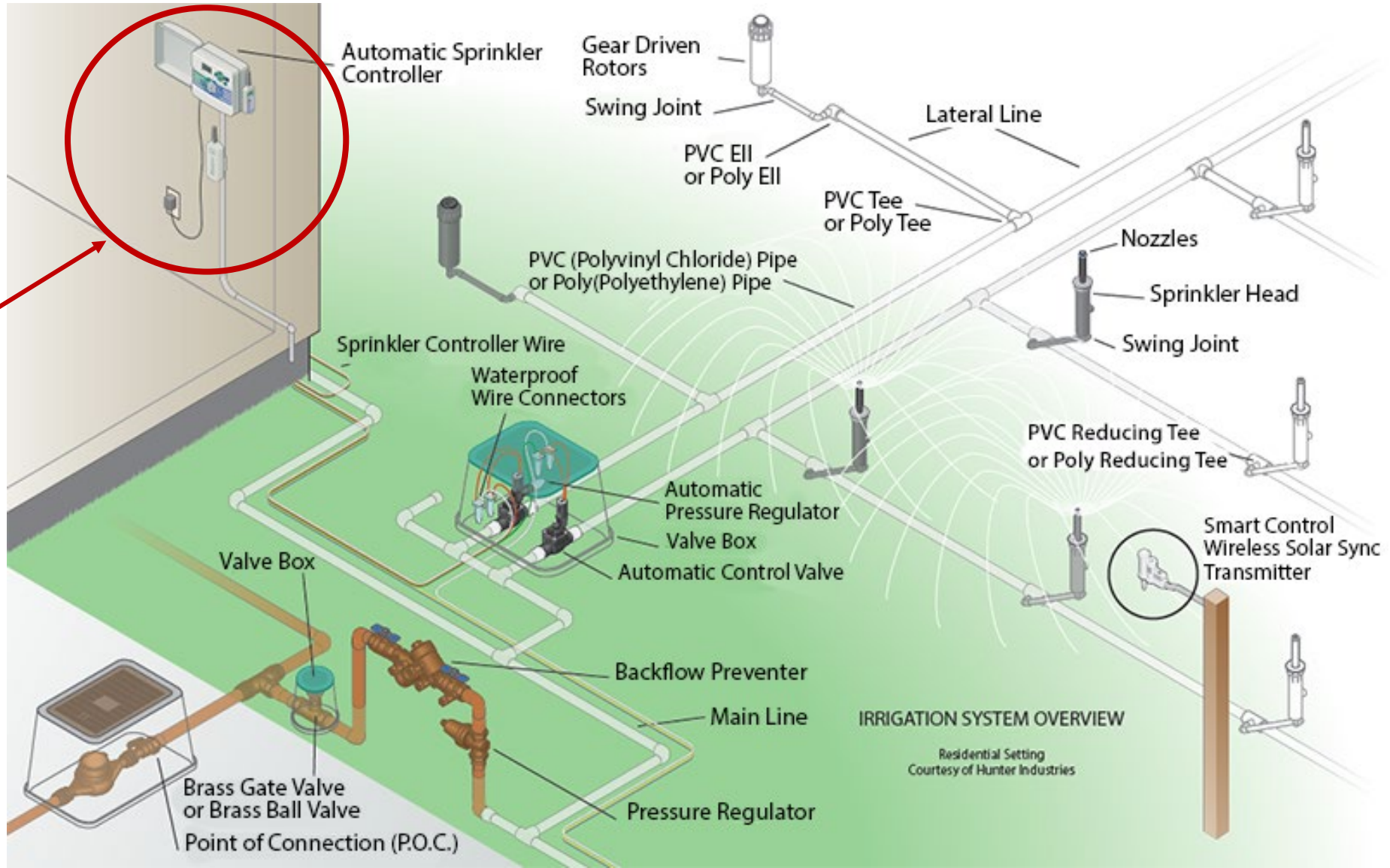
- Can be used in most area sizes
- Lower precipitation rate

Swing joints

Helps sprinkler heads be more adjustable and less prone to breaking when impacted

