How to Install a Laundry-to-Landscape Greywater System

Watershed Management Group

Overview

- Greywater in AZ
- Diverting/directing greywater away from sewer (indoor)
- Distributing/Irrigating (outdoor)
- Pairing production with need
- Upkeep

Greywater in Arizona

- Single Family Homes that produce less than 400GPD
- No fees, permit applications, or inspections
- Following 13 Best Management Practices is required (set by ADEQ)
- Systems that don't follow greywater guidelines are subject to inspection
- Tucson Water greywater rebate program

Gray Water Rebate

Gray water is wastewater collected from the drains of hand-washing sinks, showers, bathtubs and clothes washing machines. Of the total amount of wastewater generated in a typical home, 12% is from clothes washers, 10% is from faucets, and 9% is from showers. That's a total of 31% that can be re-used as gray water for landscape plants, fruit trees, and lawns.

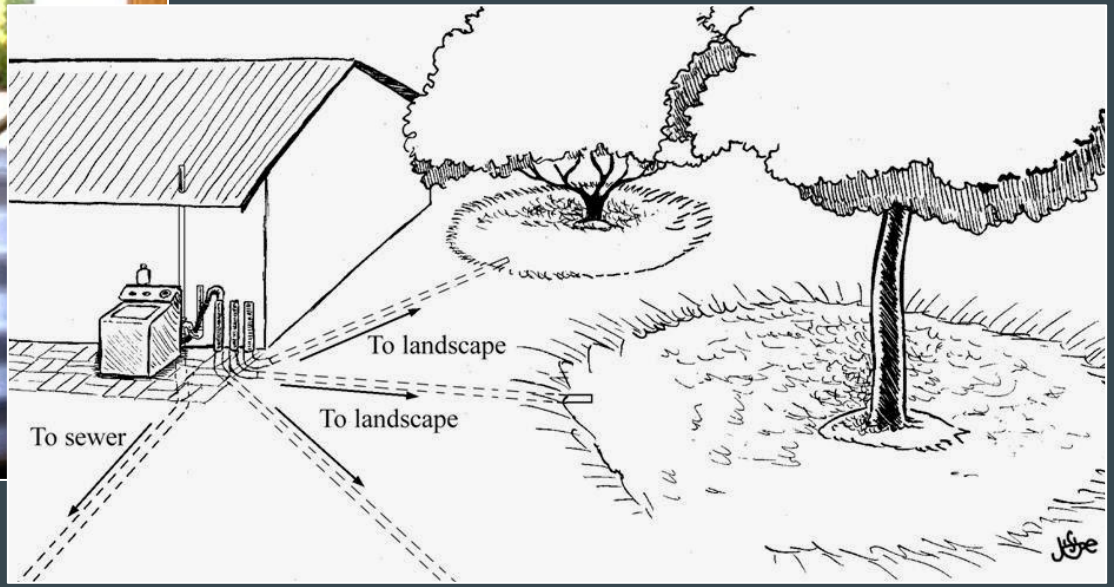
Tucson Water's Single Family Residential Gray Water Rebate Program will reimburse you up to $1,000 when a permanent gray water irrigation system is installed in your home.

Applicants must submit a W-9 form for rebates of $600 or more, which are subject to tax, and will be issued a 1099-MISC for miscellaneous income. The W-9 form requires submitting your social security number.

