Converting to a Low-water Landscape: A "How-to"

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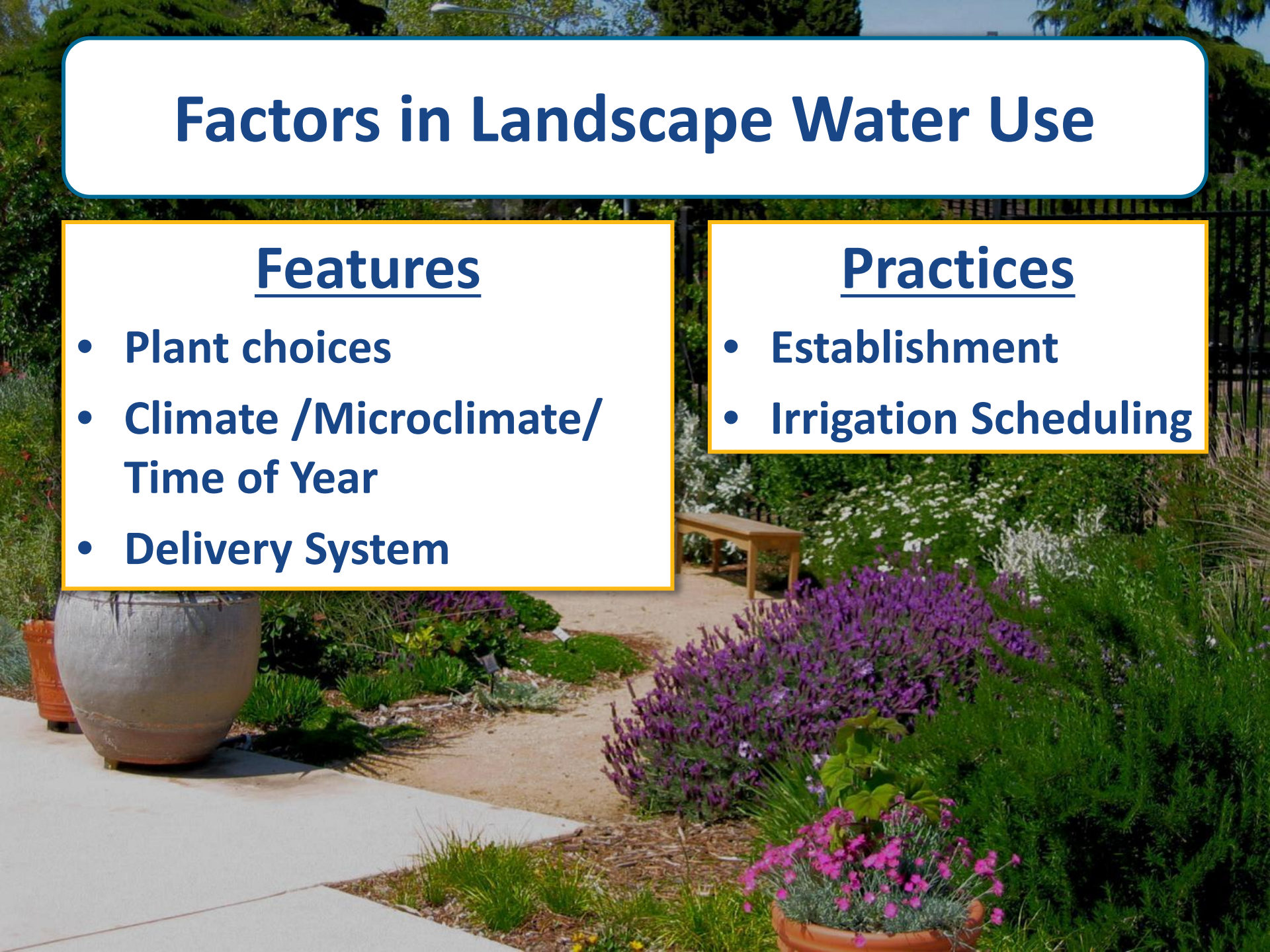
Factors in Landscape Water Use