Anatomy of a sprinkler system

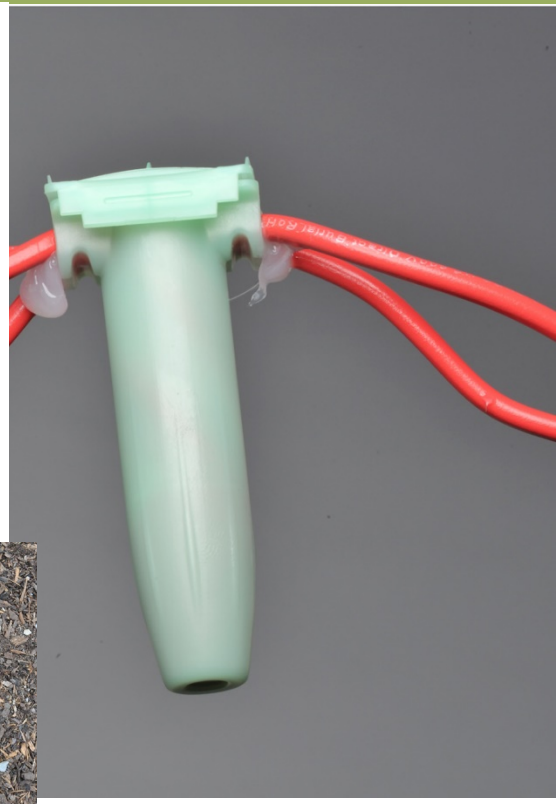
Controllers



Graphic courtesy
Hunter Industries

Wiring considerations

- Waterproof all connections
- Place extra wires/slack in the valve box
- Place under main line for protection
- Use consistent colors



Desirable controller features

- Cycle & Soak
- Day cycle watering
- Smart adjustment
- Rebates available at: http://utahwatersavers.com

Localscapes

How to install a drip system

Drip irrigation overview

- Drip irrigation allows water to flow slowly to the root systems of the plants.
- Very little water is wasted because of evaporation or wind.
- Helps with weed control.
- Easier to install or change.

All drip systems need:

Drip irrigation types

Localscapes
Localscapes.com

In-Line Drip

Point Source Drip

In-line drip

Localscapes
Localscapes.com

Best Practice

In-line drip is best for high density plantings.

In-line emitters

- Drip emitters built directly into the lines.
- This is meant to water the entire planter bed evenly.
- Installed on the surface of the soil under a layer of mulch.
- Maintenance of this style of drip line is easy.

Point-source drip

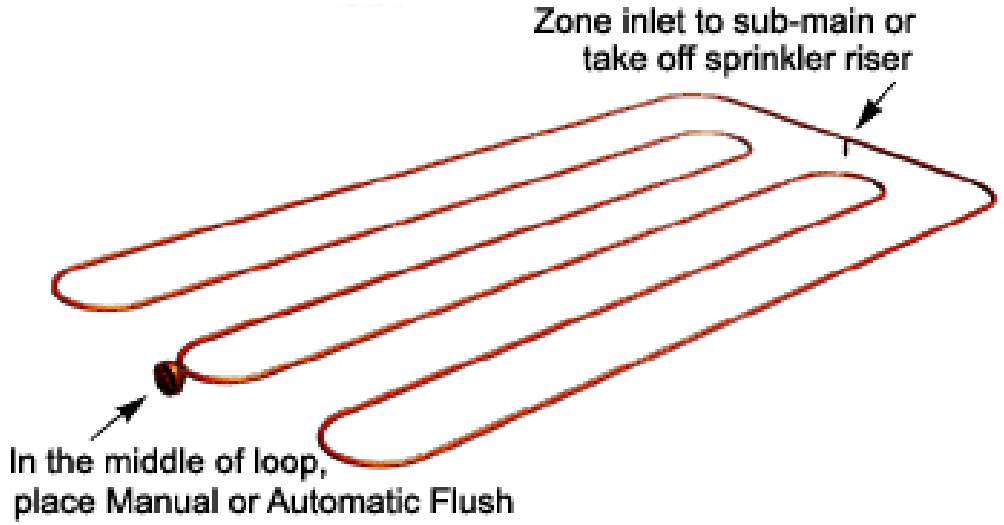
- Drip emitters are attached to the main line with distribution tubing.
- Emitter is meant to water individual plants.
- Installed on the surface of the soil under a layer of mulch.
- This is the best approach for maximum weed control.

