



# ***Water Conservation Plan***

## **Desert Utilities, Inc.**

4060 N. Blagg Rd., Ste. 110

Pahrump, NV 89060

Office: (775) 751-1368

Fax: (775) 751-1965



**August 2014**

## **Table of Contents**

Purpose.....	1
Conservation Measures.....	1
Landscapes.....	1
Turf Restrictions.....	1
Water Application.....	1
Watering Restrictions.....	2
Additional Watering Restrictions.....	2
Low Flow Fixtures.....	2
Nye County Water Conservation Standards (17.04.740).....	3
Enforcement.....	5
Feasibility of Charging Variable Rates to Encourage Conservation.....	6
Water Management.....	6
Leak Identification Procedures.....	6
High Pressure Management.....	6
Reuse.....	7
Contingency Plan for Drought Conditions.....	7
Estimate of Amount of Water Saved by Plan.....	8
Public Education.....	9
Increase Public Awareness of Need to Conserve Water.....	9
Encourage Reduction in the Size of Lawn and Use of Plants that are Adapted to Arid and Semi-Arid Climates.....	9
Measures to Evaluate Effectiveness of Plan.....	9
Schedule for Conservation Plan.....	9
Procedure for Interested Person to Submit Recommendation or Views.....	9
Conclusion.....	10
Appendix A. Approved Plant List.....	A-1

## Purpose

It is very important that Desert Utilities, Inc. (DUI), as a water provider, implement water conservation measures to help preserve our most important natural resource, our underground water supply. This Water Conservation Plan (Plan) will provide customers within DUI's service territory with guidelines for protecting our underground water resources.

## Conservation Measures

DUI's water conservation requirements are established to help promote the preservation of the underground aquifer and are summarized below.

The Landscapes and Turf Restrictions sections below shall be applicable to landscape and turf installations that occur after April 2009. As used herein, the term "installations" shall include new installations and/or replacements of any landscaping as well as any repair to more than twenty percent (20%) of the net landscaping area in the aggregate of any lot or development.

### Landscapes

- All plants and landscapes must be:
  - Drought tolerant
  - Desert friendly
  - Water conscious
  - On DUI's *Approved Plant List* (Appendix A), or otherwise approved by DUI pursuant thereto.

*Estimated water savings: 60 gal/person/day*

### Turf Restrictions

- The maximum turf allowed for any single-family residence is 5,000 square feet, but in no case shall turf exceed:
  - 50% of landscape in the landscaped rear or side yard areas.
  - 25% of landscape in the landscaped front yard area.
  - 10% of the gross lot area.
- Turf shall be at least three (3) feet from all buildings and walls.
- Planting cool season grass, such as Rye and Fescue, from seed is prohibited from May through August. The laying of sod is permitted year-round.

*Estimated water savings: 40 gal/person/day*

### Water Application

- Automatic irrigation systems are required for all common area, residential, and commercial planting areas.
- All common area, residential units, and commercial areas shall comply with watering schedules issued by DUI, which sets forth the days, time of day, and duration of time allowed for outdoor watering.
- Overhead spray shall be minimized and restricted to turf and flower beds.
  - All other areas of landscape must use drip irrigation.
- If spray heads are required next to roads or paths, they shall be low-angle (10%) nozzles.

- Large-radius spray heads are prohibited along roads and paths.
- All spray heads are prohibited from spraying water directly onto any roads, paths, or other non-turf surface.
- All spray heads are prohibited from causing runoff onto any roads, paths, or other non-turf surface.

*Estimated water savings: 15 gal/person/day*

### **Watering Restrictions**

- Customers with odd number addresses will water only during odd days of the month.
- Customers with even number addresses will water only during even days of the month.
- No outdoor watering between 11:00 am and 6:00 pm.
- No outdoor watering on the 31<sup>st</sup> of the month.
- Excess watering that results in water runoff into the streets or drainage swales will not be allowed.

*Estimated water savings: 20 gal/person/day*

### **Additional Watering Restrictions**

- From May 1<sup>st</sup> until September 30<sup>th</sup>, sprinkler watering is prohibited from 11 a.m. to 7 p.m.
- Watering with a handheld hose and supervised testing of irrigation systems are allowed anytime. Watering new or re-seeded landscapes daily, for up to 30 days, is allowed once per calendar year.
- Drip irrigation is permitted any day of the week provided it does not exceed the number of assigned watering days for that season.
- Assigned watering groups are mandatory for all customers. Use of sprinklers on days other than those assigned is considered water waste and may result in a water waste fee.

