LEHI CITY

WATER-WISE LANDSCAPE

# GUIDELINES

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# INTRODUCTION

## WATER-WISE LANDSCAPING PRINCIPLES:

Utah is a dry state. Lehi City averages roughly 12 inches of precipitation a year. Currently, irrigating traditional landscapes of mostly turf grass use approximately 50% of Lehi City's water consumption. By using water-wise landscaping or xeriscape techniques, water use can be significantly reduced in Lehi City. Currently Lehi City's Development Code requires that **at least 70%** of the xeriscaped area contain plants, trees, and shrubs. This guide has been created to help create interesting landscapes, while still meeting the city's water-wise landscaping requirements.

Xeriscape organizes plants based on their water requirements to maximize watering efficiency. This can assist in creating a landscape that's sustainable in Utah's dry climate. The term xeriscape is derived from the Greek word "xeros", which means dry. Please note that **xeriscape does not mean "zero"-scape.** Alternative terms used for xeriscaping include local-scapes or water-wise landscaping.

If designed properly, water-wise landscapes can be full of interest and easy to care for. Xeriscaping is based on seven principles aimed to create a successful and eye catching design within each landscape. These steps are described on the following pages.

# 7 PRINCIPLES

## 7 PRINCIPLES OF WATER-WISE LANDSCAPING:

When introducing xeriscaping into a landscape, it is important to follow these steps to create a successful, bright, and colorful landscape. While these steps will be the same for all landscapes, areas that are being landscaped for the first time as opposed to being altered from turf to xeriscape will have different requirements and attributes involved in each step. The steps to xeriscaping are as follows:

1. Landscape design
2. Efficient irrigation
3. Use of low water plants
4. Soil preparation
5. Use of mulches
6. Appropriate use of turf
7. Required maintenance

# 1. LANDSCAPE DESIGN.

Water-wise landscapes require careful attention to design. While these plans do not need to be elaborate, it is important to do the research to know the water use and needs of landscaped plants. If the landscaped area is for a large commercial property, consider outsourcing the initial design process to a landscape architect or designer. While the design does not have to be complex, the initial design will largely influence the future irrigation system and maintenance of the site. Professionals will be able to help create a design that best fits the property's needs regarding maintenance, irrigation, and design.

If designing in-house, the first step is to identify and develop a variety of "zones" within the landscape. Decide where to keep or install turf grass and consider the mature height and width of new plants during the design process. It is important to plan for the future of the landscape, not just the current design. Zones should also utilize plants that require similar water patterns to avoid over watering of plants. Designing landscapes with a variety of water demands is called "hydro-zoning." The types of zones are listed below:

## TYPES OF HYDRO-ZONES

| Hydro-zones | Supplemental Water Requirements | Typical Plant Types |
|---|---|---|
| Very Low | Required for plant establishment | Most native plants |
| Low | Some required during growing season | Most perennials, some tree/shrubs |
| Moderate | Regular amounts required during growing season | Fruit & ornamental trees/shrubs |
| High | Large amounts required during growing season | Turf grass, vegetable gardens |

# 2. IRRIGATION.

Irrigation is necessary to effectively establish the landscape and to maintain plant life. Unfortunately, many irrigation systems result in the water evaporating before it ever reaches the trees or plants. Watering deeply within the soil and less frequently, using drip systems, will result in plants that are deeper rooted and more drought resistant. In addition to watering deeply, the frequency of irrigation will be different in each hydro-zone. For efficient water use, turf and high-water areas should be irrigated separately from native and xeric plants. The frequency each hydro-zone is water will be based on the water requirements of that zone. In addition, the frequency of irrigation will change based on the season.

| Month | Frequency of Irrigation |
|---|---|
| January-April | Once every 6 days (as needed) |
| May | Once every 4 days |
| June | Once every 3 days |
| July | Once every 3 days |
| August | Once every 3 days |
| September | Once every 6 days |
| October-December | Once every 10 days (as needed) |

In many instances, existing irrigation systems can be modified to meet the needs of the hydro-zones; however, some zones may require new systems to fit the water requirements of the plants. Prior to adding new water-wise landscaping, it is important to recognize that new irrigation systems may be necessary to provide for efficient watering.