Point-source drip

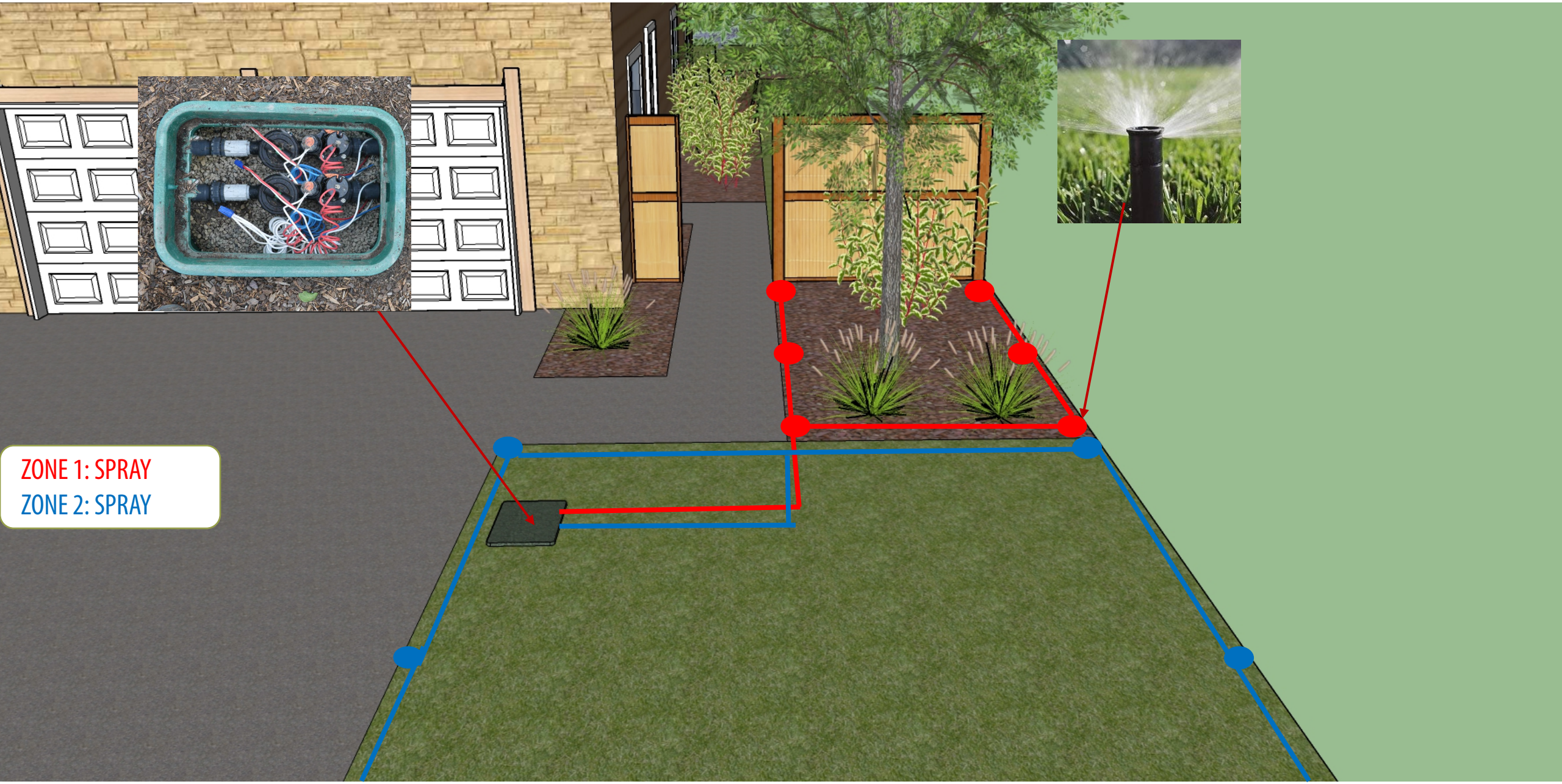
Point-source drip works well in low-density plantings.

