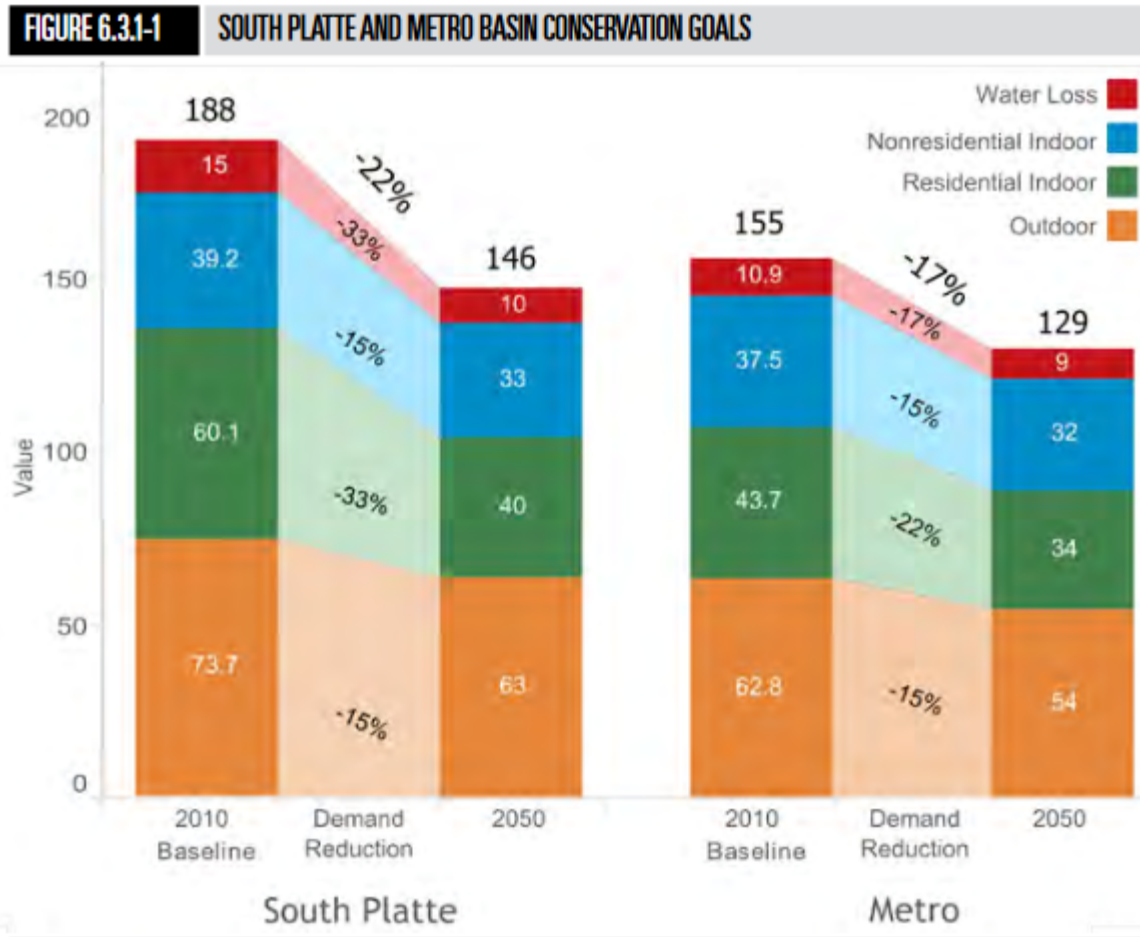


H2Overhaul: A Water-Wise Landscape Transformation



Why Water – Wise?