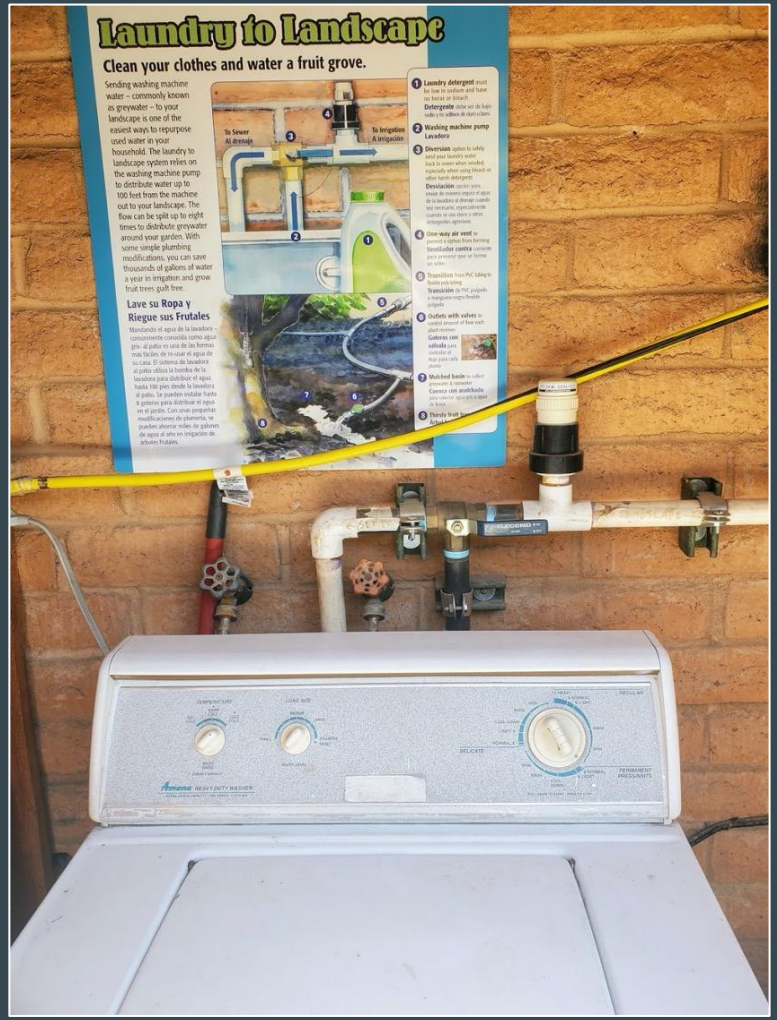
Rebate

- Half of qualifying residential gray water system costs, up to $1,000.
- Rebate funds are limited and will be distributed on a first come, first served basis.

Branched drain: laundry washer



Greywater L2L Systems



Could you watch the video?

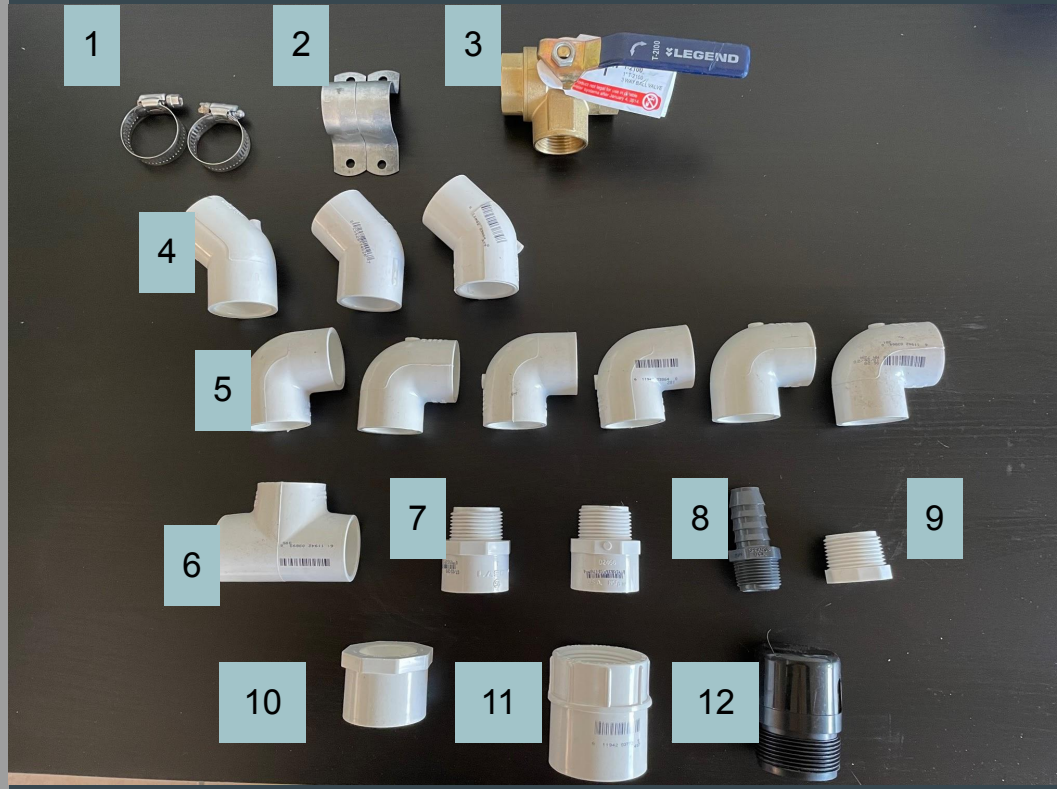
Did you sketch your setup?

What are you still curious about?