Drip system considerations

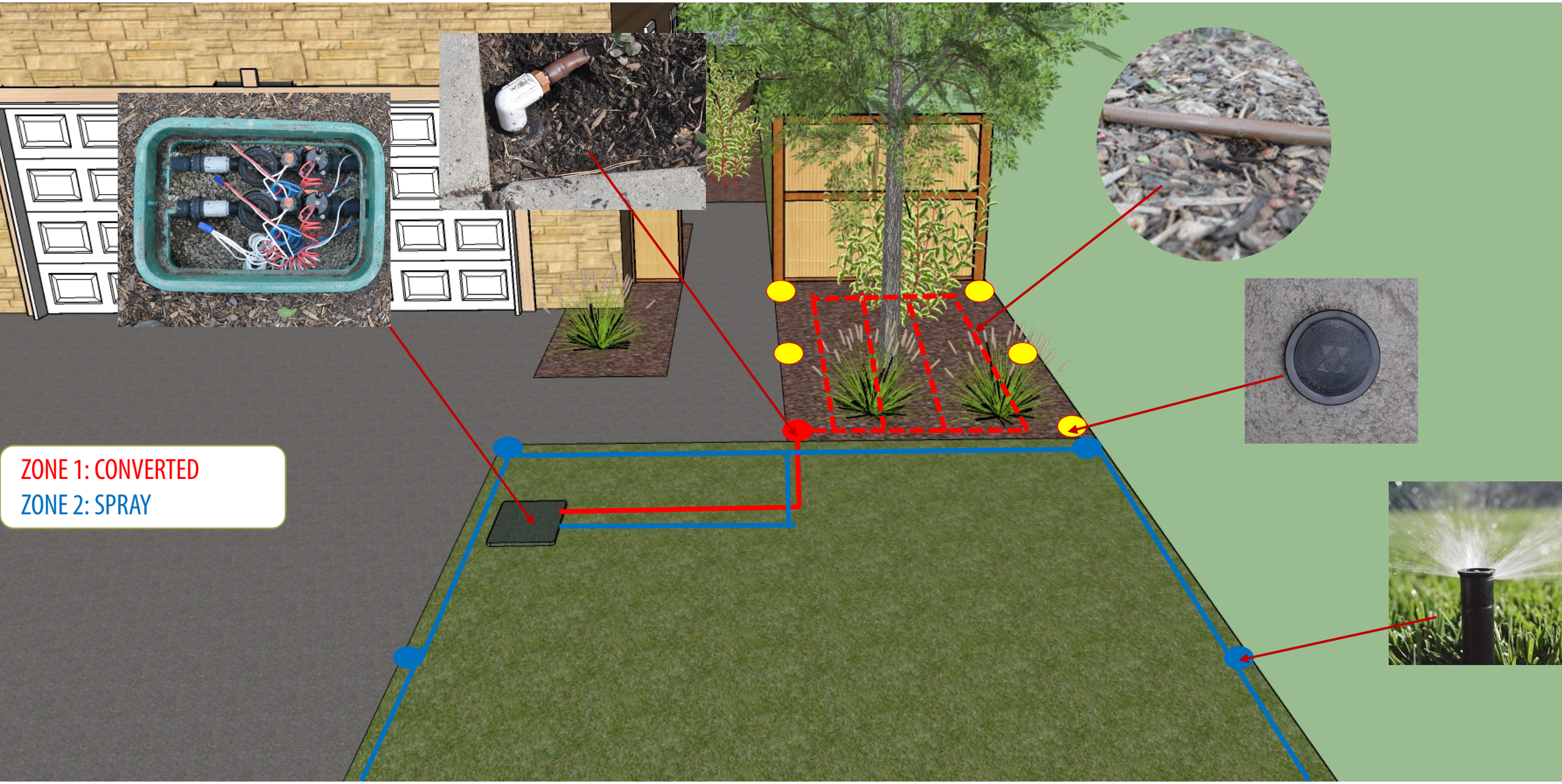
- Limit tubing runs to 200 feet
- Secure tubing with metal stakes
- Water deeply (between 1 and 2 hours)