Colorado State Water Plan:



H₂O VERHAUL



Mountain Shadows

Designed by: Bill Melvin of [Ecoscape Environmental Design](#)

- **Covers:** 98 sq. ft.
- **Includes:**
 - 28 starter plants with 11 different varieties in 4-inch pots
 - 1 plant by number layout option (14 ft. x 7 ft. rectangle)
- **Exposure:** Full Sun (requires a minimum of 6 hours of full sun per day)
- **Mature Height:** 1 ft. to 10 ft.
- **Hardy To:** 6,500 feet
- **Colorful:** Early Summer to Fall
- **Benefits:** Locally grown and pollinator friendly



Rocky Mountain Retreat

Designed by: Kenton Seth of [Paintbrush Gardens](#)

- **Covers:** 96 sq. ft.
- **Includes:**
 - 28 starter plants with 11 different varieties in 4-inch pots
 - 3 plant by number layout options (16 ft. x 16 ft. rectangle, 12 ft. x 8 ft. rectangle, 14 ft. x 14 ft. triangle)
- **Exposure:** Full Sun (requires a minimum of 6 hours of full sun per day)
- **Mature Height:** 6 in. to 3 ft.
- **Hardy To:** 9,000 – 10,000 feet
- **Colorful:** Early Spring to Fall
- **Benefits:** Locally grown and pollinator friendly

Because it is Beautiful!



And Beyond Beautiful~



Colorado is beautiful,
and most of that beauty is dry



Transforming Your Lawn into a Xeriscape

Remove a 200 square foot area of lawn

- ❖ Must be existing and maintained
- ❖ Areas to consider:



- Small areas
- Hard to water
- Too shady



South facing slopes

**And replace it with 200 sf
of Xeric plants!**



WHERE, WHAT AND WHEN?

- **Garden in a Box** gardens should go in the appropriate microclimate:
 - **Mountain Shadows** in partial shade
 - **Rocky Mountain Retreat** in full sun, but not baking (extreme south exposure)
- Other plants can be chosen to fit your yard and microclimate.
- Consider planting shrubs as a low maintenance and water alternative to lawn



- If you have an existing irrigation system, convert a whole irrigation zone
- **DO NOT Mix high and low water use plants, NOR Drip and spray irrigation, or different types of sprinkler heads**
- Do it before it gets hot! Or after.

Xeriscape is not:

- Zero-scape
- Ex-er-scape
- Only native plants
- Landscapes without turf
- Landscapes that must survive without irrigation
- Rocks and cactus



XERISCAPE PRINCIPLES

- Planning and Design
- Limited/Practical Turf Area
- Low Water Use Plants
- Soil Improvement
- Efficient Irrigation
- Mulch
- Appropriate Maintenance

PLANNING AND DESIGN

- Create a landscape for you
 - What do you like to do? What would you enjoy outside?
 - What kind of maintenance do you like? Hate?
 - Consider landscaping for wildlife, and to increase the earth-friendliness of your yard
- Start with the problem areas – areas that are weedy, dry..
- Are you in a weedy neighborhood? Create a ‘weed mitigation plan’.
- Make your mistakes on paper
- Work with microclimates and soils
- Work with your existing irrigation system
- When to use a professional designer

Limited Turf











Low Water Plants



What to have instead of lawn?

- ❖ **PERENNIAL FLOWERS** - Colorful, relatively expensive, high maintenance, quick to mature
- ❖ **LOWER WATER USE GRASS** - Similar maintenance and look, relatively inexpensive and quick: Turf-Type Tall Fescue, Kentucky x Texas Bluegrass hybrids, Crested Wheatgrass, Blue Grama grass
- ❖ **HARDSCAPE** – Patios, decks, play areas, boulders... Expensive, low maintenance, quick
- ❖ **NATIVE MEADOW** – Inexpensive, very high maintenance to establish, skilled maintenance, fairly quick
- ❖ **SHRUBS** – Colorful, inexpensive, low maintenance once established, slow to mature
- ❖ **DRY CREEK/GRAVEL BED** - Cheap, fast, low maintenance with herbicides, high maintenance otherwise

