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## Spray to Drip Conversion

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## Fort Collins Utilities Irrigation Specialist

- Certified Irrigation Designer
  - CID & CLIA
- Water code enforcement
  - Wasting water
- Irrigation plan review
  - Land Use Code
- Sprinkler audit program
  - Technical advisor / trainer
- Sprinkler rebate program
- Irrigation Association instructor
- WaterSense Partner

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Watering lawns since 1871

Sprinklers are designed to replenish water lost through Evapotranspiration (ET)

Historically, sprinkler systems average 50% efficient applications

Irrigation Association – Water use education and irrigation training

- What was it designed for?
  - Is it working for you?
  - Does it invite?
  
- Are there ways to benefit from the landscape?
  - Solitude
  - Family
  - Entertaining
  - Pollinators
  - Veggies





## Land Use Codes

- Limit turf
  - Gallons per square ft.
- Irrigation
  - Plan review
  - Site inspections
  - Efficiency tests
- Rain Gardens
  - Filter, improve water
  - Reduce pollution
- Natural areas
  - Buffer areas
  - Native grasses

- Are there zones you don't use?
- Are there areas that are difficult to maintain?
- Does the system perform poorly?
- Is it expensive to operate?
- Would you like to reduce weekly mowing?



## Controller

- Brain of the system
- Wires to valves

## Backflow device

## Mainline

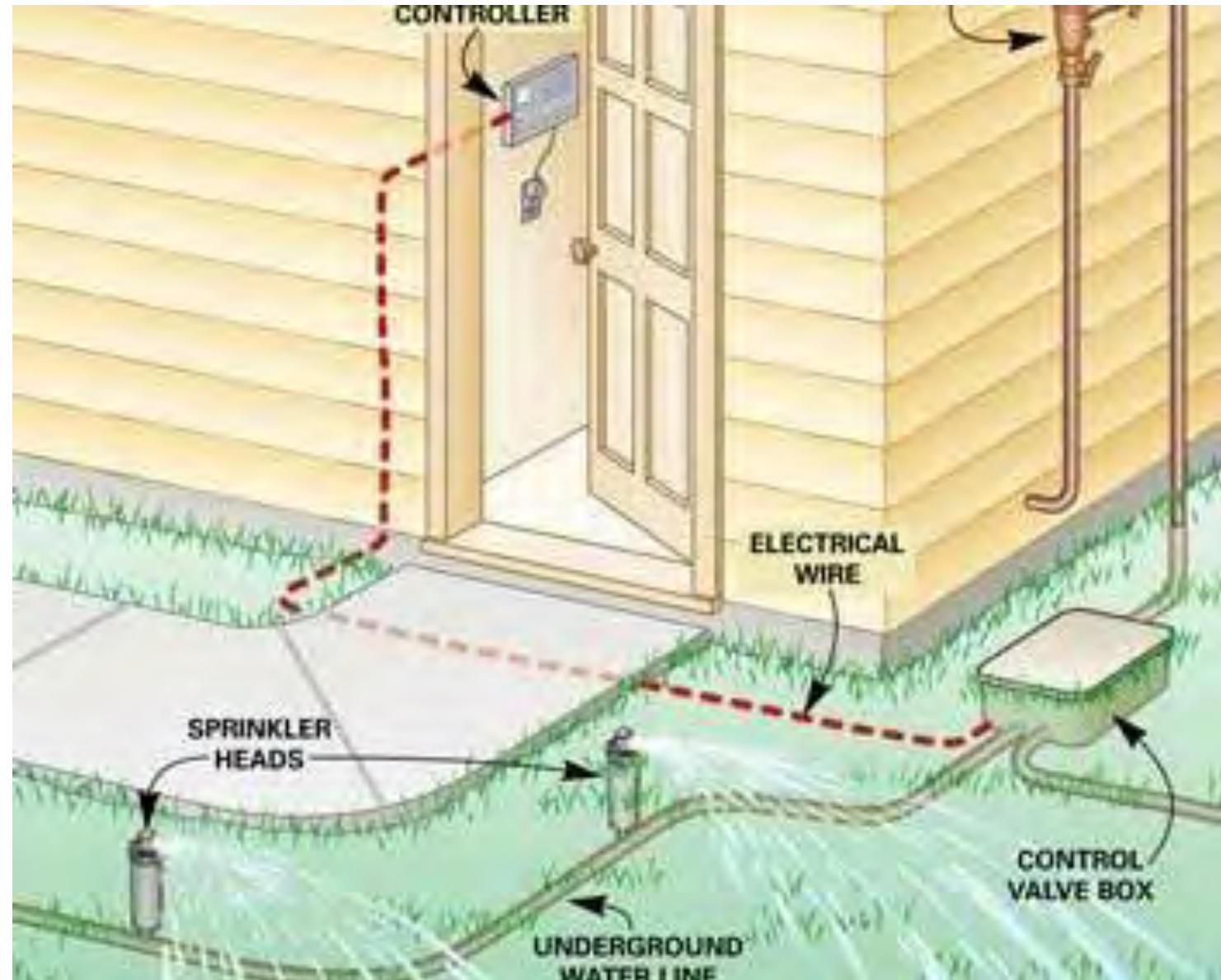
- Backflow device to valves

## Valves

- send water to heads

## Heads

- Apply water





- Two types of heads for turf:
  - Spray heads
  - Rotor heads
    - **New rotary nozzles!**
- Drip systems
  - Multiple uses
  - Many applications





## Spray and rotor

- Water pressure
  - Spray 30 psi = throw 15'
  - Rotary and rotor 50 psi = throw 30'



## Drip system

- Require certain pressure
  - 20- 40 psi
- Require water filter
  - Drip emitters
  - Micro sprays



- No watering restrictions
- Consistent water = happy plants
- Prevents weed germination
- Foliage remains dry = less disease and leaf burns
- Great for odd shapes and narrow areas
- Prevents water damage to house and fence lines