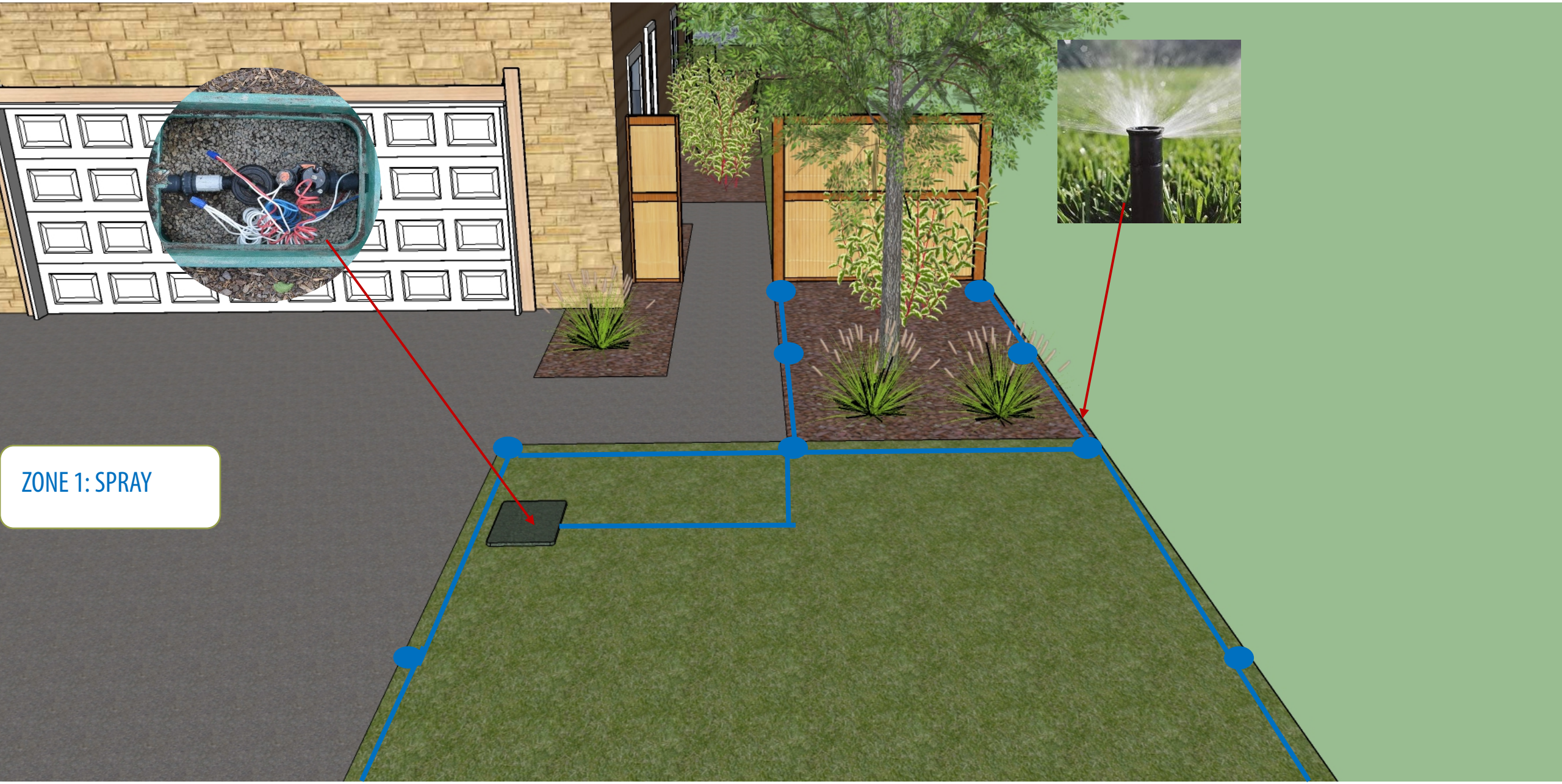
Scenario 1: Planter bed watered with spray separate from lawn



