Water Saving Design Ideas for Oklahoma Landscapes
About this guide:

The City of Oklahoma City Utilities Department has partnered with the Oklahoma State University Department of Horticulture & Landscape Architecture and the Oklahoma Cooperative Extension Service to promote outdoor water conservation through proper outdoor watering and drought-tolerant landscaping. The designs in this guide provide several concepts incorporating the different elements and principles of design. These designs are intended to provide inspiration and ideas for a typical residential application. The plants listed in this guide are suitable for Oklahoma and were chosen for their heat and drought tolerance.

How to use this guide:

This booklet provides six different landscape designs all differing in general concept and in array of plant selection and planting strategy. Each design is accompanied by a narrative explaining the basic elements and principles to each concept and how plants can be used to compliment the forms created by bed arrangements, lawns, and hardscape areas.

The designs provided are intended to serve as inspiration and generate ideas for specific application to residential properties. Various factors such as lot size, architectural features, and environmental conditions affect decisions made in landscape design. Additional plants well-suited for Oklahoma water conservation can be found in the Plant Selections for Oklahoma booklet. The plants listed are not all inclusive and many other plants not listed in this booklet may be appropriate for the landscape.

Authors:
John M. Schroeder
Malarie J. Gotcher
Courtney L. Keck
Samantha J. Snyder
Hannah A. Wahlmeier
Dr. Justin Q. Moss
SEVEN PRINCIPLES FOR CREATING A WATER CONSERVING LANDSCAPE

1. GOOD LANDSCAPE PLANNING AND DESIGN
- Consider aspects of your property such as building footprint, utilizing hardscape areas, slope and drainage, areas for turf as needed, and attractive looking plants that require limited water use.

2. LOW WATER USE PLANTS
- Many attractive native plant cultivars that are well-suited for the natural environmental conditions are available at local nurseries and garden centers. Other drought tolerant non-native species may be appropriate if tolerant of temperature extremes and other conditions such as soil type, sun requirements, and disease resistance. Use moderate water using plants near the home and heavily trafficked areas and transition to very low water use plants near property perimeter and in less visible areas.

3. APPROPRIATE TURF AREAS
- Turf has its purpose in the landscape, but should be used efficiently and effectively. Consider how the turf area will be used when selecting a turf species. Bermuda grass can be maintained at a lower height, making it ideal for high traffic areas that will be used for play areas and recreation. Buffalo Grass, Blue Grama Grass or a similar native mix is a better water conserving alternative for turf areas that will not be as intensely used.

4. EFFICIENT IRRIGATION
- Plants should be grouped into water use zones to maximize efficient irrigation and prevent over watering. Irrigate turf areas separate from other areas. Drip irrigation in other planting areas will prevent water being wasted by runoff. Rain sensors can be installed on controllers to prevent unneeded irrigation when the soil has adequate moisture for plant health. Water cisterns can be tied into roof drain systems, collecting stormwater that can be used for supplemental watering in garden areas for vegetables and herbs.

5. SOIL IMPROVEMENTS
- Addition of organic matter and other soil amendments will provide a healthy growing medium for plants, keeping plants from becoming overstressed during extreme environmental conditions.

6. USE OF MULCHES
- Mulch acts as a buffer retaining soil moisture, preventing weed growth, and can help control soil erosion caused by stormwater runoff.