Features

- Plant choices
- Climate /Microclimate/ Time of Year
- Delivery System

Practices

- Establishment
- Irrigation Scheduling

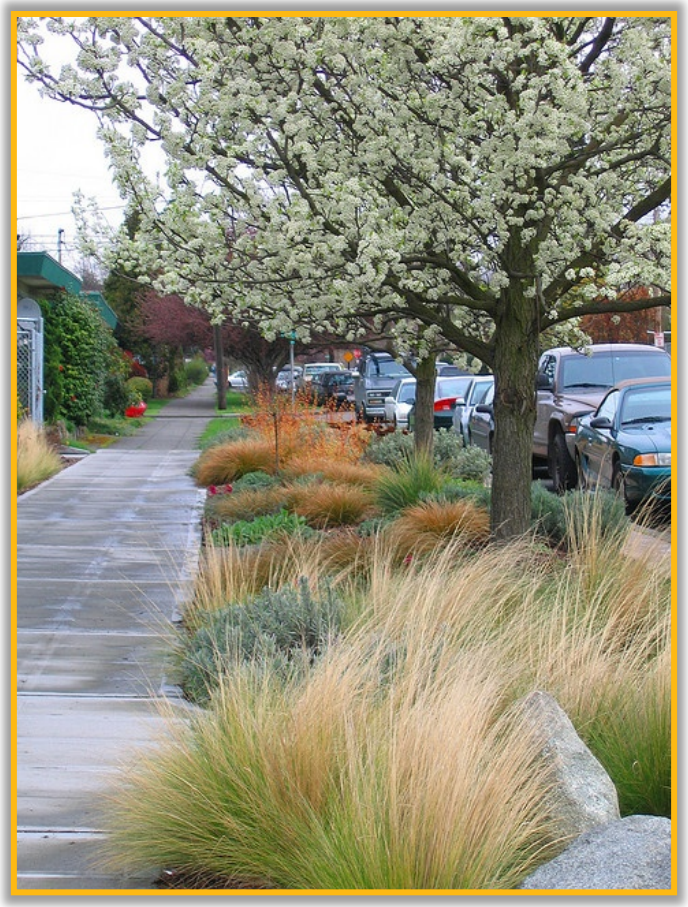


Lessons from Irrigation Trials

1. Plant choice is key to conservation
2. Establishment of deep root system promotes drought tolerance
3. Low and slow delivery is best
4. Mulch makes a difference

Steps to Converting to Low Water Use

1. Assess your plants
2. Assess your irrigation
3. Assess your soil
4. Make a plan
5. Remove unwanted hardscape & plants



Steps to Converting to Low Water Use

6. Amend soil with good compost if needed
7. Install/convert irrigation to most efficient for the space
8. Plant new material
9. Cover bare soil and lines with organic mulch

Assess your plants and trees

- **Remove**
  - high maintenance plants
  - high water users
  - anything you don't like

Plants aren't children- it's okay to get rid of them if they don't perform!

- **Build around what you like/looks good**
- **Move plants together with similar water needs (hydrozone)**
- ***Make a list of plants you'd like and your empty spaces***

Assess your irrigation

- Find your valves- what do they water?
- Which stations on your controller are assigned to each valve?
- Find all sprinkler heads
- Find existing drip distributor heads

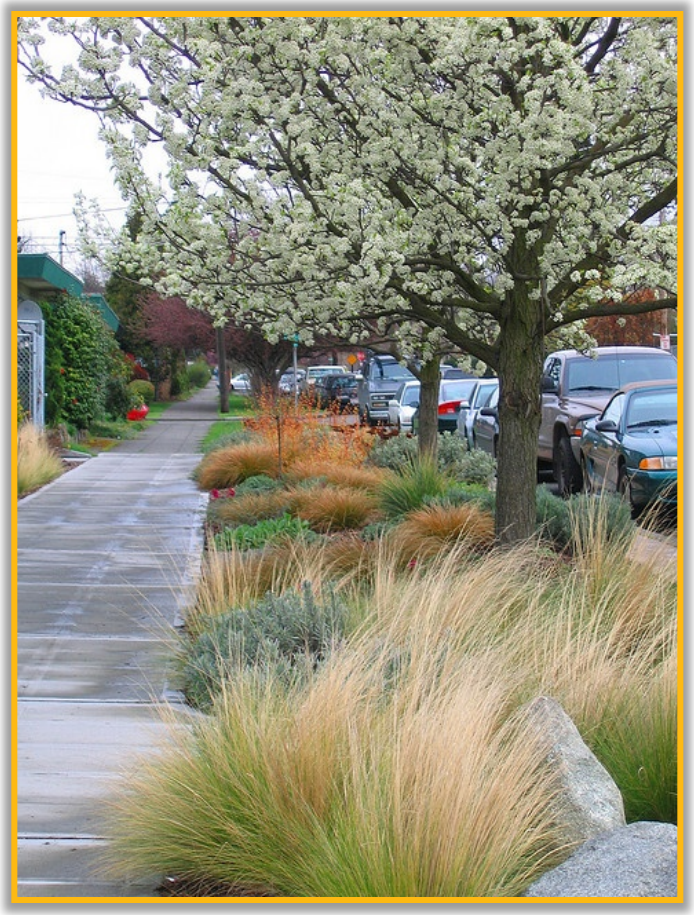
Converting to In-line Drip

WHERE?

- Shrub beds, borders, hell-strips, groundcovers

WHY?

- Avoid blockage by plants
- Most efficient *if installed properly*



What is In-line Drip?

Total allowable line length is based on your water pressure- *CHECK IT!*

- **Tubing with internal emitters**
- **Laid in grid patterns**
- **Different emitter rates**
  - **.24, 0.4, 0.6, 0.9 GPH**
- **Different emitter spacing**
  - **12”, 18”, 24”**

Inline drip length and emitters

Total allowable line length is based on your water pressure- *CHECK IT!*

- **Hunter 0.4 gph/ 18” @ 50 psi can run 784’ of line on one head.**
- **Netafim Techline CV w/0.4 @ 50 psi/18” @ 50 psi = 654’**
- **Emitters are pressure compensating, anti-siphon, and self flushing w/built in check valves.**

Looped ("Lite") Layout

From the Techline CV Design Guide

Design & Scheduling Specifications

	Clay			Loam			Sandy		
Rate (gph)	0.26			0.4			0.6-0.9		
Emitter spacing (in)	18			18			12		
Row spacing	18	21	24	18	21	24	16	18	20
App. Rate (in/hr)	.19	.16	.14	.3	.26	.23	.7-1.1	.65-1	.6-.9
Minutes to apply ¼ "	80	96	106	50	58	66	13-20	15-23	17-26

Download: Hunter Drip Irrigation Design Guide

Netafim Techline CV Design Guide

What will you need?