Xeriscape- Installation and Maintenance with costs and timing

	INSTALLATION		WATER USE	MAINTENANCE			CONVERSION DIFFICULTY
	COST	ESTABLISHMENT		FREQUENCY	COMPLEXITY	HERBICIDE	
Sod lawn	low	very quick	m-h	weekly	simple	yes	hard
Annual flowers	high	very quick	m-h	weekly	moderate	yes	hard
Perennial flowers	m-h	quick	l-h	infrequent	moderate	some	hard
Groundcovers	l-h	mod. to slow	l-h	infrequent	moderate	some	hard
Shrub beds	l-m	slow	l-h	very infrequent	simple	some	easy
Native meadow	low	moderate	low	very infrequent	complex	no	hard
Dry creek	low	very quick	none	inf. to frquent	simple	yes	easy
Hardscape	l-h	very quick	none	little to none	simple	yes	easy

INSTALLATION COSTS: Materials: low = \$1 to \$2, medium= \$2 to \$4,
high= \$5 to \$8,

INSTALLATION COSTS - Materials and labor/contractor: low = less than
\$4/sf, moderate = \$3 to \$9/sf, high = \$9 to \$30/sf

ESTABLISHMENT: very quick= 1-2 months, quick= 1 year, moderate= 2 years, slow= 3 to 5 years

WATER USE: high= 1 1/2" in summer, 20 gallons per square foot per season; moderate= 3/4" in summer,

10 gallons per square foot per season; low= 1/4-1/2" in summer, 5 gallons per sf per season



Group plants according to their water use:

- High – Bluegrass and water loving perennials and shrubs
1 ½” per week in July; 20 gallons per square foot per season
- Moderate – Turf-type Tall Fescue and most common landscaping plants
¾” per week in July; 10-12 gallons per square foot per season
- Low – Low water use grasses, many xeric landscaping plants
¼ “ per week in July; 5 gallons per square foot per season

Microclimates

Microclimates are crucial in Front Range landscapes. Use them when establishing hydrozones.



Microclimates are determined by:

- Sun exposure
- Wind exposure
- Soil slope
- Presence of fences, walls, boulders
- Nearby water

Microclimates do not depend on soils, but can shape soil formation and health

Hydrozones

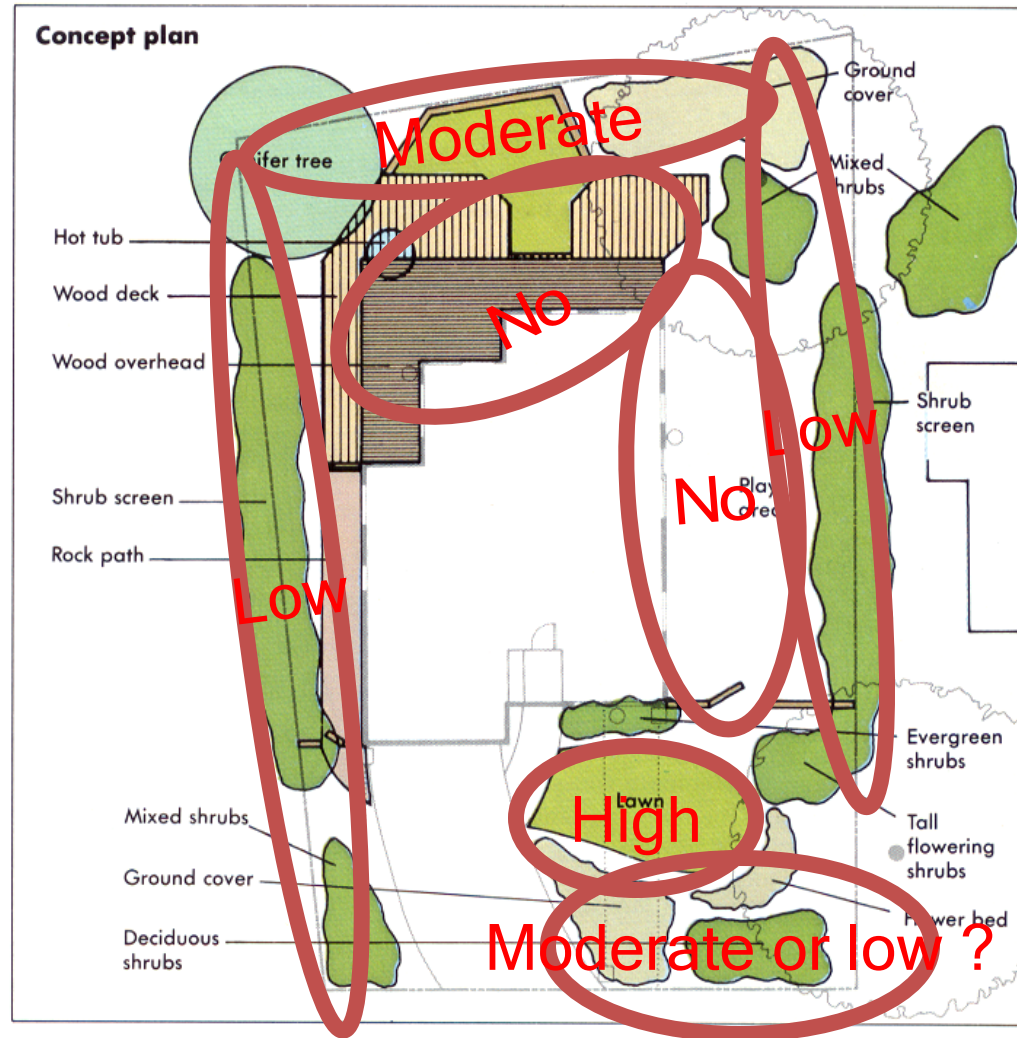
Are landscape areas that, by design, use specific amounts of irrigation.