7. APPROPRIATE MAINTENANCE
- Careful attention to routine maintenance is important in a landscape’s aesthetic and functional quality. Pruning, weeding and using an organic fertilizer at regular intervals will help the landscape continue to grow and achieve the initial intended design.
LANDSCAPE PLANTING OPTIONS

CANOPY SHADE TREES
SHUMARD OAK - Quercus shumardii
CADDIO SUGAR MAPLE - Acer saccharum var. Caddo
CHINESE PISTACHE - Pistacia chinensis

MODERATE/LOW WATER USAGE
ORNAMENTAL TREES
CRAB APPLE - Malus ‘Prairie Fire’
OKLAHOMA REDBUD - Cercis canadensis ssp. texensis

LOW/VERY LOW WATER USAGE
ORNAMENTAL TREES
MEXICAN PLUM - Prunus mexicana
WESTERN SOAPBERRY - Sapindus drummondii

EVERGREEN SCREEN TREE
CHINESE JUNIPER - Juniperus chinensis
ROCKY MOUNTAIN JUNIPER - Juniperus scopulorum

VERY LOW WATER USAGE
ORNAMENTAL PLANTS
SHRUBS
FRAGRANT SUMAC - Rhus aromatica ‘Grow Low’
CUTLEAF STAGHORN SUMAC - Rhus typhina ‘Laciniata’
RED YUCCA - Hesperaloe parviflora
GRASSES
BIG BLUESTEM - Andropogon gerardii
PRAIRIE DROPSEED - Sporobolus heterolepis
MEXICAN FEATHER GRASS - Nassella tenuissima
PERENNIALS
COMMON YARROW - Achillea millefolium
MYRTLE EUPHORBIA - Euphorbia myrsinites
RUSSIAN SAGE - Perovskia atriplicifolia

LOW WATER USAGE
ORNAMENTAL PLANTS
SHRUBS
COMMON JUNIPER - Juniperus communis
MEXICAN FIRE - Anisacanthus quadrifidus
PRIVET - Ligustrum spp.
GRASSES
MAIDEN GRASS - Miscanthus sinensis
SWITCH GRASS - Panicum virgatum
BLUE OAT GRASS - Helictotrichon sempervirens
PERENNIALS
PURPLE CONEFLOWER - Echinacea purpurea
GIANT CONEFLOWER - Rudbeckia maxima
MUGWORT - Artemisia ‘Powis Castle’

MODERATE WATER USAGE
ORNAMENTAL PLANTS
SHRUBS
SHRUB ROSES ‘KNOCKOUT’ - Rosa spp.
KOREAN SPICE VIBURNUM - Viburnum carlesii
GRASSES
BLUE LYMGRASS - Leymus arenarius
FEATHER REED GRASS - Calamagrostis ‘Karl Forster’
BLUE FESCUE - Festuca glauca
PERENNIALS
DAYLILY - Hemerocallis spp.
IRIS - Iris spp.
BLUE MIST - Caryopteris x clandonensis

LOW WATER USAGE
TURF/LAWN AREA
BUFFALO GRASS - Bouteloua dactyloides

MODERATE WATER USAGE
TURF/LAWN AREA
ZOYSIA GRASS - Zoysia spp.

RECTILINEAR LANDSCAPE DESIGN

This landscape design concept emphasizes architectural features of the home by aligning trees and planting beds with elements such as exterior walls, windows and doors. Plants are placed and organized in a very formal, or grid-like, fashion. Selected plants should be very uniform and neat in nature. Smaller ornamental plants should be arranged in single species masses, utilizing either triangular or soldier type spacing. This type of design compliments the architectural aspects of a property and provides a very orderly landscape for easy maintenance.
LANDSCAPE PLANTING OPTIONS

CANOPY SHADE TREES
- SHUMARD OAK - Quercus shumardii
- BALD CYPRESS - Taxodium distichum
- CHINESE PISTACHE - Pistacia chinensis

MODERATE/LOW WATER USAGE ORNAMENTAL TREES
- OKLAHOMA REDBUD - Cercis canadensis ssp. texensis
- JAPANESE TREE LILAC - Syringa reticulata

LOW/VERY LOW WATER USAGE ORNAMENTAL TREES
- MEXICAN PLUM - Prunus mexicana
- DESERT WILLOW - Chilopsis linearis

EVERGREEN SCREEN TREE
- CHINESE JUNIPER - Juniperus chinensis
- ROCKY MOUNTAIN JUNIPER - Juniperus scopulorum