What will you need?

For single valve control

- Main valve
- Pressure compensator
- Timer
- Drip adapter
- Elbows

To use existing controller/valves

- Cap unnecessary sprinkler heads/drip distributors
- Unscrew heads from strategically located sprinkler risers
- Add elbow (and pressure regulator)
- Add barbed T-adapter

Check your pressure to see how much line you can run on each head!

Last Steps

- Lay your line according to the guidelines and your space.
- Add a vent at the farthest spot on each line.
- Run the system to flush out any soil.

Helpful Hints with Inline Drip

- Lay your line out in the sun to soften the tubing and prevent kinks.
- Use something hard to push staples in.
- If curves are too sharp, use an elbow.

Helpful Hints with Inline Drip

- Use cross connectors with long runs
- Use concentric rings around trees
- Add loops for rounded beds

Cross-connect long runs/ loops

(can use cross fitting in center)

Adapt your grid to your space

Converting turf areas

1. Quit watering/ Glyphosate if impatient
2. Scalp what's left
3. Cut out edges below concrete grade

Converting turf areas

Converting turf areas

Converting turf areas

6. Create beds – add inline drip
7. Lay sheet mulch or landscape fabric
8. Lay walkway material

Helpful Hint: get one of these

Planting for Success

- Plant in autumn to take advantage of cooler temps and rain
- Closely inspect plants in the nursery for
  - Pests/disease signs
  - Healthy root systems
- Buy small except for slow growers

Hydrozone!

- Group plants on valves by water needs
- Highest water user will always call the shots

Planting shrubs & herbaceous perennials

- Hole *NO DEEPER* than root ball
- Hole twice as wide
- Backfill with native soil
- Gouge sides of smooth clay holes
- Final goal: crown at grade or slightly above