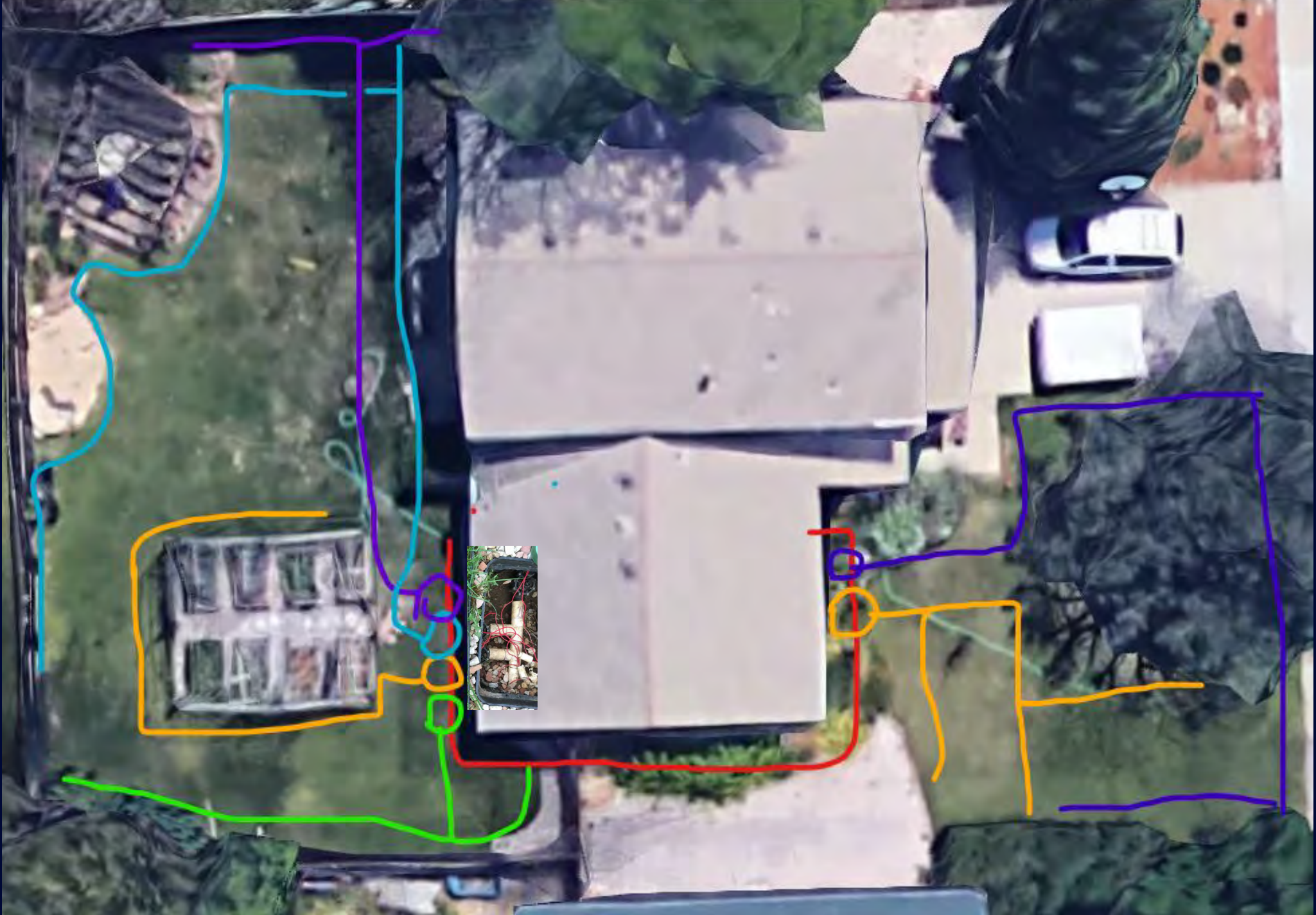
## Residential home

- 6 zones – all turf
- 1 zone abandoned after installation of shed





- **Red** – mainline
  - Delivers water to valves
- 6 total valves, all turf
- Back yard **purple** zone – abandoned because of shed
- Vegetable garden, hand watered
- Back yard – **purple** zone to be converted for veggie garden