Are laid out to harmonize with microclimates

Hydrozoning dictates the plants that are used in an area and the design of the irrigation system.

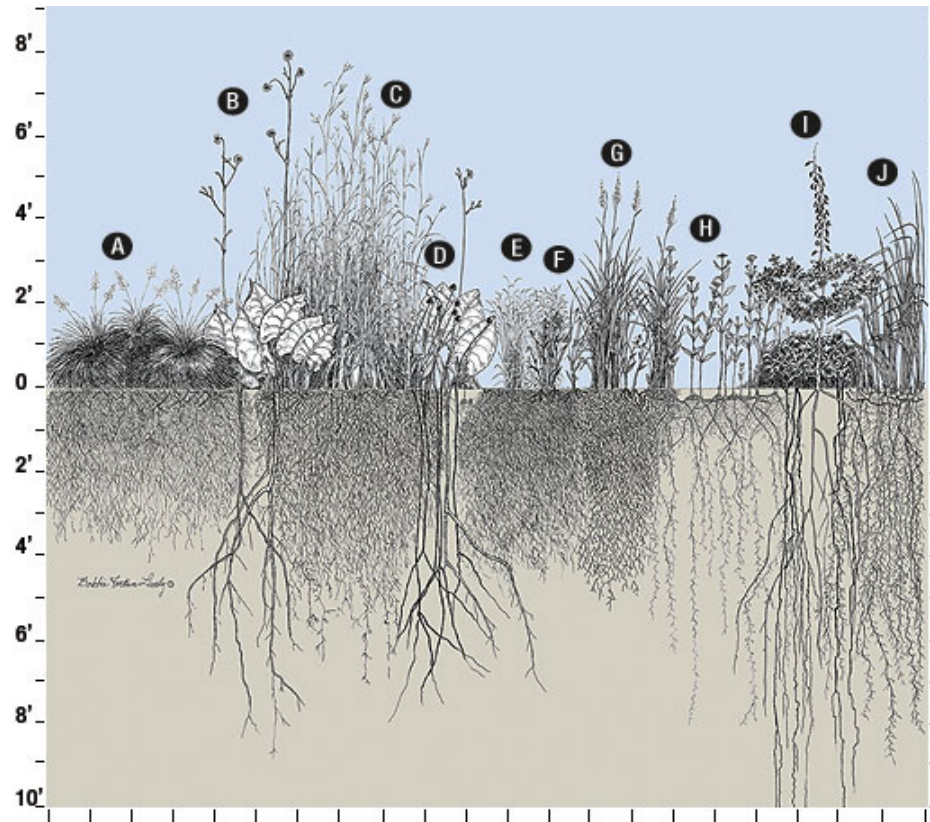
Hydrozone	% of ET _o	Irrigation in Gallons/square foot/season
High	75-100 %	20
Moderate	50-75%	10
Low	25-50%	5
Very Low	<25%	0

