

Water Management in New Plantings

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Can you Identify the Problems?





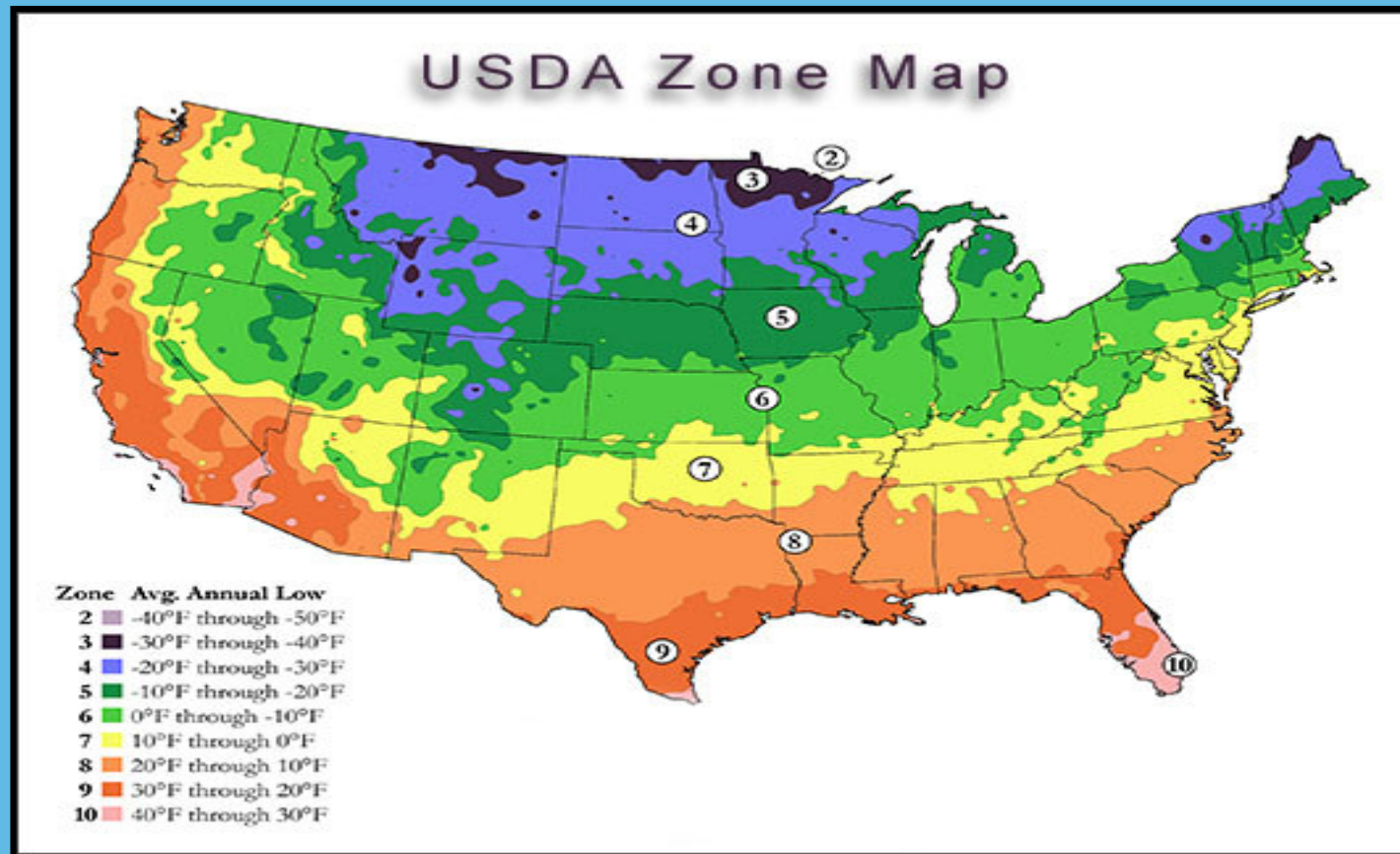
**Beautify Your Landscape, Protect the Environment,
and Save Water, Money, and Time!**

Select Plants Recommended For Your *Sunset Zone*



USDA Zone 9

(Not As Specific As Sunset Zones)



Sunset Zones Are Smaller and More Accurate



Irrigation Scheduling Involves Applying the Right Amount of Water at the Right Time



What Factors are Involved in Irrigation Scheduling?