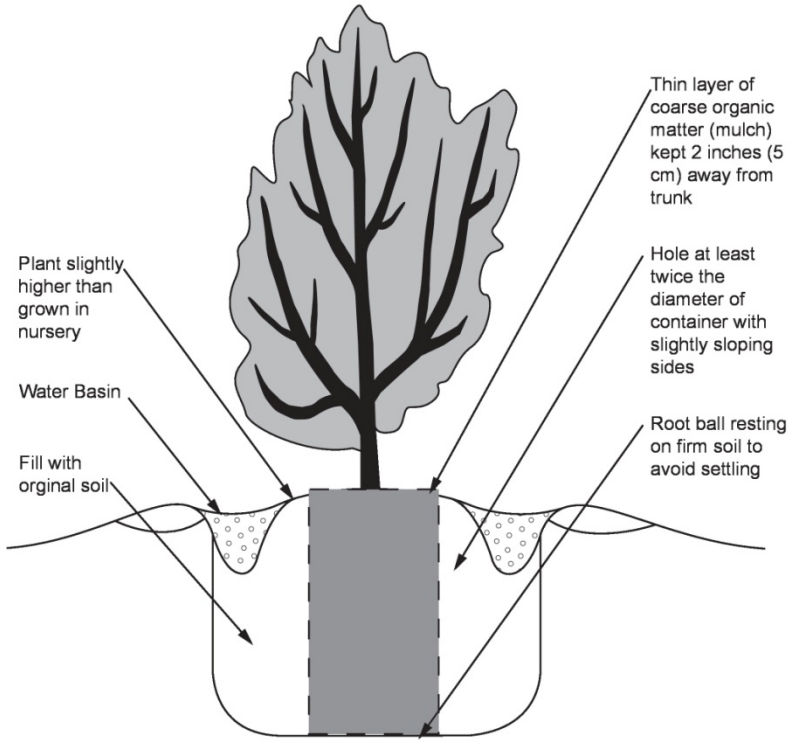


Image by Jared Sisneroz

Tree Planting

root ball

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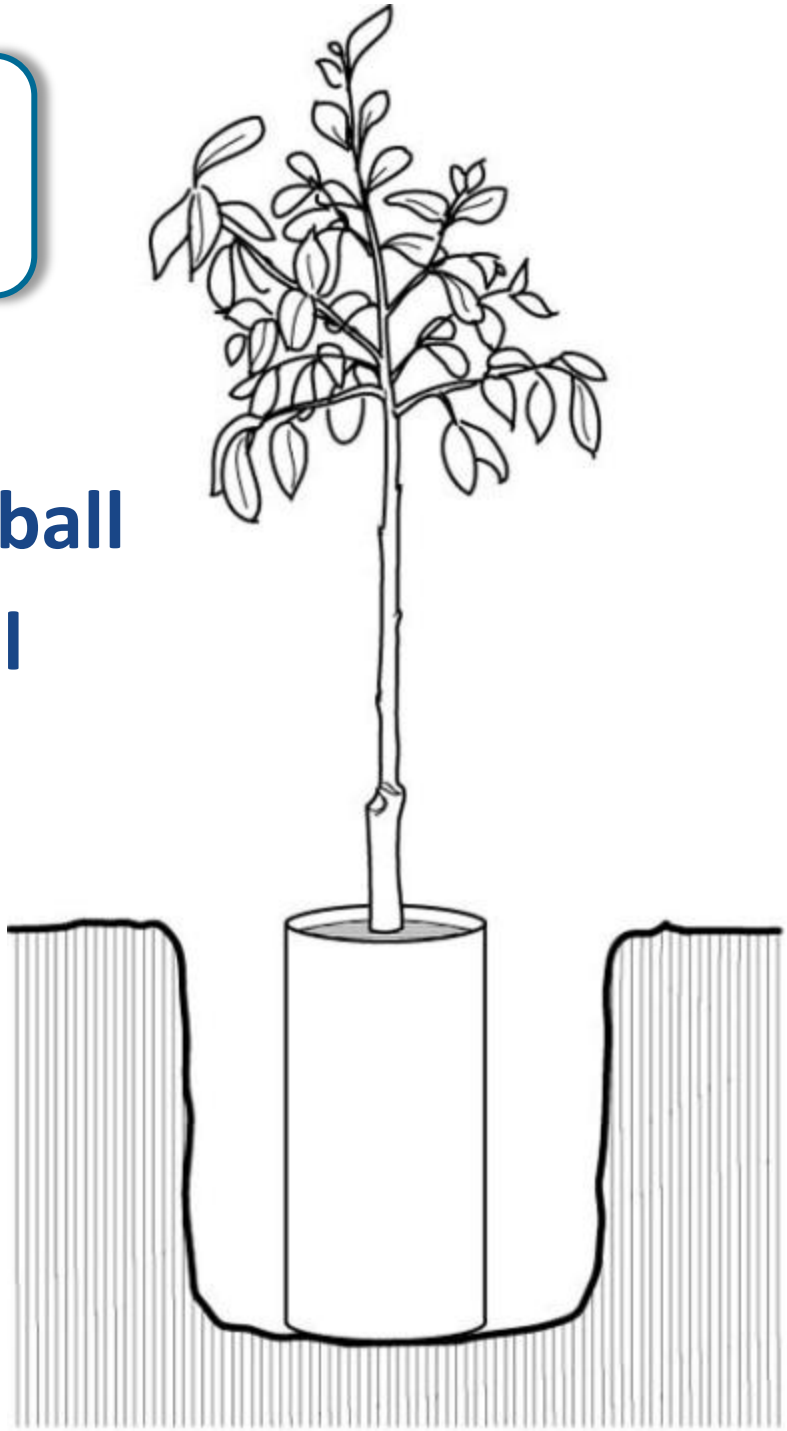
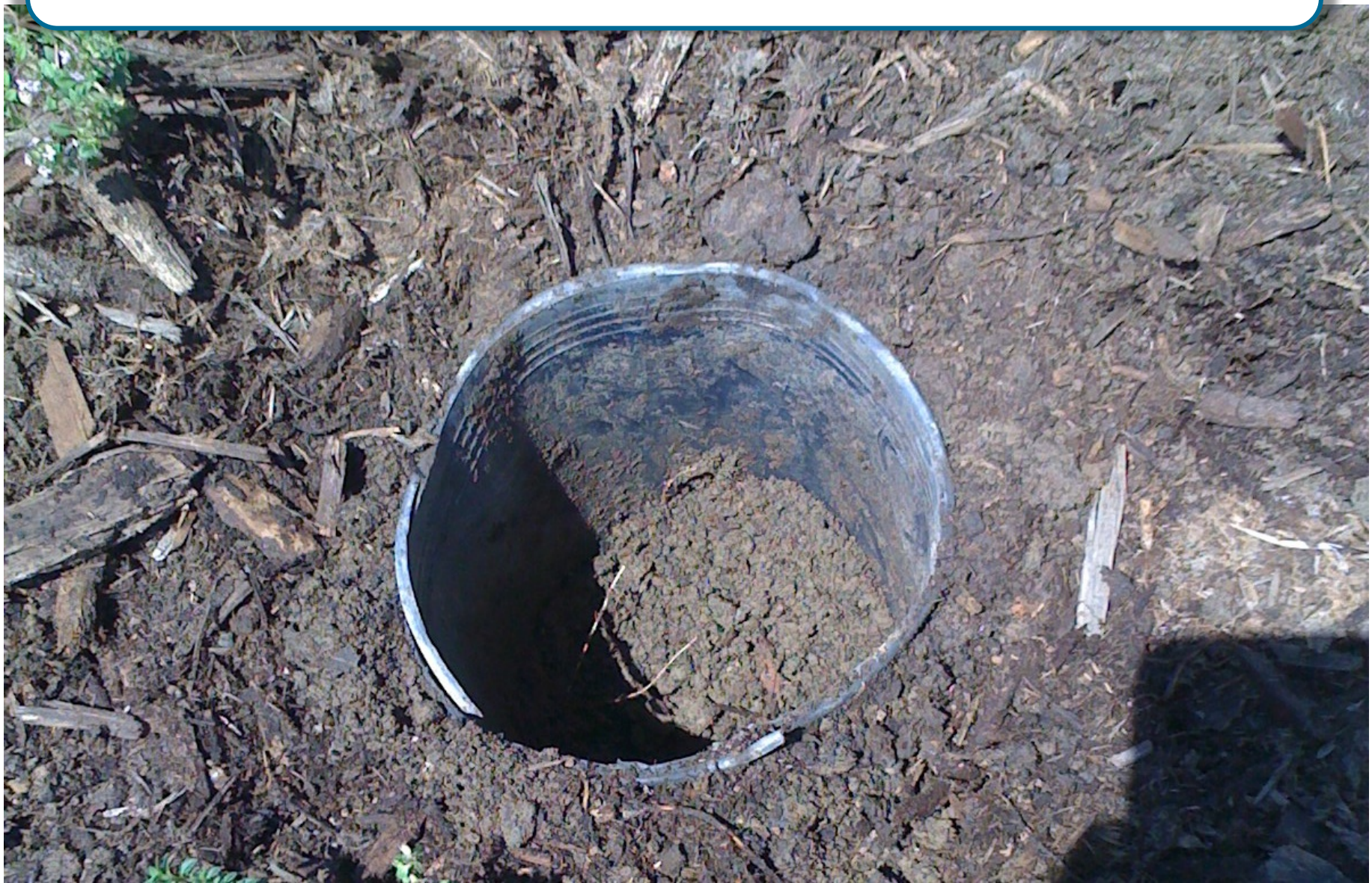


