

**CITY OF KETCHUM
RESOLUTION NO. 2018-06**

**RESOLUTION OF THE CITY COUNCIL FOR THE CITY OF KETCHUM, IDAHO, APPROVING WATER
CONSERVATION GUIDELINES AS BEST PRACTICES FOR THE WOOD RIVER VALLEY AND
KETCHUM COMMUNITY**

WHEREAS, the cities, communities, residents, businesses, non-profit organizations, and industry experts of the Wood River Valley agree that water conservation is critical to the sustainability of Wood River Valley communities;

WHEREAS, a working group of representatives from Blaine County, City of Bellevue, the City of Hailey, the City of Ketchum, the City of Sun Valley, Wood River Land Trust, local non-profits, and citizens from the community have collaborated resources and efforts to produce a list of best practices and guidelines, attached hereto as Exhibit A, for establishing and maintaining landscaping while conserving water resources;

WHEREAS, Exhibit A to this resolution incorporates the most current and up-to-date best practices for promoting water conservation techniques and efficiency standards for the unique and complicated Wood River Valley ecosystem;

WHEREAS, all residents, businesses, and industry professionals designing or maintaining outdoor landscaping in the Wood River Valley are advised to consult the best practices contained in Exhibit A to maximize water conservation and landscape productivity while minimizing detrimental impacts on the Wood River Valley's water resources;

WHEREAS, Exhibit A shall be utilized as a guiding document for residents, businesses, and industry professionals when planning, designing, and maintaining outdoor landscaping.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO, that the City of Ketchum approves and adopts the best practices and guidelines contained in Exhibit A and that Mayor Bradshaw is authorized to sign this resolution.

Adopted this 5 day of March, 2018.

City of Ketchum



Neil Bradshaw, Mayor

ATTEST:

A handwritten signature in cursive script, appearing to read "Robin Crotty", written over a horizontal line.

Robin Crotty, Interim City Clerk

EXHIBIT A

WATER CONSERVATION LANDSCAPING GUIDELINES

(see next page)

Water Conservation Landscaping *guidelines*

These standards of practices have been drafted by industry experts, local municipalities and nonprofit organizations to promote water saving techniques and efficiency standards. The Wood River Valley is a dry ecosystem averaging 10-18 inches of precipitation a year. Using proper design, watering efficiently, and implementing sustainable practices can reduce the strain on this valuable resource and save water users money.

Soil and Compost. Soils with 25% compost can hold four times more water than soils without composted matter. Compost is an excellent way to amend existing soils or build better soil. By adding compost you improve water infiltration and decrease runoff and erosion. Compost improves the water holding capacity of the soil and improves the microorganism life in the soil which allows plants to utilize necessary soil nutrients and minerals. Healthier plants are able to better withstand drought.

A minimum of 25% compost needs to be added to existing soils because the soil types in the Wood River Valley do not have adequate organic material for water holding capacity.

- All new turf areas require a soil depth of 6": ONE PART COMPOST TO 3 PARTS SOIL.
- All new shrub and flower beds require a soil depth of 12": ONE PART COMPOST TO 3 PARTS SOIL.
- During excavation, existing soil is to remain on site and temporarily fenced to protect from compaction.
- Protect and minimize disturbance of existing trees and vegetation when excavating.

Mulch. Organic mulch is composed of materials such as bark, wood chips, soil pep, and wood compost. Mulch works to keep plants cool, prevent soil crusting, minimizes evaporation and controls weed growth.

- All shrub beds, tree rings, exposed soil and beds should have 4-6" of mulch to minimize evaporation.
- Mulch in tree rings should go from the trunk to the outer drip line of the trees.

Vegetation. Choosing the right vegetation can significantly reduce water use. Native or Drought Tolerant species require 1" or less of water per week.

- All turf species should be native or drought tolerant
- 30% of trees and shrubs should be low-water use plants

Irrigation. Current irrigation system installations have no regulation for efficiency. Without using industry best practices, irrigation systems can waste 40-60% more water than they should. Following the best practices guideline, the user can rest assured that they will have a system that saves water and protects the water resources.