VERY LOW WATER USAGE ORNAMENTAL PLANTS

SHRUBS
- FRAGRANT SUMAC - Rhus aromatica 'Grow Low'
- CUTLEAF STAGHORN SUMAC - Rhus typhina 'Laciniata'
- NINEBARK - Physocarpus opulifolius 'Monlo'

GRASSES
- BIG BLUESTEM - Andropogon gerardii
- MEXICAN FEATHER GRASS - Nassella tenuissima
- PURPLE THREE AWN - Aristida purpurea

PERENNIALS
- EVENING PRIMROSE - Oenothera macrocarpa
- CATMINT - Eupatorium myrsinites
- AUTUMN SAGE - Salvia greggii

LOW WATER USAGE ORNAMENTAL PLANTS

SHRUBS
- WINTER JASMINE - Jasminum nudiflorum
- MEXICAN FIRE - Anisacanthus quadrifidus
- FLAME HONEYSUCKLE - Lonicera x heckrotti

GRASSES
- MAIDEN GRASS - Miscanthus sinensis
- INDIAN GRASS - Sorghastrum nutans
- BLUE OAT GRASS - Helictotrichon sempervirens

PERENNIALS
- COREOPSIS - Coreopsis ssp.
- PRAIRIE BLAZING STAR - Liatris pycnostachya
- MUGWORT - Artemisia 'Powis Castle'

MODERATE WATER USAGE ORNAMENTAL PLANTS

SHRUBS
- CHASTE TREE - Vitex agnus-castus
- SMOKE TREE - Cotinus coggygria
- DECIDUOUS HOLLY - Ilex decidua

GRASSES
- BLUE LYME GRASS - Leymus arenarius
- NORTHERN SEA OATS - Chasmanthium latifolium
- BLUE FESCUE - Festuca glauca

PERENNIALS
- GAURA - Gaura lindheimeri 'Siskiyou Pink'
- JAPANESE PAINTED FERN - Athyrium nipponicum
- ARKANSAS BLUESTAR - Amsonia hubrichtii

LOW WATER USAGE TURF/LAWN AREA
- BUFFALO GRASS - Bouteloua dactyloides

MODERATE WATER USAGE TURF/LAWN AREA
- BERMUDA GRASS - Cynodon dactylon

CURVILINEAR DESIGN CONCEPT

This landscape design concept uses swooping gestures and large tangent arcing forms to mimic a more naturalistic looking landscape. The forms created by this design strategy suggests movement that should be reflected in plant selection. Large masses of airy perennials and shrubs can be grouped in a swooping contour to bed edges, with intermittent structural plantings to provide contrast and anchor ends of planting beds. Try and avoid creating tight, acute angles at bed intersections and near hard scape areas. These sharp angles can present maintenance challenges, making it difficult to plant, mow, and water effectively.
**LANDSCAPE PLANTING OPTIONS**

**CANOPY SHADE TREES**
- KENTUCKY COFFEE TREE - Gymnocladus dioica
- THORNLESS HONEY LOCUST - Gleditsia triacanthos
- GOLDEN RAIN TREE - Koelreuteria paniculata

**MODERATE/LOW WATER USAGE**
**ORNAMENTAL TREES**
- CRAB APPLE - Malus 'Prairie Fire'
- SHANTUNG MAPLE - Acer truncatum

**LOW/VERY LOW WATER USAGE**
**ORNAMENTAL TREES**
- MEXICAN PLUM - Prunus mexicana
- OKLAHOMA REDBUD - Cercis canadensis ssp. texensis

**EVERGREEN SCREEN TREE**
- EASTERN ARBORVITAE - Thuja occidentalis
- ROCKY MOUNTAIN JUNIPER - Juniperus scopulorum

**VERY LOW WATER USAGE**
**ORNAMENTAL PLANTS**
- SHRUBS
  - FRAGRANT SUMAC - Rhus aromatica 'Grow Low'
  - CUTLEAF STAGHORN SUMAC - Rhus typhina 'Laciniata'
  - NINEBARK - Physocarpus opulifolius 'Monlo'