Proper new tree watering berm

REMOVE AFTER 1 YEAR!

What *NOT* to do



What *NOT* to do

Plant too high- especially small plants

Leave soil in large clods

Put chunks of bark in planting hole

Why Mulch?

- Reduces water-loss to evaporation
- Moderates soil temperature reducing root stress & increasing biological activity
- Reduces runoff
- Increases infiltration by
  - Preventing soil crusting
  - Improving soil texture over time
- NOTE: Sprinklers will need to soak bark to reach soil

Mulch- side benefits

- Reduces green waste if using own material
- Reduces weeds and makes them easier to manage
- Tidier landscape appearance

Establishing a maximum capacity root system

- Careful watering critical during establishment
- Frequency will vary by
  - Soil type
  - Season
- Creates maximum access to water storage

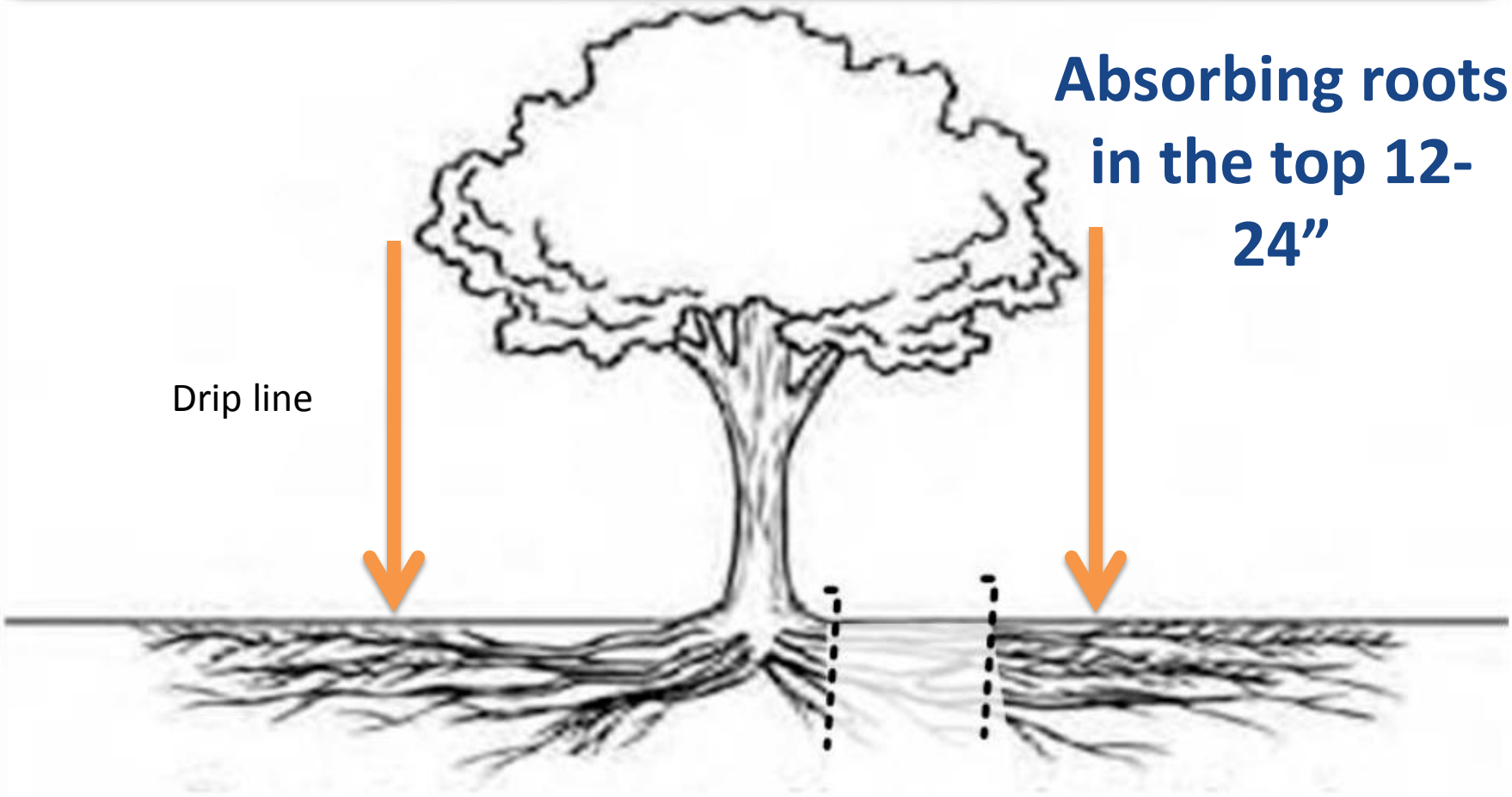
Establishing a maximum capacity root system