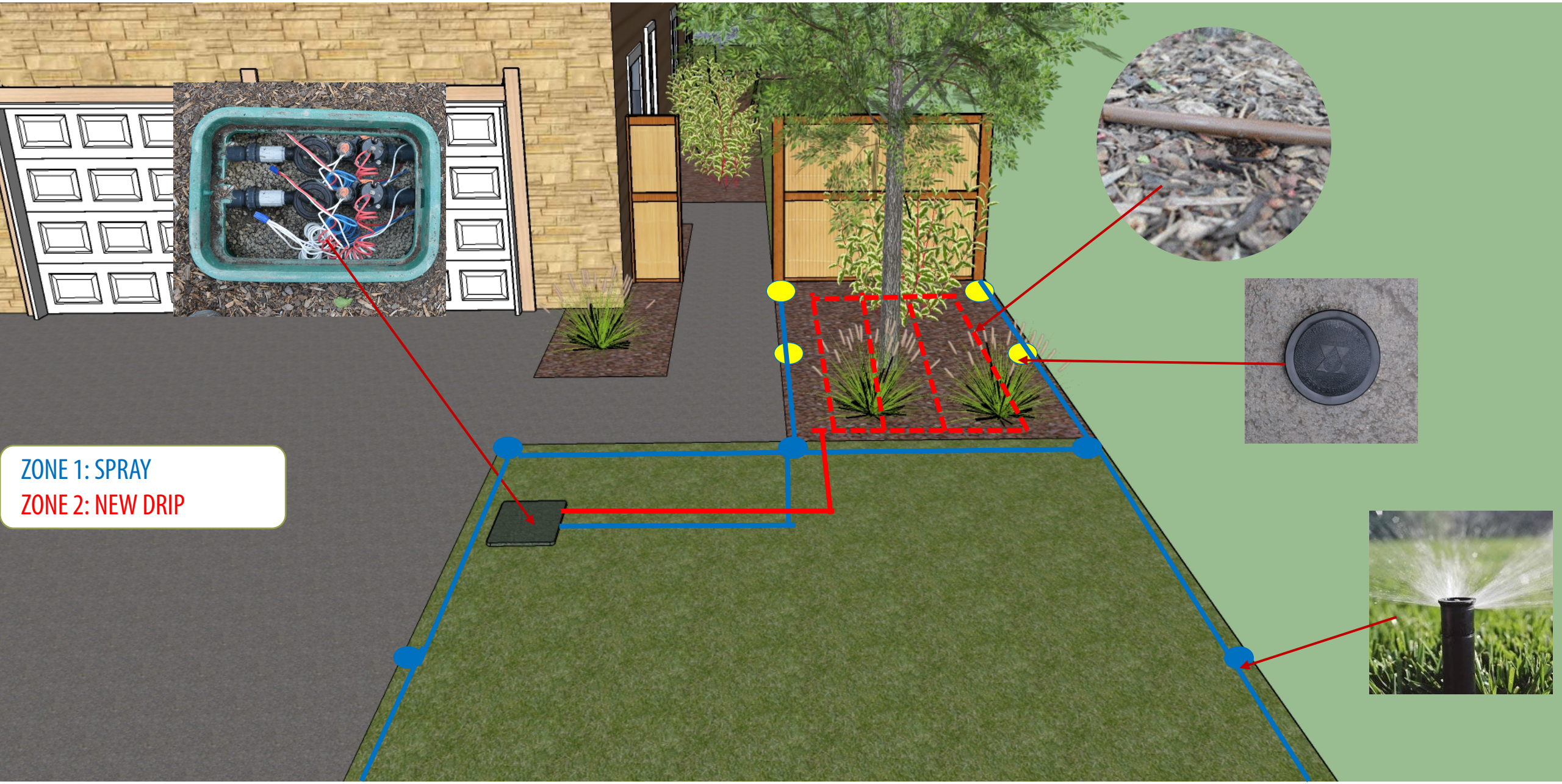
Scenario 1: Planter bed converted to drip



Scenario 2: Planter bed and lawn on the same zone



Scenario 2: Planter bed and lawn different zones by adding a valve



Discussion and Set Up

- Drip Irrigation for Veggies/Raised Beds
- Leaks
- Repairing broken items
- Relocating Heads as Turf is removed
- Conversion from Spray to Drip
- Scheduling over the summer
    - (Consider your soil reservoir and how often it needs filled/ how fast it drains for the plants/evaporation/transpiration)
- Fittings and Glue
- All other issues and parts

Questions ?

- You can do this
- Water Management is our personal responsibility
- Proper irrigation will result in healthy landscaped and a reduction in landscape water use.

- Thank You for Coming- Go help others with your knowledge when you can.