- Plant water use
- Soil water holding capacity
- Water infiltration rate
- Plant rooting depth
- Irrigation system output



Hydrozone: Plant Species With Similar Water Needs Together

Lawn Alternatives

- Woolly Thyme (*Thymus Pseudolanuginosus*)

- Low Growing (2")
- Soft, Fragrant Lawn
- Drought Resistant
- Cold-tolerant



Lawn Alternatives (Con'd)

- Blue Fescue (*Festuca Ovina Glauca*)
 - Drought-resistant
 - Striking Blue Evergreen
 - Grows To 6" Tall



DWR WATER BUDGET

$$*MAWA = (ETO) (0.7) (LA) (0.62)$$

ETo = Reference Evapotranspiration (Inches Per Year)

0.7 = ET Adjustment Factor

LA = Landscaped Area (Square Feet)

0.62 = Conversion Factor (To Gallons)

***Maximum Applied Water Allowance = _____ Gallons/Year**

Example of Maximum Applied Water Allowance (MAWA)

- Riverside/San Bernardino (Annual Historical E_{to} = 51.1 in)
- Hypothetical Landscape Area = 5,000 Sq Ft
- $MAWA = (E_{to}) (0.7)^* (L_a) (0.62)^{**}$
- $MAWA = (51.1) (0.7) (50,000 \text{ Sq Ft}) (0.62)$
- **MAWA = 110,887 Gallons Per Year**

* E_t Adjustment Factor

** Conversion Factor From Inches To Gallons



Suggested Drought-Resistant Plants

<http://sunsetwesterngardencollection.com/plant-collection/>

<http://www.cnps.org/cnps/grownative/lists.php>

‘Beyond Blue’ Fescue (*Festuca glauca*)

- Intense, powder blue foliage year-round
- Evergreen or deciduous evergreen
- USDA zones: hardy to -30°F USDA zones 4
- Sunset zones: 1-24
- Special features: drought resistant, low maintenance, deer resistant
- Landscape uses: border, container, slope, groundcover





‘Clarity Blue’ Dianella

(Dianella hybrid)

- Exposure full coastal sun to part shade inland
- USDA Zones Hardy to 10
- Sunset Zones 4-7 (with protection), 8-9, 14-24
- Drought resistant, low maintenance, deer resistant
- Dimension 24-30" H x 18-24" W
- Growth rate slow to moderate
- Plant type evergreen
- Water low water needs



‘Lemon Lime’ Nandina

(Nandina domestica Alba)

- Bright lime green new foliage
- Evergreen
- USDA zones: 6-9 (hardy to -10°F)
- Sunset zones: 3 (with protection), -33
- Special features: drought resistant, compact habit, deer resistant
- Landscape use: border, container, slope, firescaping/fire wise, hedge, mass planting



Hesperaloe parviflora 'Perpa' Brakelights

- Size: 2 feet x 2 feet
- Flower color: bright red
- Flower season: Sept - June
- Growth rate: slow
- Exposure: full sun



Hesperaloe spp. 'Pink Parade'

size (h x w) 3-4 ft x 3-4 ft

flower color

pink

flower season spring to fall

exposure full sun, reflected heat

water low

growth rate slow to moderate

hardiness -10° f, usda zone 6

pruning remove spent flow



Tecoma hybrid Crimson Flare®

Red flowers from spring - fall

Drought resistant

Sunset zones: 12-13, 16, 18-24; USDA 8

Attracts hummingbirds

Rapid growth rate

Size (h x w) 6-8 feet x 6-8 feet



Tecoma Hybrid Solar Flare®

Bright yellow/orange flowers spring - fall

Drought resistant

Sunset zones: 12-13, 16, 18-24; USDA 8

Attracts hummingbirds

Rapid growth rate

Size (h x w) 6-8 feet x 6-8 feet



DURANGO DELIGHT®

(*AGAVE SCHIDIGERA*)

- size (h x w) 2 feet x 2-3 feet
- flower color reddish - purple
- flower season winter, spring
- (blooms once,
- then dies)
- water low
- growth rate moderate
- hardiness 15° f, usda zone 8