Jamboard

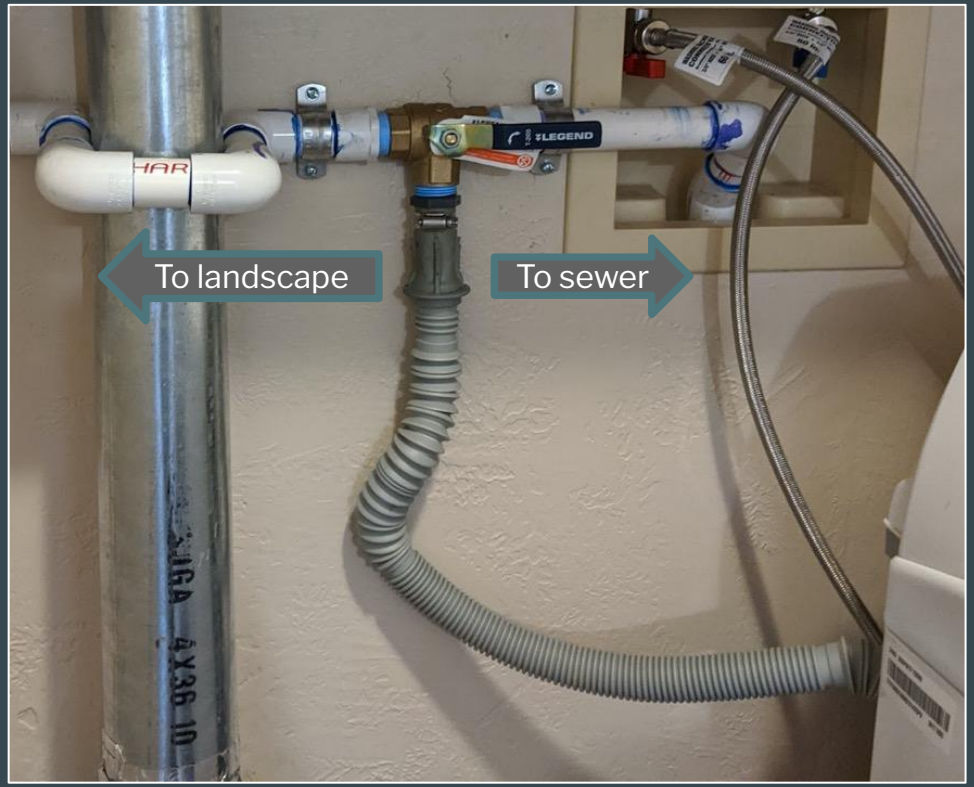
Indoor/Diversion Kit Parts

1. 1 1/2in hose clamps
2. 1in two whole straps
3. 1in 3-way Brass Diversion Valve
4. 1in PVC 45s
5. 1in PVC 90s
6. 1in PVC Tee
7. 1in SxT Male Adaptor
8. 3/4in Sch 80 Male Barbed Insert Adaptor(Inst x MPT)
9. 3/4in TxT Adaptor
10. 1 1/2in x 1in SxS PVC Bushing
11. 1 1/2in SxT Female Adaptor
12. 1 1/2in Air Admittance Valve



Indoor Plumbing Connections

- Barbed fittings have hose clamps
- Threaded parts have Teflon tape
- PVC to PVC connections have primer and PVC glue
- 2 hole straps placed close to 3-way valve for anchoring