# 3. USE OF LOW WATER PLANTS.

Plant selection and grouping based upon water requirements can result in a well-designed and varied landscape. Plants shall be selected to improve the form, texture, color, and adaptability of the landscape. While the selected plants do not always need to be the most drought tolerant plants, being aware of the needed water requirements for plants will reduce the chance of over watering. In addition, being conscious of the desired sun exposure for each plant can also influence the placement and selection of plant types. Hydro-zones that have more access to sun or shade will allow for some plants to thrive over others. In the following section, Plant and Tree Recommendations on page 15, there is a list of approved trees and plants for the city of Lehi. While this is not a comprehensive list, it is a good baseline to begin picking appropriate low water plants.

*Cranesbill*

*Red Yucca*

## 4. SOIL PREPARATION.

In dry states such as Utah, soil preparation is important to the success of the landscape. Most urban Utah soils have less than 1% of natural organic matter. Adding organic material (compost) results in soils that will hold moisture longer. Manure should only be put in at the fall months and should be allowed to set over the winter months. Loosening the soil can also provide water and air infiltration which will help improve root development.

## 5. MULCH.

Mulch is anything that covers the bare ground. In-organic mulch and organic mulch help to reduce evaporation, soil temperature, and erosion. Reducing these risks can help improve plant growth and assist in reducing weeds which compete against the plants for water and nutrients. Mulch needs to be 2-4 inches deep to be effective. In addition, using a combination of organic (bark) and in-organic (rock) mulches can add interest and color into water-wise landscapes.

# 6. APPROPRIATE USE OF TURF.

Careful consideration of where turf is desired and the type of grass used is a major component of xeriscaping. To begin, determine the function of turf in the proposed landscape. The following are attributes to consider before adding or removing turf from the area:

- Kid/pet playing areas—keep useable turf
- Under large trees—grass and older plants suffer from a lack of sun light
- Slopes—hard to keep water from running off
- Park strips, odd shapes, narrow areas—difficult to water and dry out quickly

Also consider a variety of grasses to help make the right selection of turf. All grasses have differing levels of suitability for active use, growth habits, and maintenance requirements.

# 7. MAINTENANCE.

All landscapes require a level of regular and periodic maintenance. Replacement of mulches, weeding, pruning, mowing, and irrigation adjustment are routine requirements of both a xeriscape and traditional landscape. The type of design and plant selection will determine the level of maintenance required of the xeriscape area. In the future, consider the following when completing maintenance:

- Plants do not always need the amount of water that we think they do.
- Do not fertilize unless the plant is deficient.
- Let plants grow naturally and prune for health reasons only. Dead-head perennials to avoid reseeding.
- Check irrigation systems and filters every spring and periodically throughout the season.
- Re-mulch areas as needed. Remember not to let the mulch get deeper than 2-4 inches.
- Stay on top of pulling weeds when they are little and use pre-emergent as needed. **DO NOT** till the soil as this will only encourage weed growth.

# PLANT & TREE LIST

This is a list of pre-approved plants that can be successful in Utah's environment. Recognizing this, **exposure may vary in each landscape**. If located in the shade, some of these plants may decline after a few years. Plants marked with an asterisk (*) indicate plants native to Utah.