Et_o = water consumption of a high water, cool season lawn in inches of water per square foot.



Soil Amendment

Building Strong Roots



A. Prairie Dropseed C. Big Bluestem E. Little Bluestem G. Indiangrass I. White False Indigo
B. Prairie Dock D. Purple Coneflower F. Black-eyed Susan H. Showy Sunflower J. Prairie Cordgrass

Soil Amendment

What, When, Where and How, Why

❖ **WHAT** - Weed and disease free organic matter:

- Compost
- Well aged, non feedlot manure
- Not peat

❖ **WHEN** - Before planting

❖ **WHERE AND HOW** -

- For irrigated lawns – bluegrass and turf-type tall fescue, add 1 ½” compost tilled in at least 6-8” deep. This is equivalent to 1 cubic yard per 200 square feet
- For moderate water shrubs and perennial flowers, add 1 to 1 ½” compost tilled in. 1” of compost is 1 cy per 300 sf
- For many low and no water use plants, do not improve the soil unless it is a new home with subsoil spread across the lot. In this case, add 1/2”-1” of compost

❖ **WHY** – To improve soil’s ability to absorb and hold water, to improve plant health



Efficient Irrigation

TOP TIPS TO SAVE WATER!

- Tune up your irrigation – Fix broken heads and leaks, correct head spacing, make sure heads have matched precipitation, minimize overspray
- Use a smart controller – ET or Soil Moisture Sensor
- Shift from sprinklers to drip and soaker irrigation:
 - For shrub, groundcover and flower beds, vegetable gardens
 - Can use buried soaker lines for lawns
- Shift from high water use plants to moderate and low water use plants