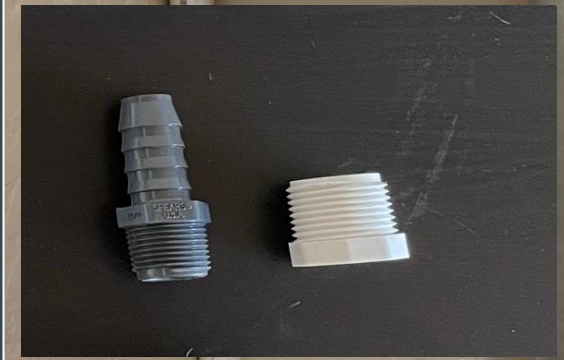


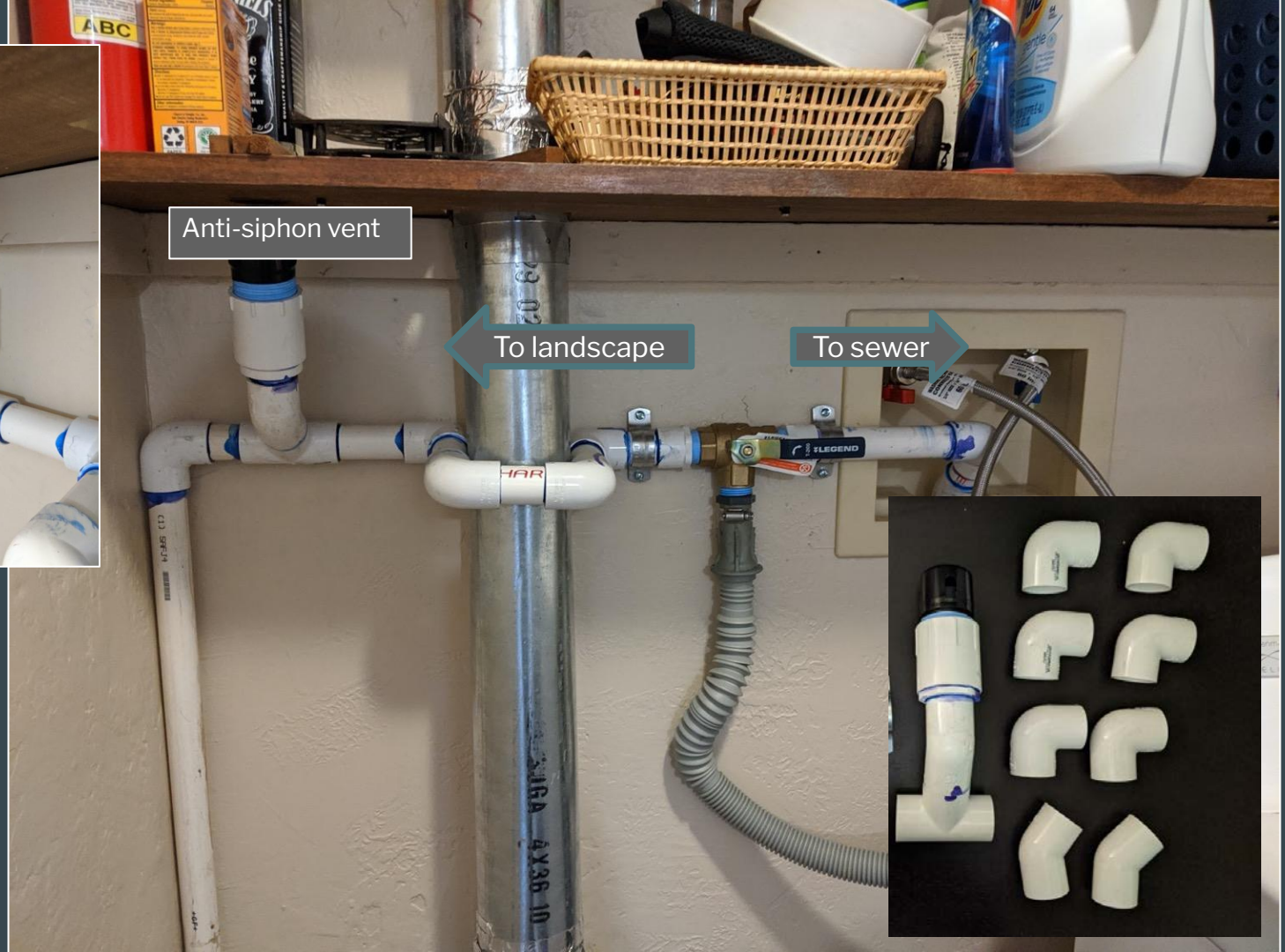
To landscape

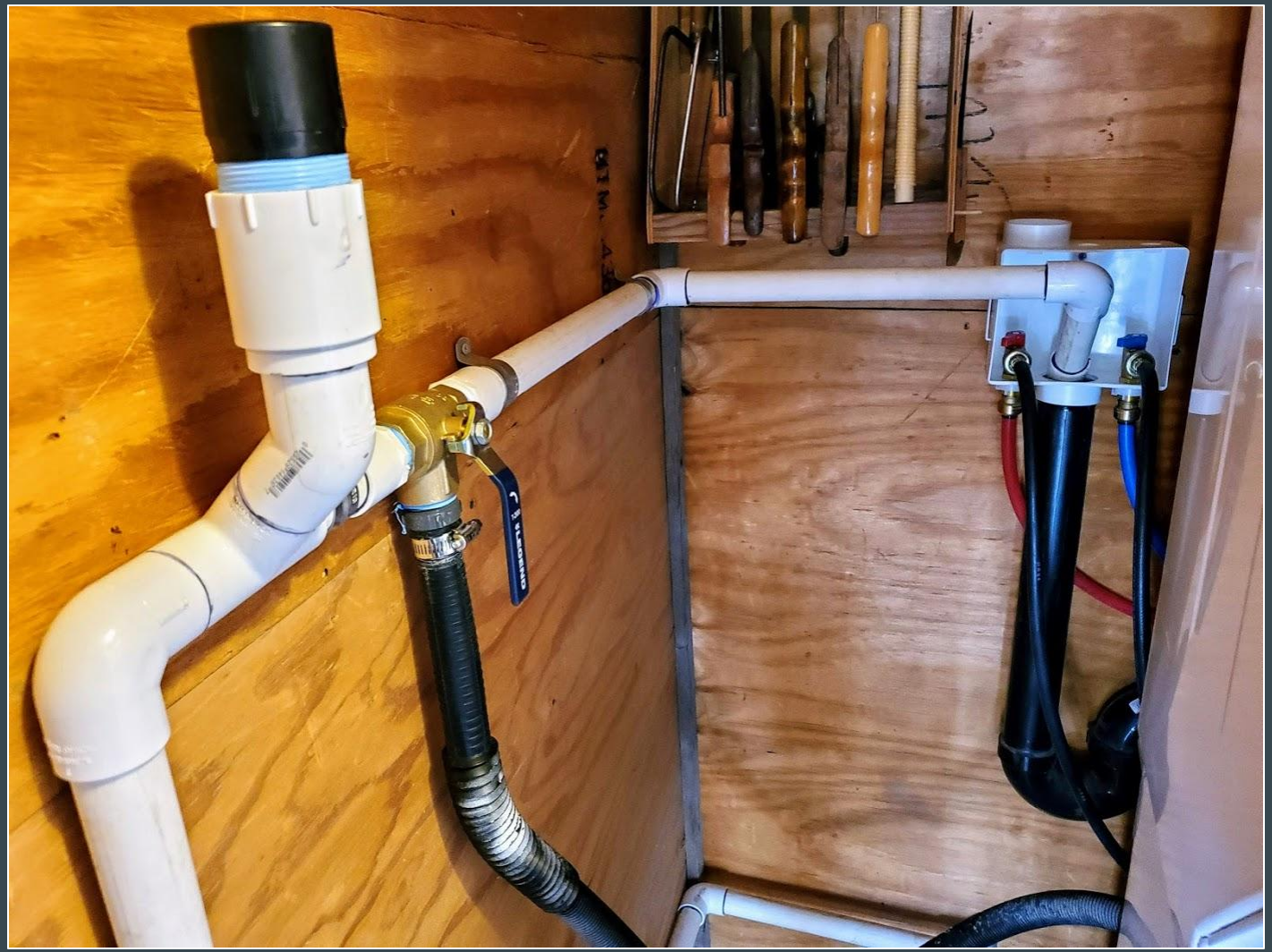
To sewer

1” 3-way Brass Valve

Hose connection




Anti-siphon vent
To landscape
To sewer
LEGEND



Laundry to Landscape

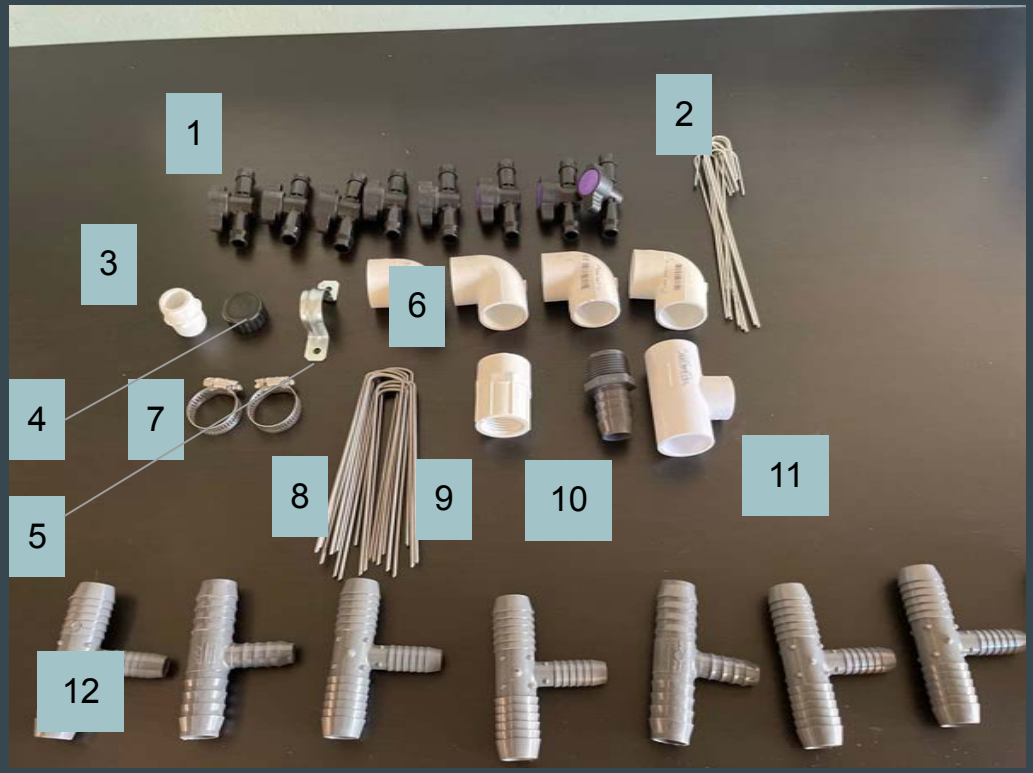
Jam Board


Admiral