- I.D. valve to convert
- Locate valve
- Locate Lateral line
  - Poly line after valve
- Dig clean holes
- Install drip regulator and filter
- Drive to nursery
- Enjoy your drip system



Which zone on the controller is affected?

Carefully look inside controller

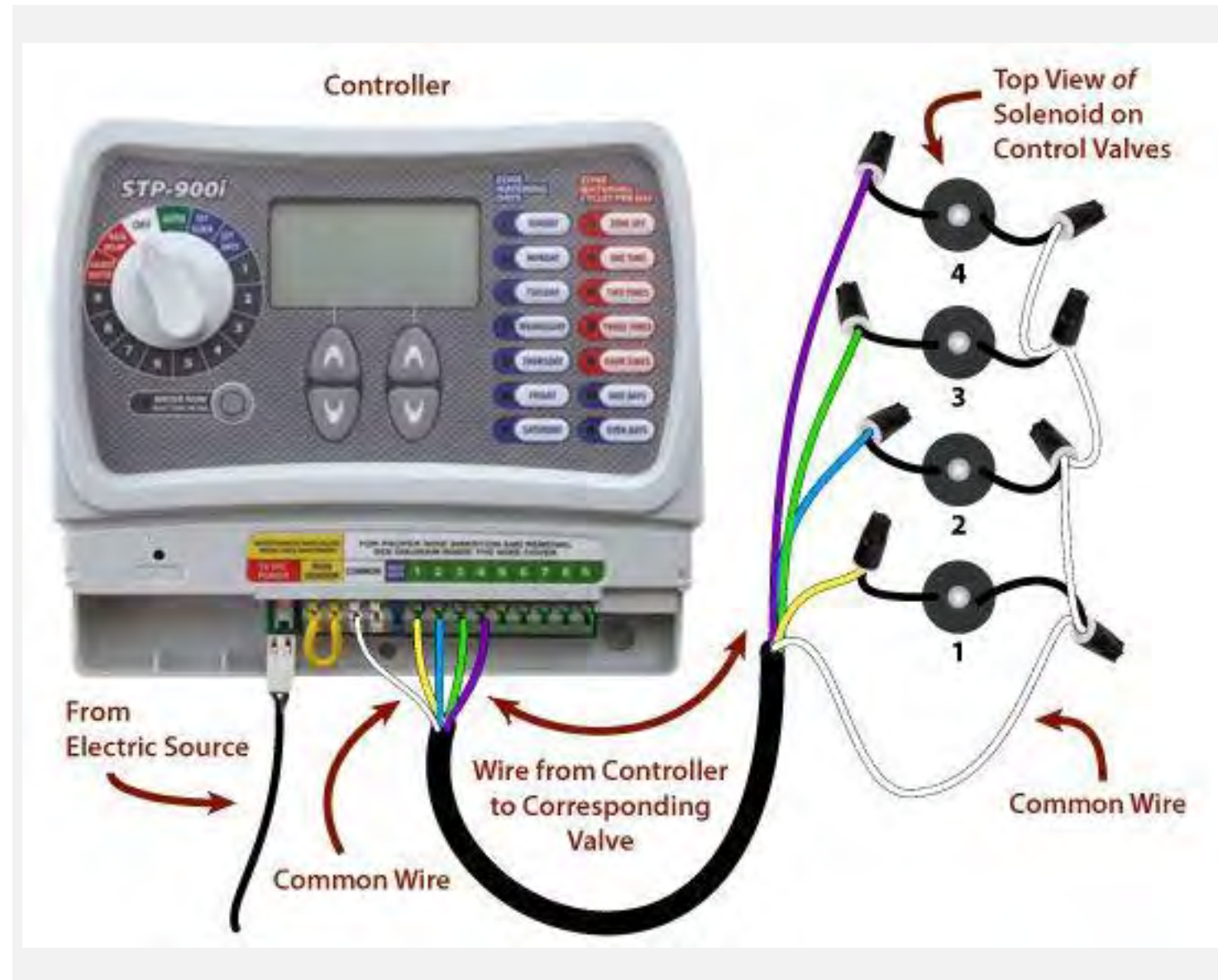
What **color** is the wire in the controller?