**GRASSES**
- BIG BLUESTEM - Andropogon gerardii
- PURPLE THREE AWN - Aristida purpurea
- MEXICAN FEATHER GRASS - Nassella tenuissima

**PERENNIALS**
- COMMON YARROW - Achillea millefolium
- BUTTERFLY WEED - Asclepias tuberosa
- RUSSIAN SAGE - Perovskia atripicifolia

**LOW WATER USAGE**
**ORNAMENTAL PLANTS**
- SHRUBS
  - FLAME HONEYSUCKLE - Lonicera x heckrottii
  - MEXICAN FIRE - Anisacanthus quadrifidus

- GRASSES
  - MAIDEN GRASS - Miscanthus sinensis
  - SWITCH GRASS - Panicum virgatum
  - SIDE-OATS GRAMA - Bouteloua curtipendula

- PERENNIALS
  - PURPLE CONEFLOWER - Echinacea purpurea
  - COREOPSIS - Coreopsis spp.
  - VERBENA - Verbena canadensis

**MODERATE WATER USAGE**
**ORNAMENTAL PLANTS**
- SHRUBS
  - SHRUB ROSES ‘KNOCKOUT’ - Rosa spp.
  - DECIDUOUS HOLLY - Ilex decidua

- GRASSES
  - BLUE LYME GRASS - Leymus arenarius
  - NORTHERN SEA OATS - Chasmanthium latifolium
  - BLUE FESCUE - Festuca glauca

- PERENNIALS
  - INDIAN BLANKETFLOWER - Gaillardia x grandiflora
  - BLACK EYED SUSAN - Rudbeckia hirta
  - BLUE MIST - Caryopteris x clandonensis

**LOW WATER USAGE**
**TURF/LAWN AREA**
- BUFFALO GRASS - Bouteloua dactyloides

**MODERATE WATER USAGE**
**TURF/LAWN AREA**
- BERMUDA GRASS - Cynodon dactylon

---

**RADIAL DESIGN CONCEPT**

This landscape design concept utilizes several circular center points strategically placed, based off architectural elements, and radiating arcs to create a combination of hardscape forms, planting beds, and lawn areas. Layer plantings in this configuration is important to create picturesque views from seating areas. Consider plant height, color and foliage texture when using this layer technique. Use taller plants near edges of the property and the home. Transition to shorter plants when nearing hardscape areas. Use differing plant textures when layering to provide contrast in foliage and movement. Also consider plants’ color and time of bloom to provide year-round interest.
LANDSCAPE PLANTING OPTIONS

CANOPY SHADE TREES
SHUMARD OAK - Quercus shumardii
CADDIO SUGAR MAPLE - Acer saccharum var. Caddo
BALD CYPRESS - Taxodium distichum

MODERATE/LOW WATER USAGE
ORNAMENTAL TREES
CRAB APPLE - Malus ‘Prairie Fire’
JAPANESE TREE LILAC - Syringa reticulata

LOW/VERY LOW WATER USAGE
ORNAMENTAL TREES
DESERT WILLOW - Chilopsis linearis
OKLAHOMA REDBUD - Cercis canadensis ssp. texensis

EVERGREEN SCREEN TREE
CHINESE JUNIPER - Juniperus chinensis
ARIZONA CYPRESS - Cupressus arizonica

LOW WATER USAGE
ORNAMENTAL PLANTS

SHRUBS
COMMON JUNIPER - Juniperus communis
FLAME HONEYSUCKLE - Lonicera x heckrottii
PRIVET - Ligustrum spp.