## VERY LOW WATER

### PERENNIALS

| Common Name | Exposure |
|---|---|
| Firecracker Penstemon* | Sun |
| Globemallow | Sun |
| Chocolate Flower | Sun |
| Mountain Beebalm | Sun |
| Prickly Poppy | Sun |
| Rocky Mountain Penstemon* | Sun |
| Showy Goldeneye | Sun |
| Yarrows | Sun |

### EVERGREEN SHRUBS

| Common Name | Exposure |
|---|---|
| Yucca | Sun |
| Curl Leaf Mahogany* | Sun/Part Sun |

*Firecracker Penstemon*

*Banana Yucca*

*Prickly Pear*

*Maidenhair Tree*

*Blue Atlas Cedar*

# VERY LOW WATER

## EVERGREEN SHRUBS

| Common Name | Exposure |
|---|---|
| Mormon Tea* | Sun |
| Prickly Pear* | Sun |
| Rabbitbrush* | Sun |
| Red Yucca | Sun |
| Sagebrush* | Sun |

# LOW WATER

## DECIDUOUS TREES

| Common Name | Exposure |
|---|---|
| Fairmount Ginkgo Tree | Sun |
| Princeton Sentry Maidenhair Tree | Sun |
| Skyline Honey Locust | Sun |
| Shumard Oak | Sun |
| Bur Oak | Sun |

## CONIFERS

| Common Name | Exposure |
|---|---|
| Arnolds Sentinel Austrian Pine | Sun |
| Black Hills Spruce | Sun |
| Blue Atlas Cedar | Sun/Shade |
| Bosnian Redcone Pine | Sun |
| Rocky Mountain Juniper | Sun |

# LOW WATER

## DECIDUOUS SHRUBS

| Common Name | Exposure |
|---|---|
| Butterfly Bush | Sun |
| Common Snowberry Ninebark | Sun/Part Sun |
| Dwarf Siberian Pea Shrub | Sun |
| Fernleaf Tall Hedge | Sun |
| Fine Line Buckthorn | Sun |
| Gold Drop Potentilla | Sun |
| Gold Star Potentilla | Sun |
| Goldfinger Potentilla | Sun |
| Gro-Low Fragrant Sumac | Sun |
| Little Devil Ninebark | Sun |
| Siberian Pea Shrub | Sun |
| Tallhedge Buckthorn | Sun |
| Tiger Eyes Sumac | Sun |
| Utah Serviceberry | Sun |
| Woodwaxen | Sun |

## EVERGREEN SHRUBS

| Common Name | Exposure |
|---|---|
| Dwarf Oregon Grape | Sun/Shade |
| Juniper | Sun |
| Kinnikinnick* | Sun/Shade |
| Vancouver Gold | Part Sun/Shade |

*Juniper*

*Dwarf Ninebark*

*Kinnikinnick*

*Blanket Flower*

*Desert Four O'Clock*

*Monch Aster*

# LOW WATER

## PERENNIALS

| Common Name | Exposure |
|---|---|
| Adagio Maiden Grass | Sun/Part Sun |
| Alpine Aster | Sun/Part Sun |
| Autumn Fire Stonecrop | Sun |
| Blanket Flower | Sun |
| Coneflowers | Sun |
| Creeping Oregon Grape | Sun/Shade |
| Cupids Dart | Sun |
| Dallas Blues Switch Grass | Sun |
| Desert Four O'Clock* | Sun |
| Desert Purple Sage* | Sun |
| Flame Grass | Sun |
| Germander | Sun |
| Goldstrum Black Eyed Susan | Sun |
| Gracillimus Maiden Grass | Sun |
| Hidcote Blue Lavender | Sun |
| Hummingbird Trumpet | Sun |
| Karl Foerster Grass | Sun |
| Lambs Ear | Sun |
| Little Dot Maiden Grass | Sun |
| Maestro Stonecrop | Sun |
| Matrona Stonecrop | Sun |
| May Knight Salvia | Sun |
| Missouri Evening Primrose | Sun |
| Monch Aster | Sun |