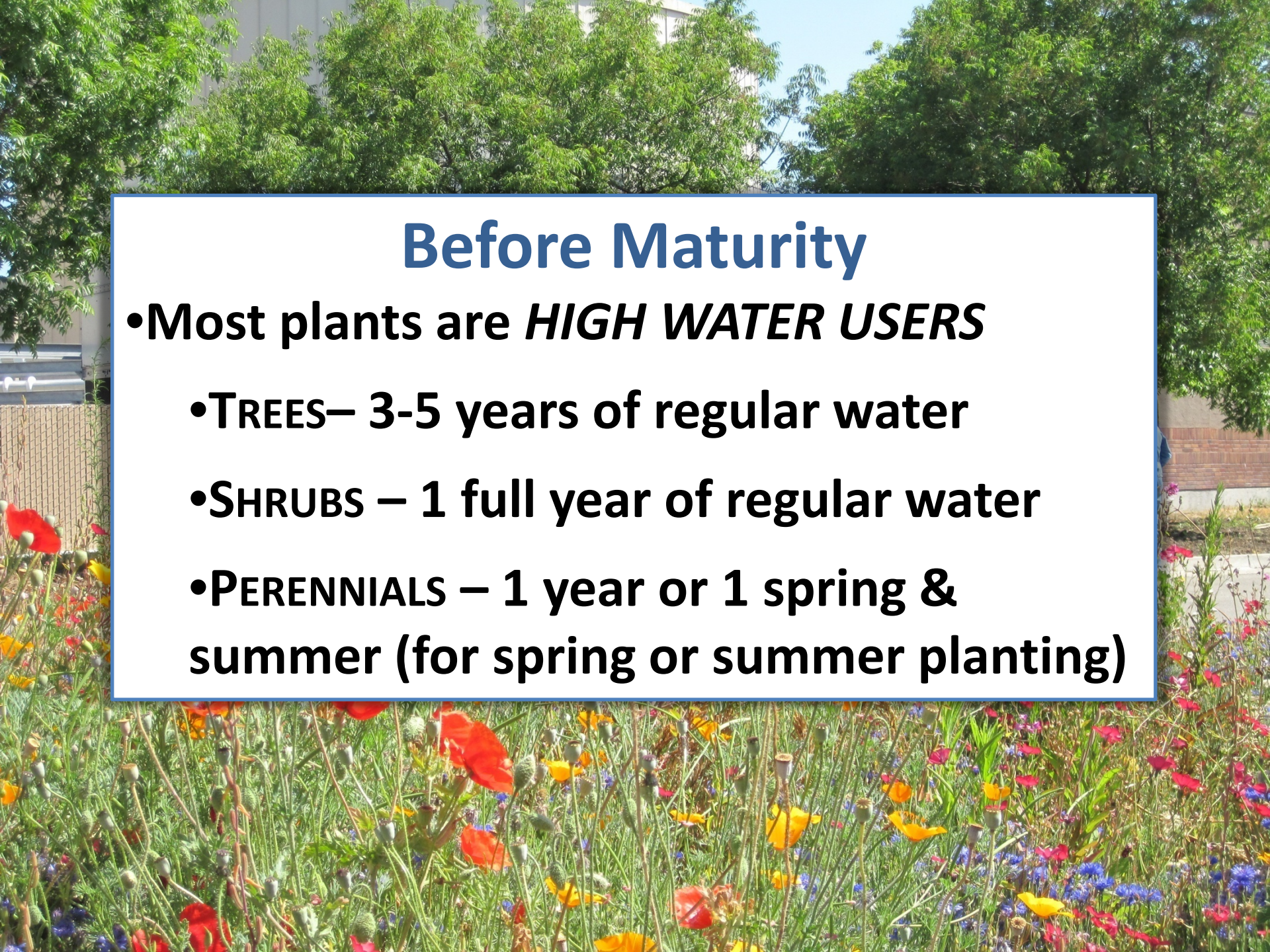
- Irrigation should begin at the pot/soil margin
- Gradually add water further out
- Drive roots down: water should go below the root ball

Establishing a maximum capacity root system

- Each season the irrigation intervals increase
- Allow some dry-down between intervals
- Eliminate tree water between trunk and drip-line ½-way mark