GRASSES
MAIDEN GRASS - Miscanthus sinensis
SWITCH GRASS - Panicum virgatum
SIDEOATS GRAMA - Bouteloua curtipendula

PERENNIALS
PURPLE CONEFLOWER - Echinacea purpurea
COREOPSIS - Coreopsis spp.
MUGWORT - Artemisia ‘Powis Castle’

MODERATE WATER USAGE
ORNAMENTAL PLANTS

SHRUBS
SHRUB ROSES ‘KNOCK-OUT’ - Rosa spp.
KOREAN SPICE VIBURNUM - Viburnum carlesii

GRASSES
BLUE LYME GRASS - Leymus arenarius
FEATHER REED GRASS - Calamagrostis ‘Karl Foerster’
BLUE FESCUE - Festuca glauca

PERENNIALS
BLACK EYED SUSAN - Rudbeckia hirta
ARKANSAS BLUESTAR - Amsonia hubrichtii
BLUE MIST - Caryopteris x clandonensis

LOW WATER USAGE
TURF/LAWN AREA
BUFFALO GRASS - Bouteloua dactyloides

MODERATE WATER USAGE
TURF/LAWN AREA
ZOYSIA GRASS - Zoysia spp.

GEOMETRIC DESIGN CONCEPT
This landscape design concept is similar to the rectilinear concept in terms of forms perpendicular to architectural features. It differs in its use of repeating patterns that are similar and proportionate to one another or abstractions that mimic other forms in the landscape. Plant selections should reflect the same similarities in respect to these proportions. Arrange plants in groupings within beds that mimic the forms created by hardscape features, lawn areas, and the different bed shapes. Using this repetition of patterns in different proportions creates a unified landscape with interesting variety in scale and proportion.
LANDSCAPE PLANTING OPTIONS

CANOPY SHADE TREES
- SHUMARD OAK - Quercus shumardii
- CADDIO SUGAR MAPLE - Acer saccharum var. Caddo
- LACEBARK ELM - Ulmus parviflora

MODERATE/LOW WATER USAGE

ORNAMENTAL TREES
- JAPANESE RED PINE - Pinus densiflora
- OKLAHOMA REDBUD - Cercis canadensis ssp. texensis

LOW/VERY LOW WATER USAGE

ORNAMENTAL TREES
- MEXICAN PLUM - Prunus mexicana
- WESTERN SOAPBERRY - Sapindus drummondii

EVERGREEN SCREEN TREE
- CHINESE JUNIPER - Juniperus chinensis
- ROCKY MOUNTAIN JUNIPER - Juniperus scopulorum

LOW WATER USAGE

ORNAMENTAL PLANTS

SHRUBS
- WINTER JASMINE - Jasminum nudiflorum
- FLAME HONEYSUCKLE - Lonicera x heckrottii

GRASSES
- MAIDEN GRASS - Miscanthus sinensis
- INDIAN GRASS - Sorghastrum nutans
- RAENNA GRASS - Erianthus ravenae

PERENNIALS
- PURPLE CONEFLOWER - Echinacea purpurea
- GIANT CONEFLOWER - Rudbeckia maxima
- VERBENA - Verbena canadensis

LOW WATER USAGE

ORNAMENTAL PLANTS

SHRUBS
- DECIDUOUS HOLLY - Ilex decidua
- KOREAN SPICE VIBURNUM - Viburnum carlesii

GRASSES
- BLUE LYM GRASS - Leymus arenarius
- FEATHER REED GRASS - Calamagrostis ‘Karl Foerster’
- BLUE FESCUE - Festuca glauca

PERENNIALS
- INDIAN BLANKETFLOWER - Gaillardia x grandiflora
- JAPANESE PAINTED FERN - Athyrium niponicum
- GAURA - Gaura lindheimeri ‘Siskiyou Pink’

LOW WATER USAGE

TURF/LAWN AREA
- BUFFALO GRASS - Bouteloua dactyloides

MODERATE WATER USAGE

TURF/LAWN AREA
- ZOYSIA GRASS - Zoysia spp.