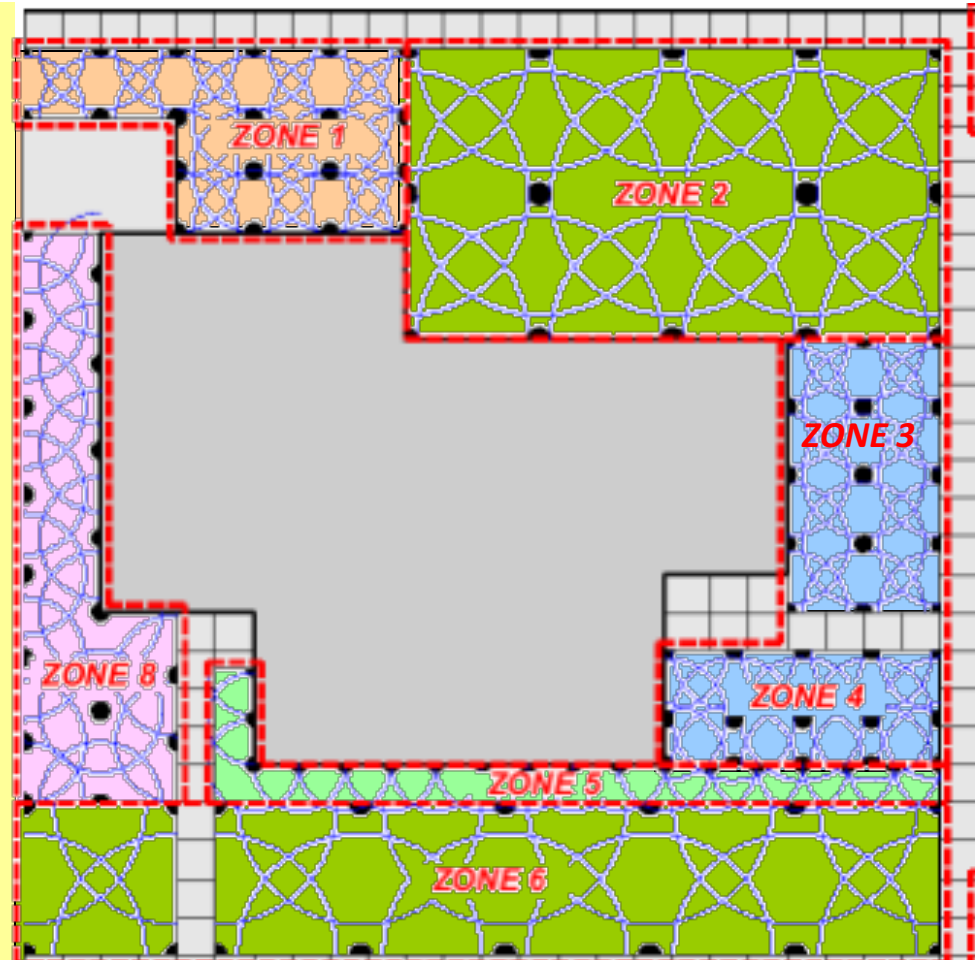


Sprinkler Zones

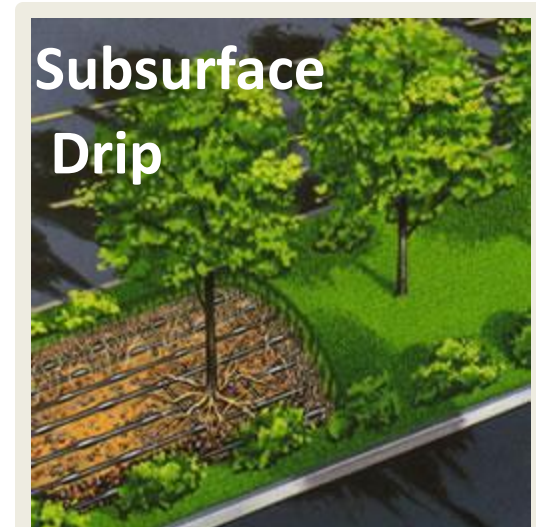
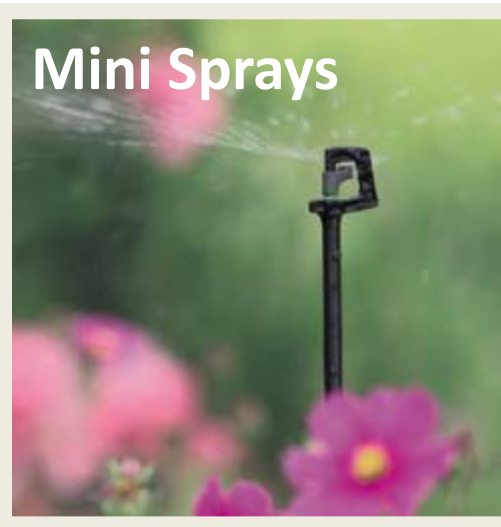
Sprinkler zoning is based on the site conditions

- Soil type
- Microclimates
- Regional ETo
- Slope, area, aspect
- Available Water pressure
- Budget, Etc

Should be designed to work WITH hydrozoning.



Sprinkler Head Options



IRRIGATION RENOVATION

- Convert an entire zone:
 - Method 1:
 - Cap all sprinkler heads except one or two
 - At the remaining sprinkler heads, use Rainbird 1800 Drip Irrigation Retrofit kit to connect new drip irrigation lines
 - Method 2:
 - Disconnect sprinkler line at valve box, run new drip irrigation from valve box

IN EITHER CASE, YOU MAY NEED TO PUT IN A NEW VALVE TO WORK WITH THE LOWER FLOW!