Are there spare wires inside the controller?



## Investigate...

- Look at the controller wires
- The colors will correspond with the colors inside the valve box
- Each valve will have 1 valve wire and 1 common wire





Landscapes grow and hide valve boxes, look for green lids in turf or flower beds

Some valve boxes hold every valve at base of backflow device

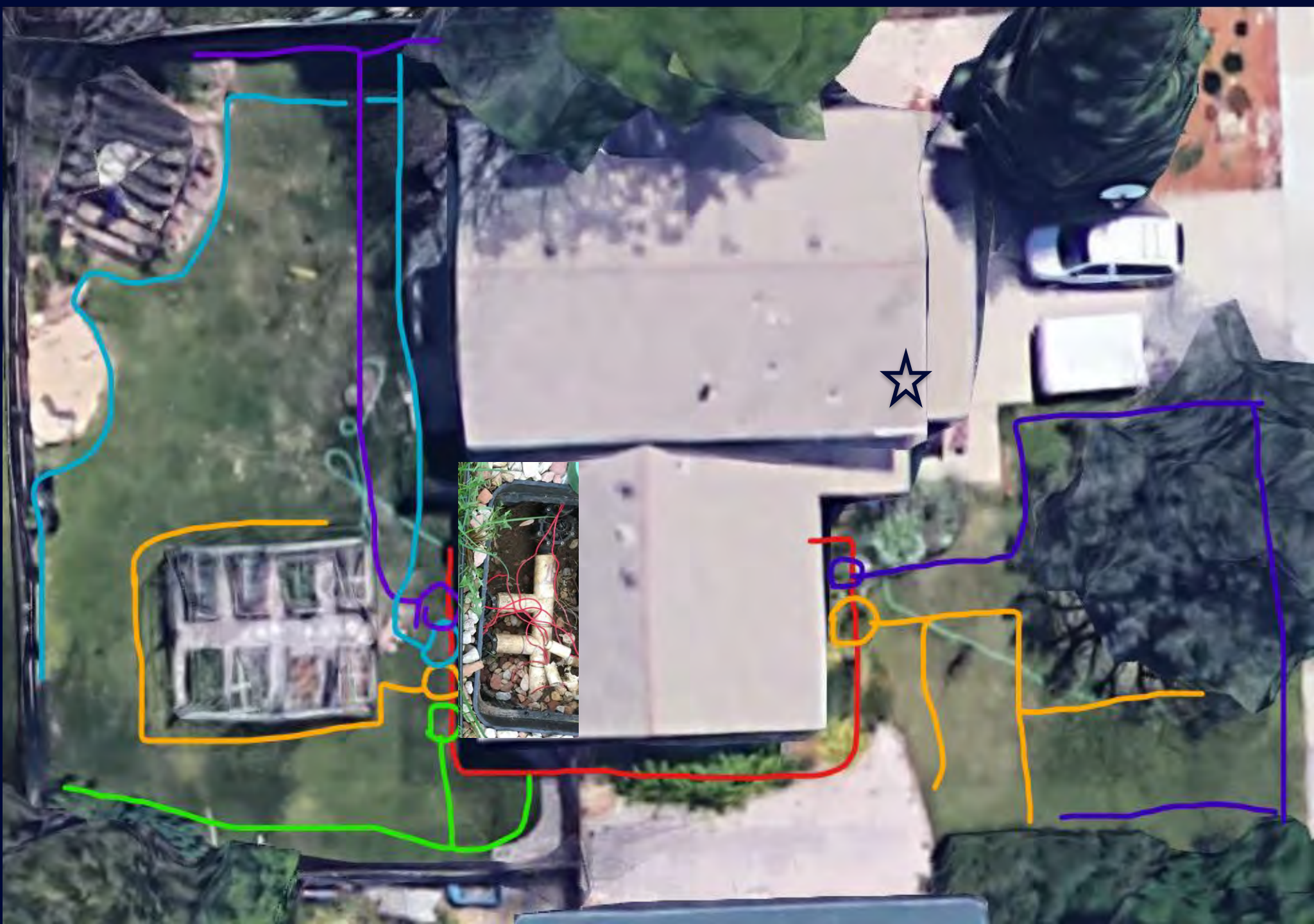


Valves are connected to mainline

- Under constant water pressure

Screwdriver to open valve box lid





## Identify zone valve

- color of wire corresponds on controller
- Test valve to confirm
- Identify valve wire - tape

## Carefully dig to lateral line

- Dig out small pieces of sod
- Keep pieces together
- Line will be roughly the same depth throughout



Keep the sod in manageable chunks next to the trench, use a tarp/rag to catch loose dirt



- Identify lateral line for valve outside of valve box
- Determine direction of line
- Decide where drip line connection should be made



- Lateral line runs just past garden area
- Locate valve box just outside garden area







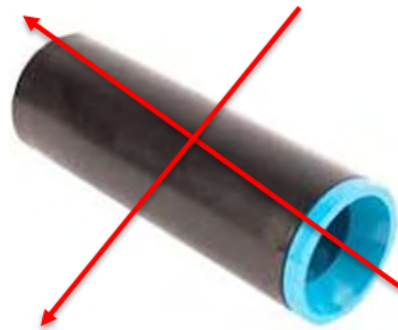


- Measure depth and width of valve box and complete hole to fit valve box inside
- Assembly pressure regulator and filter combo above ground
  - The arrow on the regulator is the direction of flow





- Apply three rotations of thread tape to insert fittings on pressure reducer – in the direction of the threads
- DO NOT USE COMPRESSION COUPLERS!!
- Tighten with a channel locks







Install pressure reducer and wye screen combination filter to lateral line

Use insert fittings and clamps for underground connections

Dig clean holes!

- **Sleeve** any section of the drip line with poly pipe or pvc
- Drip lines will collapse under ground without a sleeve
- Use insert fittings underground
  - NOT compression fittings!