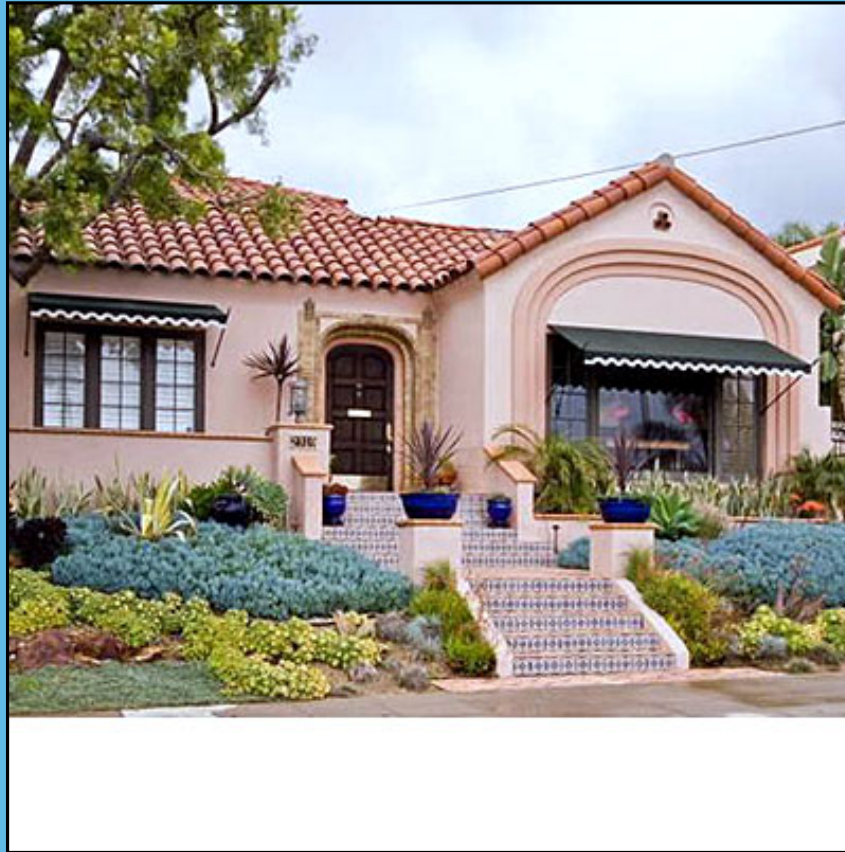
Little Miss Sunshine Cistus (rockrose)

(*Cistus Corbariensis* hybrid)

- Feature/white flowers in spring; year-round colorful foliage
- Evergreen or deciduous evergreen
- USDA zones hardy to 20°F USDA zones 9-11
- Sunset zones 5-9, 14-24, 26, 28, 31
- Special features deer resistant, disease / pest resistance, easy care
- Landscape use border, container, slope, rock gardens, groundcover



Containers, Condos, Apartments (Drought Resistant Plants for Small Spaces)



Chef's Choice® Rosemary

(Rosemary officinales)

- Violet blue flowers in spring
- Evergreen or deciduous evergreen
- USDA zones: hardy to -10°F USDA zones 6-11
- Sunset zones: 4-24
- Drought resistant, aromatic, deer resistant, food seasoning
- Use as landscape plant, border, container, or mass planting



Purple Pixie® Weeping Loropetalum

- Profuse pink flowers in spring
- Evergreen or deciduous evergreen
- USDA zones hardy to 0°F USDA zones 7-11
- Sunset zones 4-5 (with protection); 6-9; 14-24
- Drought resistant, low maintenance, compact, pest resistance, easy care
- Use as border, container, slope, or groundcover



‘Little Kiss’ Salvia (*Salvia microphylla*)

- Feature/red and white bi-color blooms spring to fall
- Evergreen or deciduous evergreen
- USDA zones hardy to -10°F zones 8-10
- Sunset zones 5, 7-24
- Drought resistant, attracts pollinators, clumping habit, heat tolerant
- Use as an accent plant, border, container, or in mass planting



‘Black And Bloom’ Salvia

(Salvia guaranitica)

- Dark blue flowers mid-spring to mid-fall
- Evergreen or deciduous evergreen
- USDA zones hardy to 10°F USDA zones 8-10
- Sunset zones 4-7 (with protection), 8-24
- Drought resistant, low maintenance, attracts pollinators, deer resistant
- Use as a landscape or container plant



'Love And Wishes' Salvia

(*Salvia* spp.)

