

**CITY OF YREKA
DEPARTMENT OF PUBLIC WORKS
WATER EFFICIENCY PROGRAM**

**REDUCING WATER BILLS THROUGH
WATER EFFICIENT LANDSCAPING**

LANDSCAPING AND IRRIGATION IDEAS



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Sustainable Landscaping



Sustainable landscaping is a new approach which enhances irrigation water use efficiency. “A sustainable landscape is designed to be both attractive and in balance with the local climate and environment, and it should require minimal resource inputs. Thus, the design must be functional, cost-efficient, visually pleasing, environmentally friendly and maintainable.... Also, compost, fertilization, grass cycling, pest control measures that avoid or minimize the use of chemicals, integrated pest management, using the right plant in the right place, appropriate use of turf, irrigation efficiency, and xeriscaping or water-wise gardening are all components of sustainable landscaping.”

The landscape and irrigation design ideas for water use efficiency are a part of sustainable landscaping for Yreka gardens. In the Water Efficiency Program for the City, work on sustainable landscaping has focused on saving summer irrigation water through a voluntary limited summer watering schedule, good plant selection, and water saving landscape and irrigation design and installation.

Landscape Design Ideas for Water Use Efficiency

1. Before changing your landscaping, think about how you will use your yard and garden areas, including:
 - *Views from the street.*
 - *Entrance area landscaping.*
 - *Rear, private use and entertaining areas.*
 - *Children’s play areas.*
 - *Vegetable gardens and fruit trees.*
 - *Vehicle access and on-site parking.*
 - *Storage and utility areas.*
 - *Privacy screening from the street and adjacent properties.*
 - *Shade on use areas or the house, or sun in the winter.*
2. How much lawn do you need? Minimize lawn areas, since lawns generally use more water than any other type of landscaping.



- *For aesthetics, locate smaller lawns in key visual spots such as near entry ways or in main views from the street.*
 - *As a surface for use, smaller lawns can be located for specific activities, such as children’s play.*
 - *If a lawn is not needed at all, but is really just space filler, it can be replaced with low water use shrubs or groundcover plants, or with soft porous surfaces such as gravel or decomposed granite.*
 - *Replacing lawn with extensive solid paving will increase run-off and heat in the yard during the summer.*
3. Plan landscaping as areas where all the plants have similar water requirements, called “hydrozones”.
- *Generally, trees, shrubs and groundcovers will be in one type of hydrozone, and lawns and annuals in separate hydrozones.*
 - *Plan hydrozones for micro-climate locations such as the shady north sides and sunny south sides of buildings.*
 - *Irrigation systems can be efficiently designed using appropriate types of equipment for each hydrozone, such as rotary stream heads for lawns and drip systems for trees and shrubs; instead of trying to mix them up.*
 - *Very low (or no) water use, or xeriscape, landscaping will need separate hydrozones.*
4. Select appropriate plants, in tune with the natural environment and climate.
- *Consider Yreka’s overall climate, with five months of hot, dry summer and little or no rain.*
 - *Use plants identified as moderate, low, or very low water use in the Yreka Water Efficient Landscape Plant Guide, or other gardening books.*
 - *The Guide only includes plants recommended as hardy enough for Yreka.*
 - *To save irrigation water in the yard, don’t use high water use plants.*
 - *Select plants of the proper size and spacing for their locations, without overcrowding.*



Landscape Installation Ideas for Water Use Efficiency

1. Look at the soils in the planting areas.
 - *Soil textures can be generalized into sandy soils, loamy soils and clay.*
 - *Sandy soils will allow faster and deeper water penetration, but will dry out faster. Apply less water more frequently.*
 - *Loamy soils will absorb water at an even pace without much run-off, and are the most desirable planting soils.*
 - *Clay soils absorb water more slowly, but hold more water and are slower to dry out. To avoid runoff, apply water more slowly using repeat cycles.*
 - *Deeper soil moisture will have slower and/or less water loss through evaporation.*
 - *Soils in planting areas may need to be improved with amendments and fertilizer to promote deeper water and root penetration.*
 - *Consider soils testing in a lab for natural chemicals or contaminants which can affect plants.*
2. In sloped planting areas, use terraces or basins around plants to help retain irrigation water and reduce runoff.
 - *Grade or ditch for runoff to existing swales or storm drains.*
 - *Avoid draining across walkways or paving to limit wet, slippery spots.*
3. Drain standing water from planting areas that are too flat or have clay soils.
 - *As an alternative, consider a “raingarden” concept; using low areas as retention basins which are landscaped to temporarily hold runoff.*
4. Select younger plants as bareroot, or in smaller containers, with good root systems.
 - *Deeper root systems will more efficiently use soil moisture and require less water.*
 - *Plants can be root pruned for problems before planting.*
 - *Smaller plants with good, deep roots will grow faster and catch up to initially larger container plants.*
5. Mulch planting areas at least 3 in. deep with stabilized bark chips, or other material to help retain soil moisture and reduce irrigation needs.