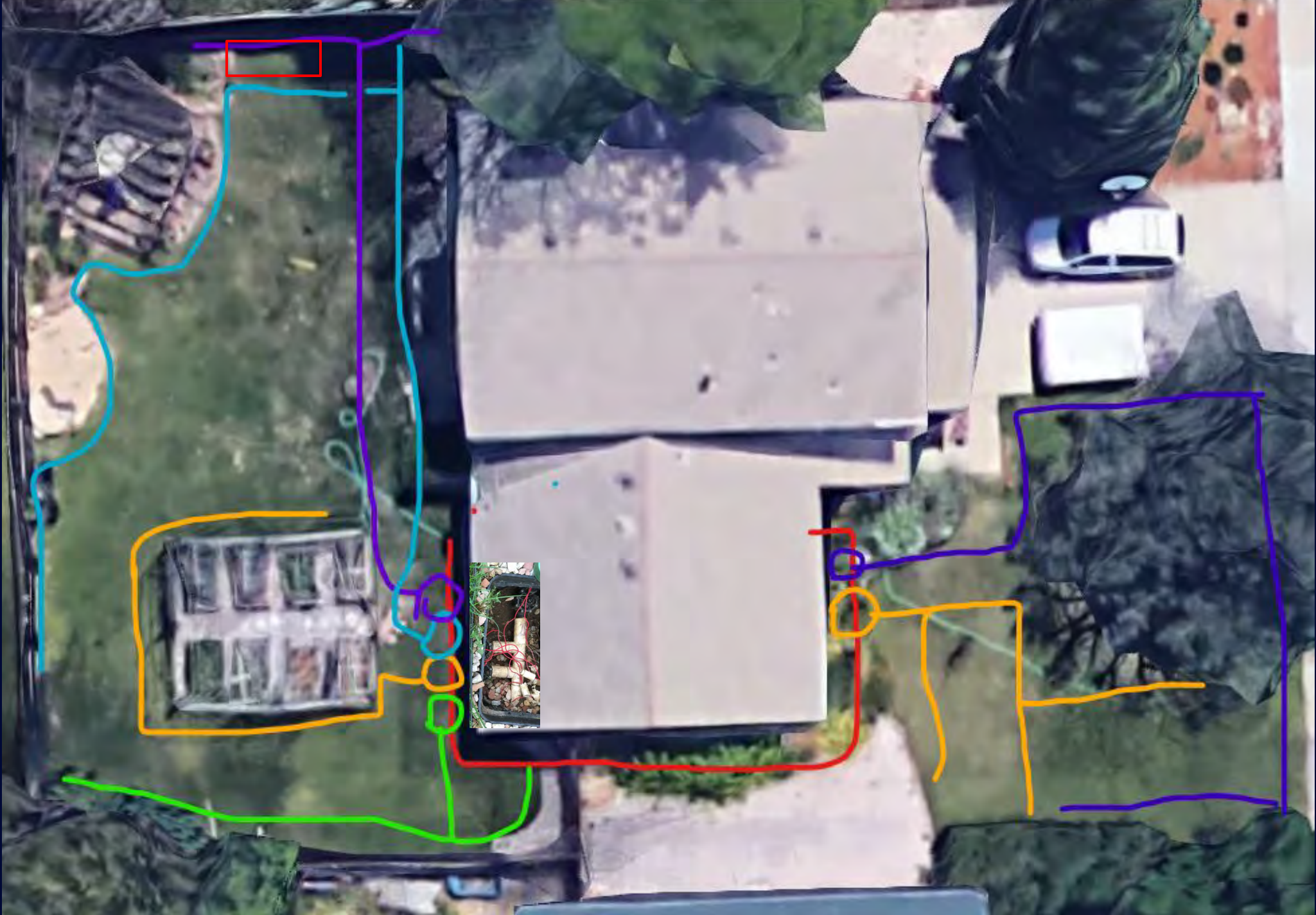
Homeowner Example



## Shed

- Considering flowers around shed area and fence line
- Use hose for veggies





Drip conversion heads use an existing spray head to make the transformation to drip

Ideally the last head on the lateral line should be used – two heads or more can be converted into drip

Every remaining head will need to be capped or converted



- Pressure regulator and filter are inside head body
- “Xeri-caps” to cap other heads
- Simple to install!



- Lateral lines left intact - red
- All heads are capped except conversion head(s) - white
- **\*\*Live water remains under shed or new proposed landscape\*\***



Conversion heads are easier to install, remember:

- The entire zone must be changed to drip
  - Last head = conversion
    - Winter months
  - Cap other heads
- Carefully dig around zone area
  - Fittings and caps can break
  - Live water exists in lateral lines
  - Our example: live water under **shed**





If you choose to use a conversion head, the **entire zone** must be converted

- Different water demands
  - Turf vs plants
- Don't be tempted to mix
  - Plants, turf and water bill will suffer



- Big box stores and nurseries
- Connect to hose spigot / tie into existing system
- Some provide timer, regulator and filter
- Easy set up – no tools





## Benefits of gardening

- Exercise
- Tomato yoga
- Sustainable
- Fresh veggies!

## Useless turf – Nice trees

- 30,000 gallons annually
- Turf donated to Parks
- Water < 8,000 annually













# Parkway Strips





## Moisture wicking materials

- Spreads water in poor soils
- Test plot – West Drake





## City of Fort Collins Parks

### Pilot Area

2 subsurface drip applications  
for turf.

Parkway strips along Drake



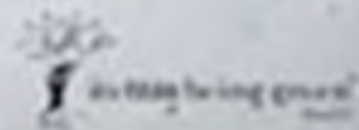
Landscape transformations and alternative landscapes are gaining attention!

Gardens on Spring Creek

Xeriscape Incentive Program (XIP) – Fort Collins Water

Thank You!

Landscapes do not waste water  
people do.





Thank you!

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