- All landscapes are limited to irrigating .5 acre or less unless there is an additional water right.
- Sprinkler system should have an approved backflow preventer if tied to a potable water source. Backflow should be installed so during winterization no air will be blown through backflow preventer.
- Sprinklers should be laid so that the area is getting hit with a minimum of two sprinklers. This provides for 100% coverage. Recommended overlap would be 5-10%.
- Limit of .60" per hour for sprinkler application rates. ½" bubblers are not recommended due to their high application rate and poor distribution uniformity (coverage).
- All sprinkler types should be pressure regulated to either 40 or 45 pounds of pressure at the sprinkler head to assure uniform sprinkler nozzle distribution rates. 15 psi is recommended for delivery to the far end of any drip zone for proper operation. Recommended spray height: 4" pop up for mowed grass and 12" pop up for natural areas.
- Sprinkler nozzles should have matched precipitation rate so the same amount of water covers each zone.
- Drip should be laid out in a grid pattern so water is uniform in distribution and it is staked to the ground a minimum of every 24" to assure the drip tube stays in contact with the soil.
- Drip pipe should be ½" pressure compensating and also have a check valve to prevent drain out.
- Pots, barrels, or hanging baskets are recommended to have a dedicated irrigation zone. Irrigated with ¼" pressure compensating drip tube no longer than 15' in length. ¼" drip tube shall not be more than .6 gallons per hour water pressure.
- Plant materials with similar water needs should be planted in the same irrigation zone.
- Sun areas and shade areas should each have a separate irrigation zone.
- Sprinkler controller should be able to adjust irrigation automatically via weather station or soil moisture sensor (Time Domain Transmission recommended). Irrigation and Smart Technologies should be installed to industry/manufacturers standards (including 2-wire systems).
- If property has more than 5 feet of elevation change - all sprinkler heads should incorporate check valves to prevent all of the water from draining out of the low heads.
- For larger sprinkler systems with a water supply that is larger than 1-1/2" a flow meter and master valve that is controlled from the sprinkler controller is recommended. Mainlines 3" and larger should use HDPE or Ductile Iron fittings. PVC mainline fittings are not recommended on 3" and larger mainlines.

Drought Tolerant Trees, Shrubs, and Grasses For The Wood River Valley

Watering levels are for plants that have been established for a minimum of one year. These watering levels are above and beyond any natural precipitation that may fall during the growing season. Low = 0.2-0.5 in/week, Medium = >0.5-1 in/week, High = >1 in/week.

S = sun, DS =

dappled shade, s = shade

Conifer Trees

| Common Name | Botanical Name | Water Needs | Aspect | Zone |
|--------------|------------------------------|-------------|--------|------|
| Arborvitae | <i>Thuja occidentalis</i> | Medium | S | 3 |
| Fir | <i>Abies spp</i> | Medium | S/DS | 3,4 |
| Fir, Douglas | <i>Pseudotsuga menziesii</i> | Medium | S/DS | 3 |
| Juniper | <i>Juniperus spp</i> | Low | S | 2 |
| Larch (all) | <i>Larix spp</i> | Medium | S | 2 |
| Pine | <i>Pinus spp</i> | Low | S | 2 |
| Spruce | <i>Picea spp</i> | Medium | S | 2 |

Deciduous Trees

| Common Name | Botanical Name | Water Needs | Aspect | Zone |
|----------------|----------------------------------|-------------|--------|--------|
| Apple | <i>Malas spp.</i> | low | S | VARIES |
| Apricot | <i>Prunus spp.</i> | low | S | 3 |
| Ash, Black | <i>Fraxinus nigra</i> | low | S | 2 |
| Ash, Green | <i>F pennsylvanica</i> | low | S | 3,4 |
| Ash, Mancana | <i>F mandschurica</i> | low | S | 3 |
| Ash, White | <i>Fraxinus americana</i> | medium | S | 3 |
| Aspen, Quaking | <i>Populus tremuloides</i> | medium | S | 1 |
| Buckeye | <i>Aesculus spp</i> | low | S/DS | 3 |
| Cherry | <i>Prunus spp.</i> | low | S | 3 |
| Chokecherry | <i>P virginiana</i> | low | S | 2 |
| Crabapple | <i>Malas spp.</i> | medium | S | VARIES |
| Elm | <i>Ulmus spp</i> | low-medium | S | 4 |
| Hackberry | <i>Celtis occidentalis</i> | low | S | 3 |
| Hawthorn | <i>Cratageagus spp</i> | low | S | 4 |
| Honeylocust | <i>Gleditsia triacanthos spp</i> | low | S | 4 |
| Horsechestnut | <i>Aesculus hippocastanum</i> | low | S | 3 |
| Lilac | <i>Syringa spp</i> | low | S | 3,4 |
| Linden | <i>Tilia spp</i> | medium | S/DS | 2,3 |
| Maakia, Amur | <i>Mackia amurensis</i> | low | S | 4 |
| Maple | <i>Acer spp</i> | low-medium | varies | 2,3,4 |
| Mountainash | <i>Sorbus spp</i> | medium | S | 2 |
| Mtn Mahogany | <i>Cercocarpus spp</i> | low-med | S | 2 |
| Oak, Bur | <i>Quercus macrocarpa</i> | low | S | 2 |
| Oak, Chestnut | <i>Quercus prinus</i> | low | S | 4 |