LOAD SIZE
TEMPERATURE
NORMAL
CASUAL
DELICATE
START


NORMAL
DELICATE

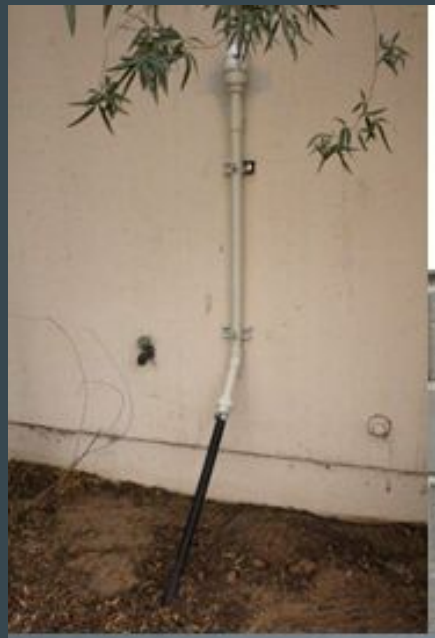
Outdoor Kit Parts

1. 1/2in Purpleback Valve
2. 1/2in Stake
3. 3/4in PVC HTxIPT Male Adaptor
4. 3/4in PVC Hose Cap
5. 1in 2-Hole Strap
6. 1in PVC 90
7. 1in Stainless Hose Clamp
8. 1in Stake
9. 1in SxT Female Adaptor
10. 1" Sch 80 Male Barbed Insert Adaptor (Inst x MPT)
11. 1in x 1in x 3/4in PVC SxSxT Tee
12. 1in x 1in x 1/2in Barbed Tee




Clean out
PVC to 1” poly tubing conversion

PVC Union




1x1x½” barbed tee
1” poly tubing as main branch
½” poly as emitter branches
½” ball valve


What happens if I close all these?


Questions?