Drip irrigation recommendations:

- Shrubs – 1 1 gallon per hour (GPH) emitter per shrub
- Trees - for new trees, a ring of .6-12 soaker line inside root ball
 - For existing trees – stay with water requirement of tree, and water all plants under the tree
- Perennial flowers and groundcovers - .6-12 soaker line every 12-18”, depending on soil

SUGGESTED WATERING SCHEDULE:

Water one hour three times a week for the first few months

Water twice a week for 1.5 hours by the end of the first season

Water every 5-7 days for 2-3 hours the second year, after spring rains stop

Mulch

Benefits

- Holds moisture in soil
- Adds organic matter to the soil
- Erosion control
- ‘Soil Blanket’ –evens out temperatures
- Reduces weeds
- Prevents soil splashing on lower plant leaves reducing some plant diseases

Pitfalls

- Weed barriers (usually)
- Rock mulches
- Mulch mountains

Types of Mulch

- Groundcovers
 - Living plants
- Organic mulch
 - Compost
 - Plant duff
 - Wood or bark
 - Etc.
- Inorganic Mulch
 - Rock of some sort
 - Ground rubber
 - Expanded shale



Marsilia mucronata photo courtesy La Porte Avenue Nursery.

Maintenance Of A Xeriscape

Maintenance goals:

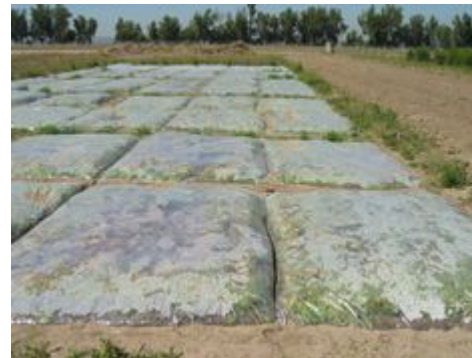
- Keep landscape healthy and attractive while limiting water consumption:
 - Maintain irrigation system
 - Keep plants healthy & attractive
 - Remove weeds that compete for water
 - Maintain soil quality
 - Use sustainable practices



Site Preparation~

Removing Lawn – non-herbicides methods:

- **Clean bluegrass:**
 - Smother with mulch. Only will work with larger plants that can tolerate 3-4” of mulch
- **Weedy bluegrass or non-bluegrass sod**
 - Smother with mulch and paper/cardboard weed barrier. As above, will only work with larger plants such as shrubs and tall perennials and grasses



- Sod cutter - compost it!
- Till repeatedly - water before tilling

Solarize

Site preparation~

Weeds - what is growing on and around the site?

The weeds to be concerned about depend on what you will be planting:

- For example, bindweed is not a problem in large prairie plantings

You **must** take care of any perennial weeds on site before planting

The big three perennial weeds- spreading aggressively through seed and roots- are:

- Canada Thistle
- Bindweed
- Brome and quack grass

Easier to remove perennial weeds include:

- Mallow
- Dandelion
- Chicory
- ‘cancer of the garden’

Annual weeds include:

- Wild lettuce
- Lamb’s quarters
- Pigweed

Non-toxic control includes hand weeding, smothering and ‘top-kill’ products

Soil Preparation~

Loosen soil

- Many suburban soils are very compacted, often quite deeply
 - Till
 - Hand dig
 - Chisel plow

Organic soil amendment?

- Depends on the plant. Many native and xeric plants do not want amended soil
- Might amend soil to increase drainage –shale chip or biochar

Planting~

Plant small! Smaller plants are less expensive and recover from transplanting more quickly

Timing - easier in cool weather, possible April through September
Many southwestern plants need to be planted in early summer to be well enough established for cold weather