- Dark purple flowers in fall
- Evergreen or deciduous herbaceous
- USDA zones hardy to 25
- Sunset zones 16-24; annual in cooler areas
- Drought resistant and heat tolerant
- Attracts pollinators
- Use as a landscape or container plant



Orange Rocket Berberis

(*Berberis thunbergii* 'Orange Rocket')

- Deciduous
- USDA zones hardy to -20°F USDA zones 5-9
- Sunset zones 2B, 3-24
- Drought resistant, low maintenance, heat tolerant, beautiful foliage
- Use as a landscape, border, container, slope, or rock garden plant

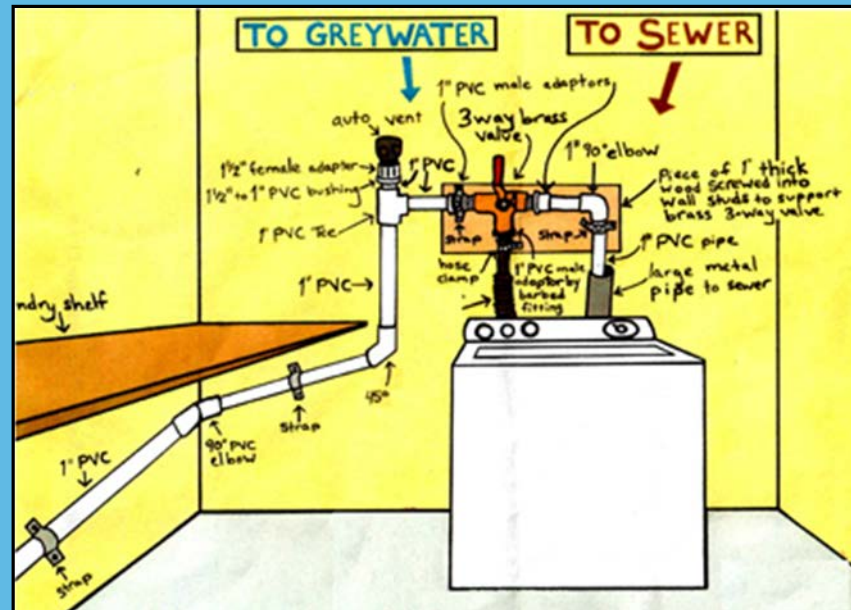


Use of Graywater to Irrigate California Landscapes



The use of graywater (also spelled greywater, grey water and gray water) to irrigate landscape plants is increasing throughout the united states, particularly in California and other arid states. Municipalities are rapidly amending their codes to encourage the use of home graywater systems.

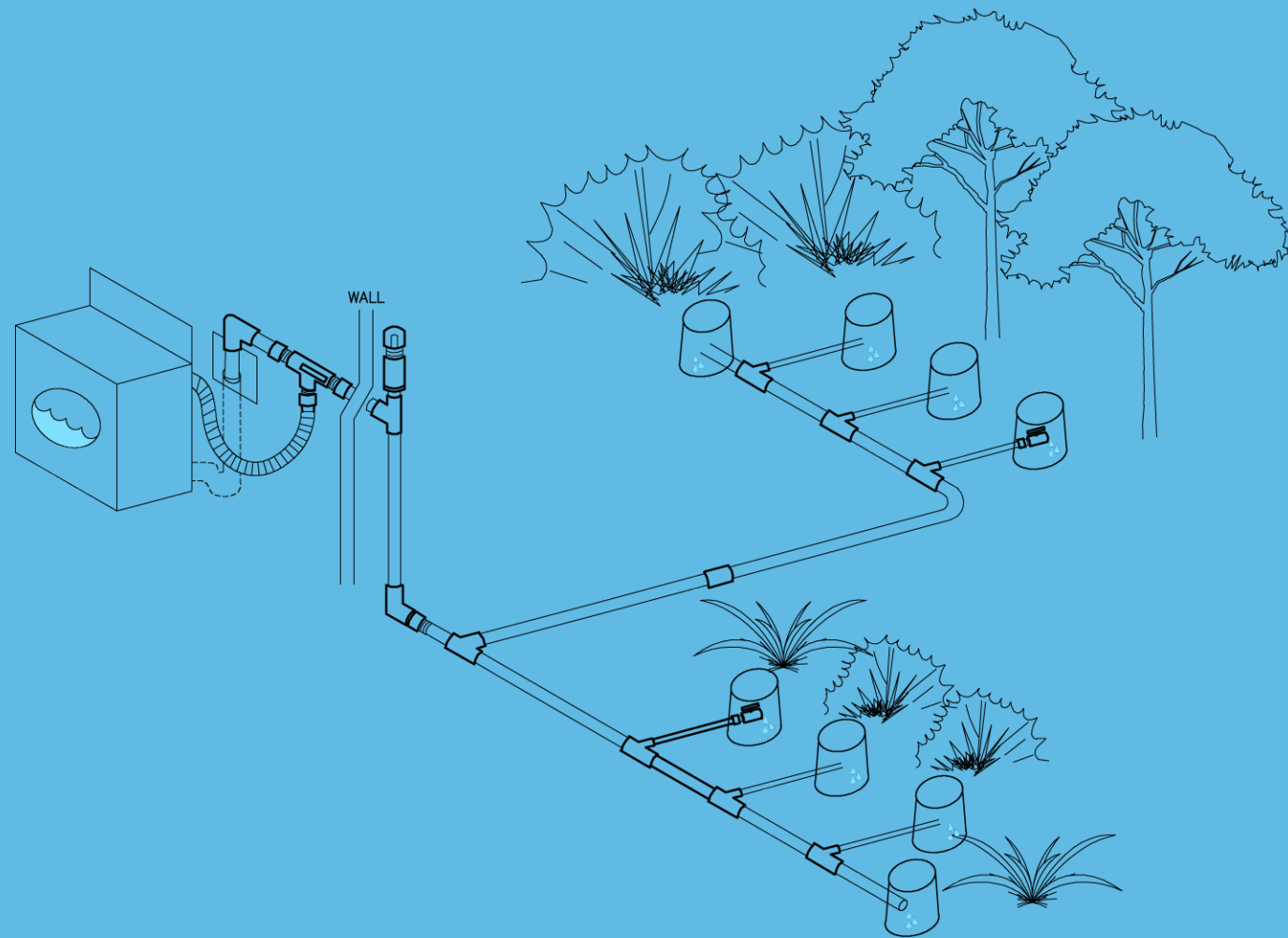
A construction permit is no longer required for the installation of a single-family or two-family residential graywater irrigation system from a washing machine to an outdoor irrigation or disposal field as long as it does not alter the household plumbing.