Jamboard

Plant pairing

HIGH WATER USE / HIGH VALUE PLANTS

Plant pairing

HIGH WATER USE / HIGH VALUE PLANTS

EDIBLE PLANTS

Plant pairing

HIGH WATER USE / HIGH VALUE PLANTS

EDIBLE PLANTS

CONSIDERING PLANT DEMAND

Plant pairing

HIGH WATER USE / HIGH VALUE PLANTS

EDIBLE PLANTS

CONSIDERING PLANT DEMAND

- CALCULATING PLANT DEMAND
- CALCULATING WATER SUPPLY

Plant pairing

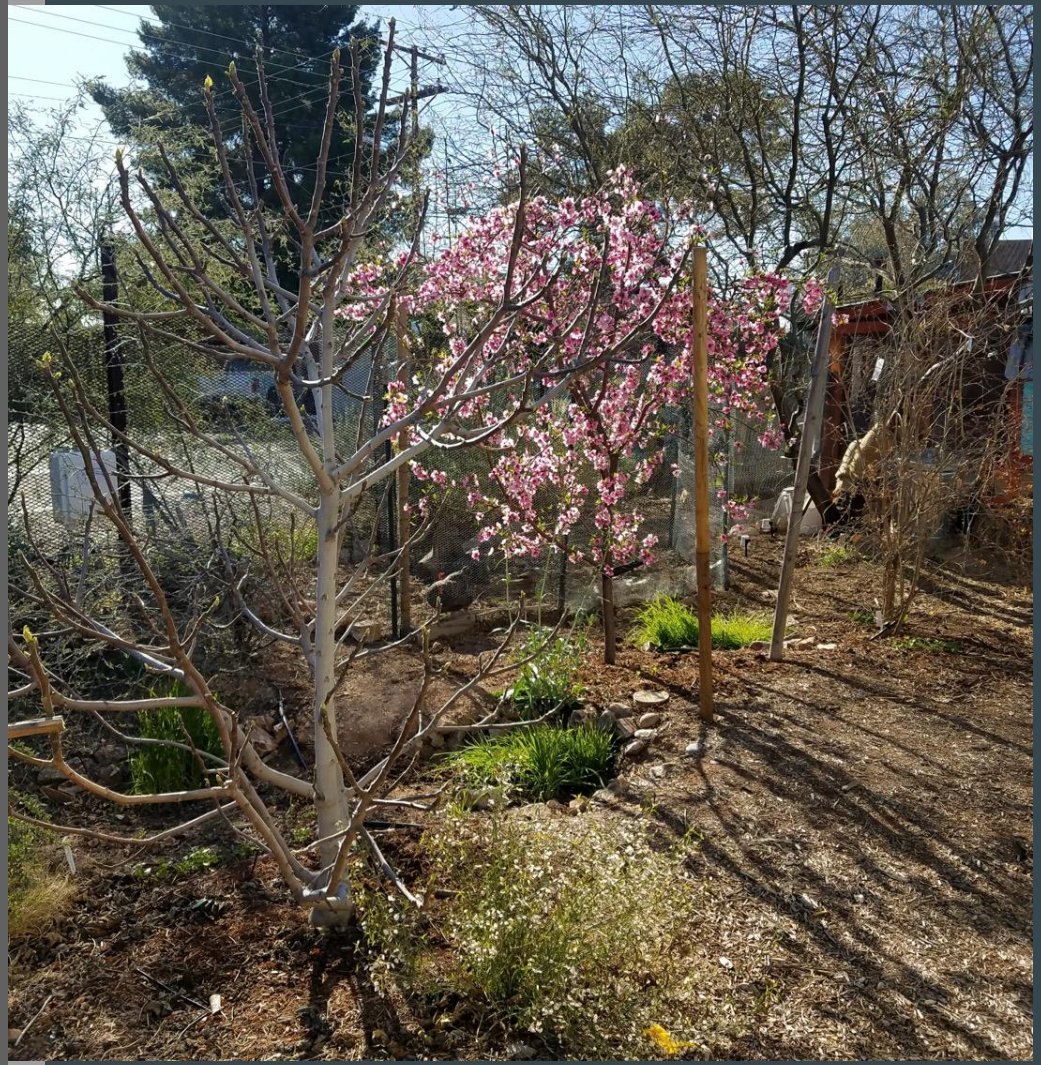
HIGH WATER USE / HIGH VALUE PLANTS

EDIBLE PLANTS

CONSIDERING PLANT DEMAND

- CALCULATING PLANT DEMAND
- CALCULATING WATER SUPPLY

CONSIDERING SEASONALITY



Plant pairing

HIGH WATER USE / HIGH VALUE PLANTS

EDIBLE PLANTS

CALCULATING PLANT DEMAND

CALCULATING WATER SUPPLY

CONSIDERING SEASONALITY FOR HUMANS TOO!