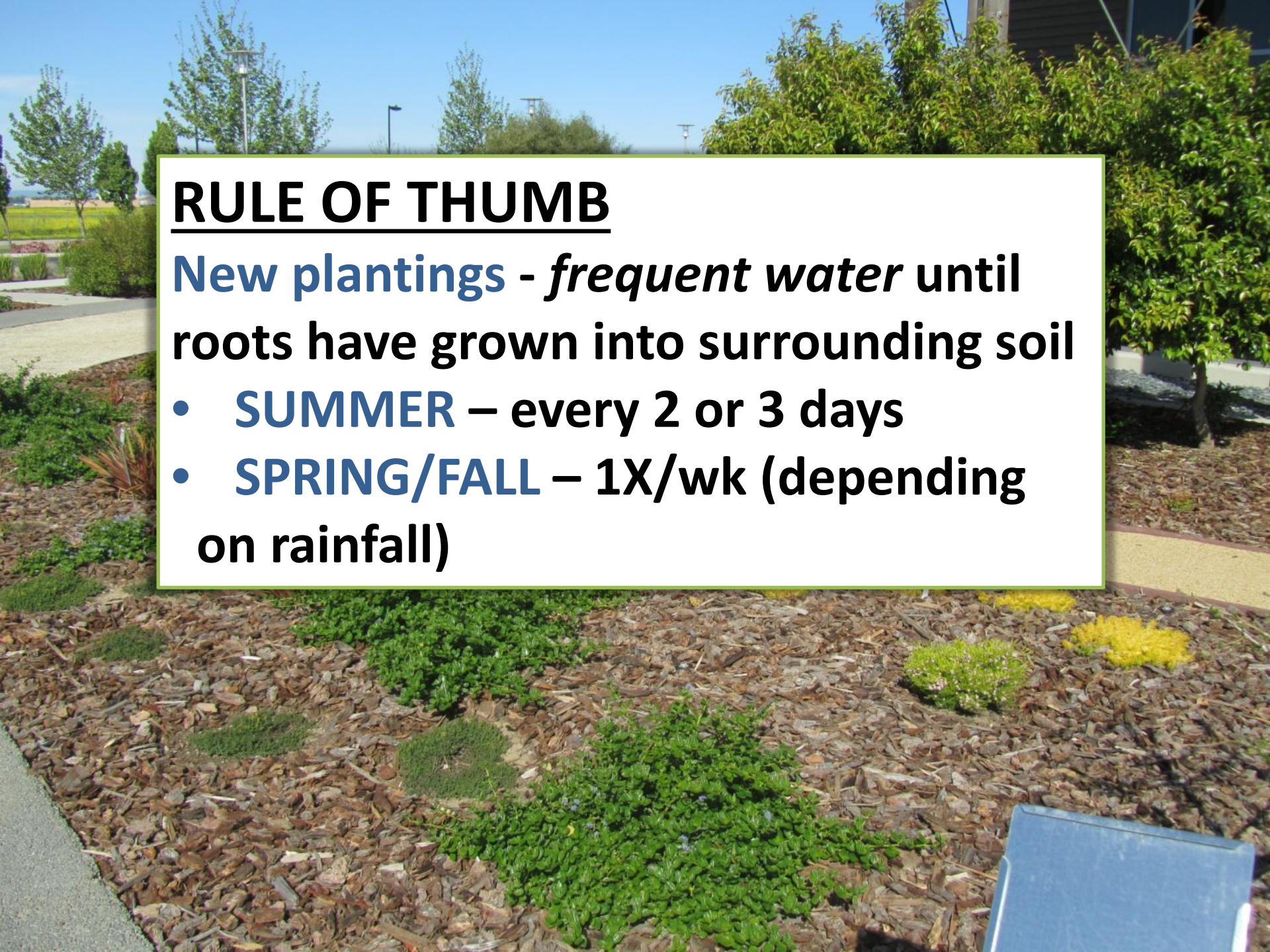
Root Zone of Trees





Before Maturity

- Most plants are *HIGH WATER USERS*
  - TREES– 3-5 years of regular water
  - SHRUBS – 1 full year of regular water
  - PERENNIALS – 1 year or 1 spring & summer (for spring or summer planting)