ORGANIC DESIGN CONCEPT
This landscape design concept utilizes forms similar to the curvilinear concept but truly emphasizes focal forms that are generally created by closed curves and lack sharp angles. Perpendicular and slightly acute angles can be used in other areas of the landscape to focus visual attention to the most important areas of the outdoor space. In this case, the large back patio area and recreational lawn area. In order to maintain the organic design in the secondary planting areas that include sharper angles, use the same concept by using larger closed organic forms of plant masses and compliment the smaller negative spaces left over with accent planting that receive less attention.
## Landscape Planting Options

### Canopy Shade Trees
- Kentucky Coffee Tree - Gymnocladus dioica
- Thornless Honey Locust - Gleditsia triacanthos
- Chinese Pistache - Pistacia chinensis

### Moderate/Low Water Usage Ornamental Trees
- Crab Apple - Malus 'Prairie Fire'
- Shantung Maple - Acer truncatum

### Low/Very Low Water Usage Ornamental Trees
- Mexican Plum - Prunus mexicana
- Oklahoma Redbud - Cercis canadensis ssp texensis

### Evergreen Screen Tree
- Arizona Cypress - Cupressus arizonica
- Pinyon Pine - Pinus edulis

### Very Low Water Usage Ornamental Plants
- Fragrant Sumac - Rhus aromatica ‘Grow Low’
- Cutleaf Staghorn Sumac - Rhus typhina ‘Laciniata’
- Red Yucca - Hesperaloe parviflora

### Grasses
- Little Blue Stem - Schizachyrium scoparium
- Prairie Dropseed - Sporobolus heterolepis
- Purple Three Awn - Aristida purpurea

### Perennials
- Common Yarrow - Achillea millefolium
- Butterfly Weed - Asclepias tuberosa
- Cardinal Penstemon - Penstemon cardinalis

### Low Water Usage Ornamental Plants
- Flame Honeysuckle - Lonicera x heckrottii
- Mexican Fire - Anisacanthus quadrifidus

### Grasses
- Sideoats Grama - Bouteloua curtipendula
- Indian Grass - Sorghastrum nutans
- Blue Oat Grass - Helictotrichon sempervirens

### Perennials
- Purple Coneflower - Echinacea purpurea
- Prairie Blazing Star - Liatris pycnostachya
- Evening Primrose - Oenothera macrocarpa

### Moderate Water Usage Ornamental Plants
- Deciduous Holly - Ilex decidua
- Smoke Tree - Cotinus coggygria

### Grasses
- Northern Sea Oats - Chasmanthium latifolium
- Feather Reed Grass - Calamagrostis ‘Karl Foerster’
- Blue Fescue - Festuca glauca

### Perennials
- Indian Blanketflower - Gaillardia x grandiflora
- Black Eyed Susan - Rudbeckia hirta
- Verbena On-A-Stick - Verbena bonariensis

### Low Water Usage Turf/Lawn Area
- Buffalo Grass - Bouteloua dactyloides

### Moderate Water Usage Turf/Lawn Area
- Bermuda Grass - Cynodon dactylon

## Modern Prairie Landscape Design Concept

This landscape design concept combines the idea of an American Prairie plant palette with principles of a modern, irregular use of lines for hardscapes and planting boundaries. This combination achieves a contrasting scheme of very naturalistic plant materials with very constructed arrangement, with strong relationship to architecture. A strong emphasis on native plants is used in this type of design, but similar to the rectilinear design, are planted in regimented fashion using soldier or triangular spacing. Areas further away from the home near property edges can be planted in a more natural arrangement including wildflower mixes to maintain the natural ecosystem qualities of the plant selections.
The City of
OKLAHOMA CITY
UTILITIES DEPARTMENT

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences
and Natural Resources
Oklahoma State University

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, gender, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of $1.75 per copy. 0713 JS.