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Eric Olson

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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Irrigation / Sprinkler Systems

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

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Modern Landscapes

- 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

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Landscapes... Adjusting

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

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How's Your Sprinkler System?

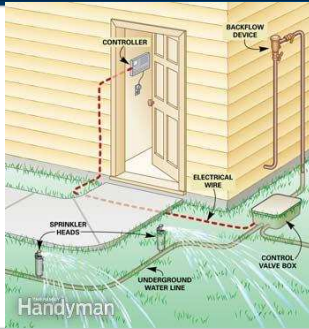
- Are there zones you don't use?
- Are there areas that are difficult to maintain?
- Does the system perform poorly?
- Is it expensive to operate?
- Would you like to reduce weekly mowing?

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Sprinkler System Components

- Controller**
 - Brain of the system
 - Wires to valves
- Backflow device**
- Mainline**
 - Backflow device to valves
- Valves**
 - send water to heads
- Heads**
 - Apply water



Handyman

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Sprinkler System, Basics

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




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Water Pressure



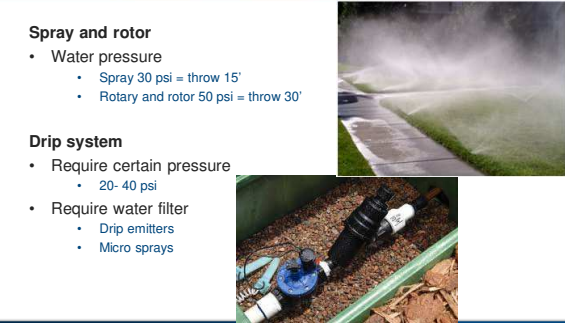
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Water Pressure

- 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



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Rotary Nozzles

- Manage high water pressure better!
 - Less water waste
- Radius improved
 - From 8' - 30'
 - Improve coverage / designs
- Really fun to watch



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Saved by Rotary Nozzles

Rotary nozzles make it easier to extend existing zones coverage

- Thread into spray heads
- Offer up to 30' radius
 - Short throws
 - Odd angles

Interested?
Look for GOSC class :
Rotate to rotary nozzles




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Drip Advantages

- 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



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Spray to Drip



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Spray to Drip Example

Residential home

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



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- 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 used for veggie garden

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Your Mission

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



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Controller

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?

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Controller Wires

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

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Where's the Valve?

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

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Valve Identified

- Valves are connected to mainline
 - Under constant water pressure
- Screwdriver to open valve box lid

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Valve to Lateral Line

- 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

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Dig Clean Holes

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



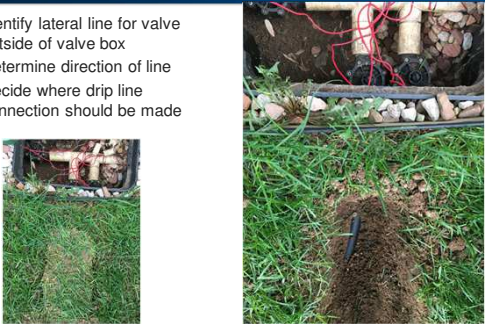
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Lateral Line

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




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Determine Location

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



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Prepare Hole for Valve Box



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Connect to Lateral Line

- 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



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Attach Regulator and Filter

- 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



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Make Connection

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Make Connection

Install pressure reducer and wye screen combination filter to lateral line

Use insert fittings and clamps for under ground connections

Dig clean holes!

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Sleeve Drip Line!!!

- 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!

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Complete

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Spray to Drip

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Homeowner Example

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



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Method # 2

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

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Drip Conversion Heads

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

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Drip Conversion #2

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

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City of Fort Collins **Considerations**

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




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City of Fort Collins **Drip Conversion = All or Nothing**

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



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City of Fort Collins **Drip Kits**

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



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City of Fort Collins **Drip Systems**



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City of Fort Collins **Community Veggie Garden**

Benefits of gardening

- Exercise
- Tomato yoga
- Sustainable
- Fresh veggies!





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City of Fort Collins **Circle Island**

Useless turf – Nice trees

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



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Parkway Strips

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New Drip Technologies

Moisture wicking materials

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

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Field Testing

City of Fort Collins Parks

Pilot Area
2 subsurface drip applications for turf.

Parkway strips along Drake

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Eyes Open

Landscape transformations and alternative landscapes are gaining attention!

Gardens on Spring Creek

Great place to see landscape examples and varieties

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Thank You!

Landscapes do not waste water people do.

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Please Support the Gardens on Spring Creek

Eric Olson
eolson@fcgov.com

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