Plant pairing

HIGH WATER USE / HIGH VALUE PLANTS

EDIBLE PLANTS

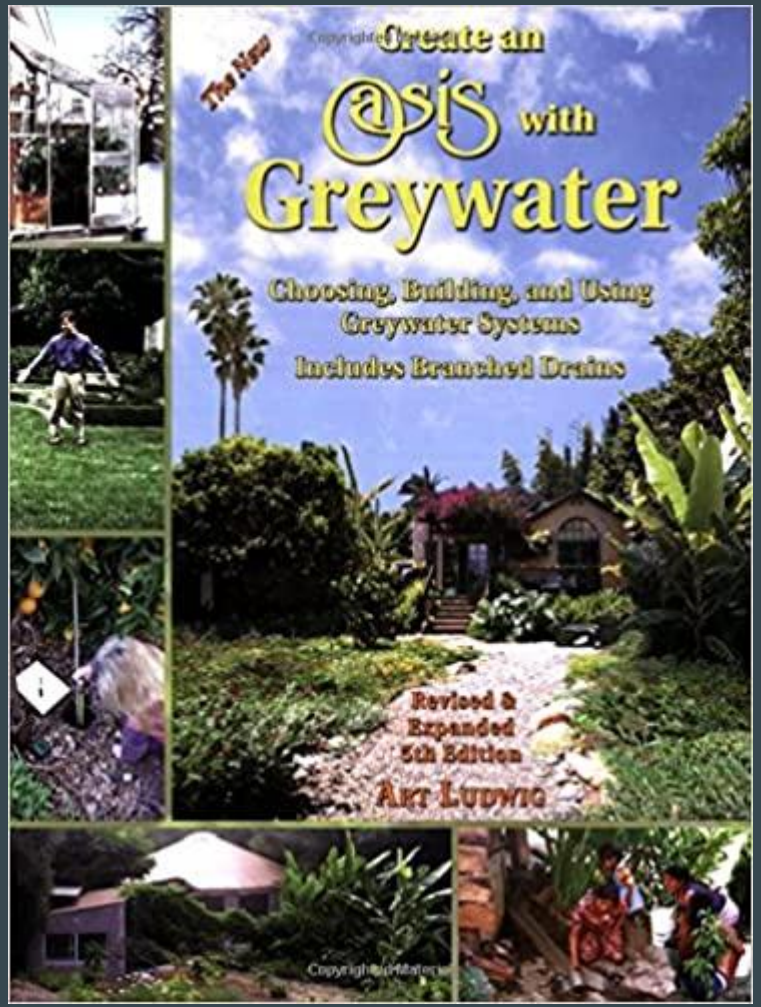
CALCULATING PLANT DEMAND

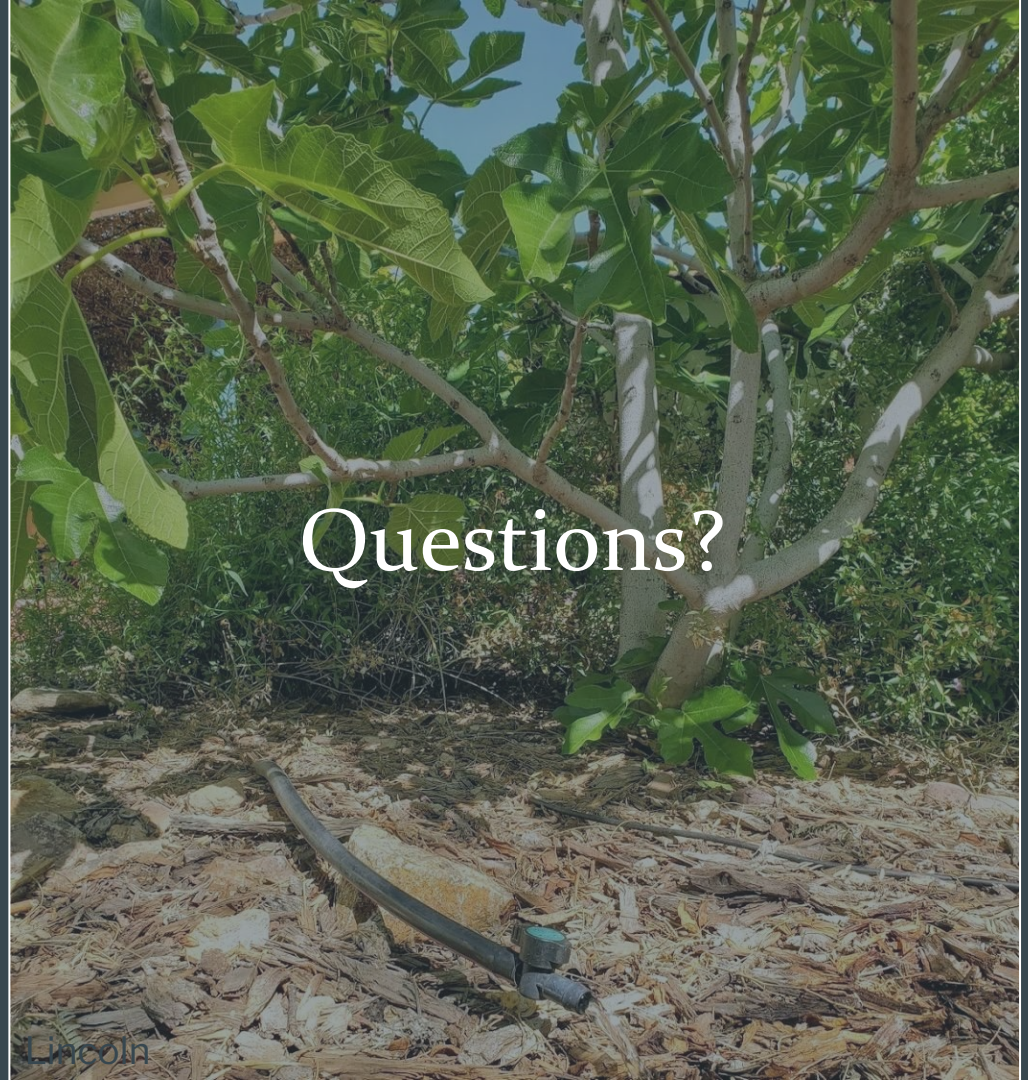
CALCULATING WATER SUPPLY

CONSIDERING SEASONALITY

SOIL PERCOLATION RATES

CALCULATING BASIN SIZING




Questions?

Upkeep

CHECK EMITTERS FOR CLOGS/BURYING

CHECK FOR LEAKS

Upkeep

CHECK EMITTERS FOR CLOGS

CHECK FOR LEAKS

MONITOR PLANT HEALTH

REPLENISH MULCH IN BASINS

Upkeep

CHECK EMITTERS FOR CLOGS

CHECK FOR LEAKS

MONITOR PLANT HEALTH

REPLENISH MULCH IN BASINS

REMOVE OR INCORPORATE LINT

MOVE EMITTERS WITH PLANT GROWTH

General Precautions

- No bleach
- No soaps with high salt content
- No clothes soiled with bodily fluids
- Avoid over-saturating soil
  - You can drown plants
  - Causes anaerobic soil with unpleasant smells
- Avoid human or animal contact with graywater – due to higher bacterial content

Products/Items to AVOID

- chlorine or bleach
- Peroxygen
- Salts (sodium)
- sodium perborate
- sodium trypochlorite
- Sodium lauryl sulfate
- boron
- borax
- petroleum distillate
- alkylbenzene
- ”whiteners”
- ”softeners”
- ”enzymatic” components

- **Recommended detergents**
  - Oasis
  - ECOS liquid detergent
  - Vaska
  - Trader Joe’s Liquid Detergent
  - Puretergent

Questions?

Thank you!

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