| | | | | |
|------------------|---------------------------|-----|---|---|
| Oak, Shingle | <i>Quercus imbricaria</i> | low | S | 4 |
| Oak, Swamp White | <i>Quercus bicolor</i> | low | S | 3 |
| Oak, White | <i>Quercus alba</i> | low | S | 3 |
| Pear | <i>Pyrus spp</i> | low | S | 3 |
| Plums | <i>Prunus spp.</i> | low | S | 3 |

Evergreen Shrubs and Small Trees

| Common Name | Botanical Name | Water Needs | Aspect | Zone |
|-------------|--------------------------|-------------|--------|--------|
| Juniper | <i>Juniperus spp</i> | low | varies | varies |
| Larch | <i>Larix spp.</i> | low | S | 3 |
| Pine | <i>Pinus spp</i> | medium | S | 2 |
| Rabbitbrush | <i>Chrysothamnus spp</i> | low | S | 2 |
| Soapweed | <i>Yucca glauca</i> | low | S | 4 |
| Spruce | <i>Picea spp</i> | medium | S | 2 |

Deciduous Shrubs and Small Trees

| Common Name | Botanical Name | Water Needs | Aspect | Zone |
|---------------------|-----------------------------------|-------------|--------|--------|
| Alder | <i>Alnus tenuifolia</i> | medium | S/DS | 1,2 |
| Almond, Flowering | <i>Prunus glandulosa</i> | medium | S | 3 |
| Barberry | <i>Berberis spp</i> | medium | S/DS | 3 |
| Buckthorn | <i>Rhamnus spp</i> | medium | S | 3 |
| Buckthorn, Sea | <i>hyppophae rhamnoides</i> | low | S | 4 |
| Buffaloberry | <i>Shepherdia spp</i> | low | S | 3 |
| Burningbush | <i>Euonymus alata</i> | medium | S | 4 |
| Chokeberry | <i>Aronia spp</i> | medium | S/DS | 4 |
| Chokecherry | <i>Prunus spp.</i> | low | S | 3 |
| Cliffrose, Mexican | <i>Purshia mexicana</i> | low | S/DS | 4 |
| Coralberry | <i>Symphoricarpos spp</i> | low | S | 2 |
| Cotoneaster | <i>Cotoneaster spp</i> | low | S/DS | 3 |
| Cranberry, American | <i>V trilobum</i> | medium | S/DS | 3 |
| Cranberry, European | <i>V opulus</i> | medium | S/DS | 3 |
| Currant | <i>Ribes spp</i> | low | DS/s | 4 |
| Deutzia | <i>Deutzia spp</i> | medium | S | 3 |
| Dogwood | <i>Cornus spp</i> | medium | S/DS | 1,2 |
| Elderberry | <i>Sambucus spp</i> | low | S | 2 |
| Fernbush | <i>Chamaebatiaria millefolium</i> | low | S | 4,5 |
| Filbert | <i>Corylus spp</i> | medium | S/DS | 3 |
| Forsythia | <i>Forsythia spp</i> | medium | S | 4 |
| Gooseberry | <i>Ribes spp</i> | low | S | 2 |
| Honeysuckle | <i>Lonicera spp</i> | low | S | 4 |
| Hydrangea | <i>Hyrangea spp</i> | medium | DS/s | 3 |
| Kinnikinnick | <i>Arctostaphylos uva-ursi</i> | low | S/DS | 2 |
| Lilac | <i>Sryinga spp</i> | low | S | 3 |
| Maple | <i>Acer spp</i> | medium | S/DS | varies |