How Much Graywater Can be Generated?

- Between 10 And 25 Gallons Per Washing Machine Load Is Generated From A Horizontal Drum Machine (Side Loader)
- About 40 Gallons Per Washer Load Is Generated From A Top Loader.





Due to low but potential health risks, graywater should not be used to irrigate - or come into contact with - edible plants.



Affordable housing project in Los Angeles (Casa Domingues) irrigated with a large, complex graywater system



- Graywater is often directed to mulch basins constructed by replacing several inches of soil with coarse organic mulch
- They work well for irrigating flower beds and small ornamentals
- however, basins constructed within the drip line of mature trees are not recommended and can result in injury to established roots and unstable and unsafe trees



Know Your Soil (Type) Texture

Table 16A-2 Design Criteria of Six Typical Soils

Type of Soil	Square Feet	Gallons	Square Meters	Liters
	<i>Minimum square feet of irrigation/leaching area per 100 gallons of estimated graywater discharge per day</i>	<i>Maximum absorption capacity in gallons per square foot of irrigation/leaching area for a 24-hour period</i>	<i>Minimum square meters of irrigation/leaching area per liter of estimated graywater discharge per day</i>	<i>Maximum absorption capacity in liters per square meter of irrigation/leaching area for a 24-hour period</i>
<i>Coarse sand or gravel</i>	20	5.0	0.005	203.7
<i>Fine sand</i>	25	4.0	0.006	162.9
<i>Sandy loam</i>	40	2.5	0.010	101.8
<i>Sandy clay</i>	60	1.7	0.015	69.2
<i>Clay with considerable sand or gravel</i>	90	1.1	0.022	44.8
<i>Clay with small amounts of sand or gravel</i>	120	0.8	0.030	32.6

Water Use Of Trees At Luxury Consumption

Climate	Relative Water Requirement of Tree/Shrub (July)	50 square foot canopy	100 square foot canopy	200 square foot canopy
Coastal (historical evapotranspiration = 1 inch/week)	Low	10	19	38
	Medium	16	31	62
	High	25	50	100
Inland (historical evapotranspiration = 2 inches/week)	Low	19	38	76
	Medium	31	62	124
	High	50	100	200
Desert (historical evapotranspiration = 3 inches/week)	Low	28	57	114
	Medium	47	93	186
	High	75	150	300



**Thank You
for Your Service as a UCCE
Master Gardener**



Questions?

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