# LOW WATER

## PERENNIALS

| Common Name | Exposure |
|---|---|
| Moonbeam Tickseed | Sun |
| Morning Light Maiden Grass | Sun |
| New Dimension Salvia | Sun |
| Ozark Sundrops Evening Primrose | Sun |
| Pastor Pride English Lavender | Sun |
| Plumbago | Sun |
| Plumosa Salvia | Sun |
| Prairie Aster* | Sun |
| Prairie Blues Bluestem | Sun |
| Prairie Winecup | Sun |
| Purple Dome Aster | Sun |
| Purple Emperor Stonecrop | Sun |
| Red Hot Poker | Sun |
| Red Jupiters Beard/Keys of Heaven | Sun |
| Red Switch Grass | Sun |
| Rock Rose or Sun Rose | Sun |
| Sensation Sky Blue Salvia | Sun |
| Silver Brocade Sage | Sun |
| Standing Ovation Bluestem | Sun |
| Sundancer Daisy | Sun |
| Whirling Butterflies | Sun |
| Wood Pink Aster | Sun |

*New Dimension Salvia*

*Red Hot Poker*

*Sundancer Daisy*

*Sycamore Maple*

*Donald Wyman Canadian Lilac*

*Carol Mackie Daphne*

# MODERATE WATER

## DECIDUOUS TREES

| Common Name | Exposure |
|---|---|
| Dawn Redwood | Sun/Part Sun |
| Ivory Silk Japanese Tree Lilac | Sun |
| Paper Bark Maple | Sun/Part Sun |
| Redbud | Sun |
| Sycamore Maple | Sun |
| Tartarian Maple | Sun |

## DECIDUOUS SHRUBS

| Common Name | Exposure |
|---|---|
| Bloomerang Lilac | Sun/Part Sun |
| Burkwood Viburnum | Sun/Shade |
| Compact European Cranberry Bush | Sun/Part Sun |
| Donald Wyman Canadian Lilac | Sun |
| Dwarf European Cranberry Bush | Sun/Part Sun |
| Forsythia | Sun |
| Green Mound Alpine Currant | Sun/Part Sun |
| Midnight Wine Weigela | Sun/Part Sun |
| Miss Canada Lilac | Sun |
| Spirea | Sun |

## EVERGREEN SHRUBS

| Common Name | Exposure |
|---|---|
| Carol Mackie Daphne | Part Sun |

# MODERATE WATER

## EVERGREEN SHRUBS

| Common Name | Exposure |
|---|---|
| Degroots Spire Arborvitae | Sun/Part Sun |
| Emerald Green Aborvitae | Sun/Part Sun |
| Hornbrook Dwarf Austrian Pine | Sun/Part Sun |
| Mountain Lover* | Sun/Shade |
| Slowmound Mugo Pine | Sun/Part Sun |
| Tannenbaum Mugo Pine | Sun/Part Sun |

## PERENNIALS

| Common Name | Exposure |
|---|---|
| Alpine Breeze Blue Bellflower | Sun |
| Avens | Sun |
| Balloon Flower | Sun |
| Bevans Cranesbill | Sun |
| Bigroot Geranium | Sun |
| Bloody Cranesbill | Sun |
| Coral Bells | Sun |
| Creeping St. Johns Wort | Sun |
| Kolbold Gayfeather | Sun |
| Little Gem Candytuft | Sun/Part Sun |
| Patricia Cranesbill | Sun |
| Rose Mallow | Sun |
| Splendens Rock Soapwort | Sun |
| Sunny Border Blue Speedwell | Sun |
| Tree Peony | Sun |

*Slowmound Mugo Pine*

*Balloon Flower*

*Coral Bells*

# RESOURCES

1. Center for Water-Efficient Landscaping (CWEL). *cwel.usu.edu*
2. Water Wise Utah. *waterwiseutah.org*
3. Division of Water Conservation Program. *conservewater.utah.gov*
4. Slow the Flow. *slowtheflow.org*
5. Master Gardeners—USU Extension Office. *Provo, UT*
6. Central Utah Gardens. *Orem, UT*

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