- *It is not recommended to mulch directly around the stem or trunk at the base of a plant.*
- *Compost can be used as mulch, but will decompose sooner and have to be replaced.*
- *Although gravel and other soft surface materials do help retain soil moisture, they will get too hot in the summer to be used as mulch for planting areas.*

Landscape Maintenance Ideas for Water Use Efficiency

1. Trees, shrubs and other plants may need pruning and spraying for pests, and will probably need fertilizer.
 - *Avoid over-fertilizing and excess plant growth to save irrigation water.*
 - *Many plants have natural adaptations to lower water applications, and will be healthy with less water.*
2. Mow lawns at 3 inches height or more, and aerate and/or thatch periodically to promote deeper water penetration and soil moisture retention.

Irrigation Design Ideas for Water Use Efficiency

1. Irrigate efficiently during May through September, the five dry months in Yreka.
 - *Water no more than every other day, from 8 pm to 8am to reduce evaporation and soil moisture water loss due to sun and wind.*
 - *Water deeply to wet the entire root zone, then let the soil dry before watering again.*
 - *Avoid runoff by not applying water faster than the soil can absorb it.*
 - *Consider using repeat irrigation cycles to let the soil dry out.*
 - *Water only the planting areas, don't overspray adjacent areas.*
 - *Adjust watering schedules often to fit the weather and seasons.*
 - *Test for soil moisture at one or two feet depth to see if irrigation is effective.*
 - *Check irrigation systems often for plumbing leaks, broken heads or other equipment malfunctions.*
 - *Adjust the irrigation system for coverage on a regular basis.*



2. Install a dedicated landscape irrigation water meter (second meter) if the landscaped areas total more than 5000 sq. ft. This will allow the landscape water use to be monitored.
3. To keep the static pressure at 60 to 70 psi for irrigation equipment, install a pressure reducer on the landscape water service.
 - *Residential irrigation heads and equipment generally do not operate well, and can be damaged above these pressures.*
 - *With higher operating pressures, the irrigation heads will put out more water than specified, and the patterns may be distorted.*
4. For Yreka's hot, dry summer climate, automatic irrigation systems work well.
 - *This type of system using an irrigation controller or timers will allow watering to be done on chosen days in early morning hours to minimize water loss due to evaporation or wind.*
 - *Automatic controllers can also be adjusted easily to change watering times and cycle durations, and will always shut off.*
5. New "smart" irrigation controllers are also available, which automatically shut off the irrigation if it rains, or allow automatic adjustment of the irrigation schedule by remote signal due to changes in the weather.
6. In lawn or turf hydrozones, use new water efficient irrigation head types.
 - *As compared to older spray type heads, modern rotary heads use a water stream and droplets which apply water more slowly, and are less likely to evaporate or drift in the wind.*
7. In hydrozones for trees, shrubs, groundcovers, vines or annuals and perennials, drip irrigation systems will save significant amounts of water.
 - *Drip provides much more water efficient, slower and deeper-penetrating irrigation at each plant root ball.*
 - *Drip systems need a pressure reducer to operate at lower pressures, and a filter screen to remove larger particles in the water.*



8. For those residential gardens using hose irrigation, simple hose bibb timers can be used to start and stop irrigation at certain times of day, and for set lengths of time, with a shut off time.
9. Regularly check the irrigation system for leaks, broken heads or other equipment, and irrigation start times and cycle duration.
 - *If watering in early morning hours, before wake up, it is too easy to forget to check on the irrigation system operation.*

Innovative Landscaping

Raingardens are an innovative sustainable landscaping design idea for water use efficiency. This system involves temporarily storing and using precipitation water in earth retention basins that are landscaped, reducing the need for irrigation watering. Raingardens are used mostly in areas of the country that have significant summer rainfall and normally do not need additional irrigation. Yreka and most of the West and Southwest have a hot, dry summer climate with little rainfall. If your yard has a good location for a runoff retention basin, a raingarden may be worth trying; although summer irrigation water needs may not be significantly reduced.

Alternative irrigation water sources can also be considered for saving costly City drinking water. The most common source is saving rain water runoff from roofs in barrels or containers, and re-using it for plant watering. This method is primarily useful for hand watering, and probably will not work well for automatic irrigation systems. The use of gray water from house sinks has also been proposed, but must comply with public health standards to prevent the spread of disease.

Internet Links for Water Efficient Landscaping

California Department of Water Resources, Office of Water Use Efficiency
www.owue.water.ca.gov/landscape

University of California Cooperative Extension, Agriculture and Natural Resources
www.ucanr.org

California Urban Water Conservation Council
www.h2ouse.org; www.cuwcc.org

Sunset Magazine, <www.sunset.com>