| | | | | |
|---------------------|---------------------|------------|------|--------|
| Mockorange | Philadelphus spp | low | S | 4 |
| Mormon Tea | Ephedra viridis | low | S | 3 |
| Mtn Mahogany | Cercocarpus spp | low | S | 3 |
| Ninebark | Physocarpus spp | low | S | 3 |
| Peashrub | Caragana spp | low | S | 2 |
| Plum | Prunus spp. | low | S | 3 |
| Potentilla | Potentilla spp | low | S | varies |
| Quince | Chaenomeles spp | medium | S/DS | 4 |
| Raspberry | Rubus spp. | low | S | varies |
| Rose | Rosa spp | low-medium | S | varies |
| Sagebrush | Artemisia spp | low | S | 2 |
| Saltbush, Four Wing | Atriplex canescens | low | S | 4 |
| Sandcherry | Prunus besseyi | low | S | 4 |
| Serviceberry | Amelanchier spp | low | S/DS | 4 |
| Snowberry | Symphoricarpos spp | low | S | 3 |
| Spiraea | Spiraea spp | medium | S | 3 |
| Spiraea, Ashleaf | Sorbaria sorbifolia | low | S | 4 |
| Spiraea, Rock | Holodiscus dumosus | low | S | 4 |
| Sumac | Rhus spp | low | S | 4,3 |
| Summersweet | Clethra alnifolia | medium | DS/s | 2,3 |
| Thimbleberry | Rubus deliciosus | low | S | 4 |
| Viburnum | Viburnum spp | medium | DS/s | 4 |
| Waxflower | Jamesia americana | low | S | 4 |
| Winter Fat | Cerotoides lanata | low | S | 4 |

Ornamental Grasses

| Common Name | Botanical Name | Water Needs | height | zone |
|----------------------------|--------------------------------|-------------|--------|--------|
| crested wheat grass | Agropyron cristatum | low | 12-18" | 3 |
| sideoats grama | Bouteloua certipendula | low | 1-2' | 3 |
| blue grama | B gracilis | low | 1-2' | 3 |
| blue fescue | Festuca ovina gluca | low | 4-10" | 4 to 9 |
| blue acenea grass | helictotrichon sempervirens | low | 4' | 4 to 9 |
| ribbon grass | Phalaris arundinacea 'Picata' | low | 1-3' | 4 to 8 |
| karl foerster feather reed | C arundinacea 'Karl Foerster' | medium | 2-4' | 4 |
| norhern sea oats | Chasmanthim latifolium | medium | 3-4' | 4 |
| hardy plume grass | Erianthus (Saccharum) ravennae | medium | 9-12' | 4 to 9 |
| tall fescue | Festuca arundinacea | medium | 1-2' | 2 |

Grasses for Xeriscape

| Common Name | Botanical Name | Water Needs | height | zone |
|---------------------|------------------------|-------------|--------|--------|
| western wheat grass | Agropyron smithii | low | 2-4' | 3 to 9 |
| sideoats grama | Bouteloua curtipendula | low | 1-2' | 3 |
| blue grama grass | B gracilis | low | 1-2' | 3 |
| hairy grama grass | B hirsuta | low | 6-24" | 3 to 9 |

| | | | | |
|--------------------|--------------------------|--------|------|--------|
| kalm's chess | Bromus kalmii | low | 2-4' | 3 to 8 |
| bluejoint | Calamagrostis canadensis | low | 2-5' | 3 |
| prairie sand reed | Calamovilfa longifolia | low | 2-6' | 3 to 6 |
| Canad a wild rye | Elymus canadensis | low | 2-5' | 3 to 8 |
| virginia wild rye | E virginicus | low | 2-4' | 3 to 9 |
| sheep fescue | Festuca ovina | low | 1-2' | 3 to 9 |
| squirreltail grass | Hordeum jubatum | low | 1-2' | 4 to 9 |
| June grass | Koeleria cristata | low | 1-2' | 3 to 9 |
| reed canary grass | Phalaris arundinacea | low | 2-5' | 4 to 8 |
| glaucous bluegrass | Poa glaucifolia | low | 1-2' | 3 to 9 |
| inland bluegrass | P interior | low | 1-2' | 3 to 9 |
| needle and thread | Stipa comata | low | 1-3' | 4 to 9 |
| porcupine grass | S spartea | low | 2-3' | 3 to 6 |
| purple top | Tridens flavus | low | 3-5' | 4 |
| bottlebrush grass | Hystrix patula | medium | 2-4' | 4 to 9 |