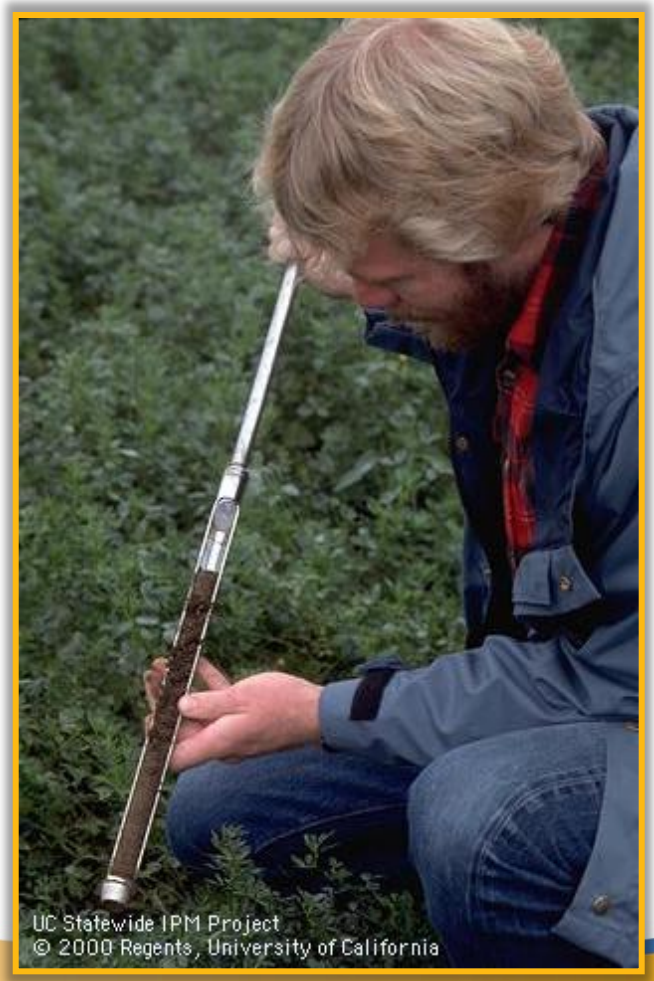
RULE OF THUMB

New plantings - *frequent water* until roots have grown into surrounding soil

- **SUMMER – every 2 or 3 days**
- **SPRING/FALL – 1X/wk (depending on rainfall)**

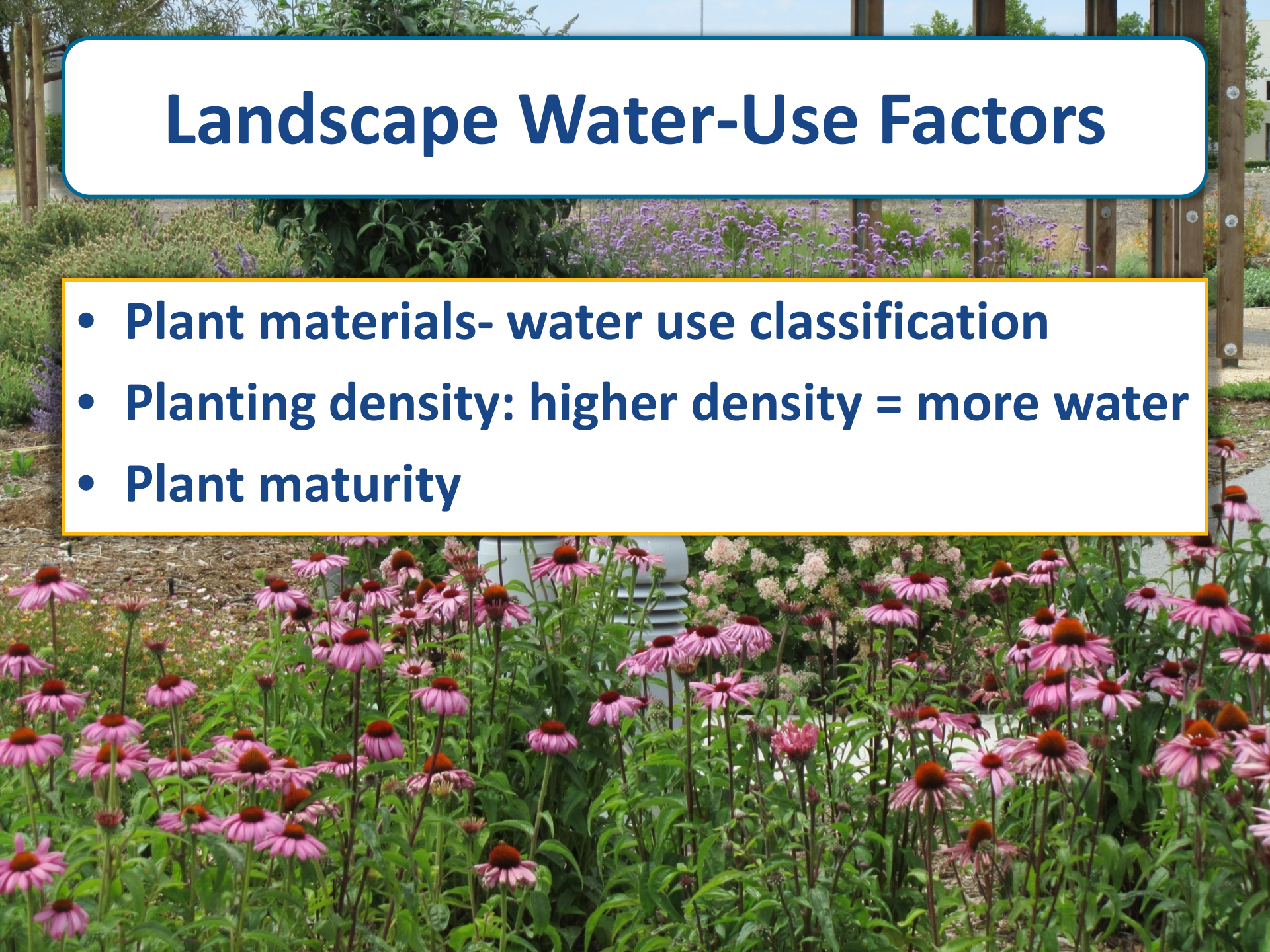
Effective Irrigation for Low-water Use

- Get it to the root zone- low and slow
- Check with a soil probe for adequate depth: 12-18”
- When developing schedules - check for dry-down before irrigating



Landscape Water-Use Factors

- Plant materials- water use classification
- Planting density: higher density = more water
- Plant maturity




Questions?