For lawns, use the “cycle and soak” method for sprinkler watering. If using pop-up sprinklers, water in three four-minute cycles, with an hour between each cycle, on assigned watering days. Water for 12 minutes each watering cycle if using rotating sprinkler heads.

Drip irrigation is usually required less frequently than sprinkler irrigation. Run times vary based on flow rates of emitters.

Owners of common areas over two (2) acres may apply for a waiver of certain restrictions.

*Estimated water savings: 15 gal/person/day*

### **Low Flow Fixtures**

- All fixtures must be Low Flow Fixtures as required by Nye County Ordinance at the time of installation.

*Estimated water savings: 10 gal/person/day*

## **Nye County Water Conservation Standards (17.04.740)**

The Nye County Ordinance currently has Water Conservation Standards (17.04.740 F.) that help promote water conservation. This ordinance is stated below.

### *F. Water Conservation Standards:*

#### *1. Purpose: The purpose of this section is to:*

- a. Set forth development standards that reduce water consumption in the portion of the Pahrump ground water basin encompassed by the Pahrump regional planning district.*
- b. Establish a desert compatible community image through the use of low water, climate appropriate landscaping materials.*

*2. Scope: These development standards apply to all new residential and commercial construction, all new planned unit developments, and any expansion of existing facilities by more than twenty five percent (25%). Public parks, school athletic fields, farming and agricultural uses using agricultural water rights are exempt from these restrictions.*

#### *3. Prohibited Water Uses:*

*a. Artificial lakes, decorative water features, or ponds using more than five hundred (500) gallons of water or of a size greater than two hundred fifty (250) square feet in surface area except:*

*(1) Those using one hundred percent (100%) reclaimed water.*

*(2) Facilities utilizing treated effluent under this subsection F may temporarily utilize potable water to augment effluent, until such time as the amount of generated effluent is sufficient to meet the design demands.*

*(A) "Temporary use of potable water" is defined as; the time from construction to when the sewage treatment facility generating the treated effluent is operating at fifty percent (50%) of design capacity.*

*(3) A body of water which stores runoff water as a flood control measure, or for purposes relating to disposal of sewage effluent in infiltration basins.*

*(4) Bodies of water located on a golf course or a cemetery which are used for the purpose of storing irrigation water for the same and which have a combined aggregate surface area less than eight percent (8%) of the total golf course or cemetery area.*

*b. Bodies of water used for recreation purposes that are not one hundred percent (100%) reclaimed water are to be authorized by conditional use permit.*

*(1) Residential swimming pools are required to use a pool cover to mitigate evaporation when not in use for a period of time greater than twelve (12) hours.*

*4. Landscape Design Requirements:*

*a. No development shall impose restrictions which require the use of turf in landscaping or which prevent the use of Xeriscape as an alternative to turf.*

*b. Landscape plans shall incorporate water conserving design including the use of:*

*(1) Appropriate soil, soil amendments and top mulch to absorb and retain water and encourage the formation of deep root systems;*

*(2) Drip irrigation (except for grass turf areas). Plants with similar water requirements should be grouped on the same irrigation line.*

*c. Grading, whenever possible, should be designed to minimize irrigation water runoff onto streets and to maximize the use of storm water for on site irrigation. The maximum slope of a grass turf area shall not exceed thirty three percent (33%).*

*d. Golf courses that are not completely irrigated with reclaimed water shall be designed to have less than twenty five percent (25%) grass turf overall.*

*5. Residential Landscaping Plants, Shrubs And Trees:*

*a. Per this section, the use of xeric and native plants is required. It is recommended that the low water use, drought tolerant, species of the "Pahrump Demonstration Garden Plant List" as published and regularly updated by the Pahrump cooperative extension office of the University of Nevada, Reno, be used.*

*b. Growing of salt cedar (tamarisk) bushes or trees is specifically prohibited.*

*c. Vegetable gardens are specifically exempt from these restrictions.*

*6. Residential Grass Turf Restrictions:*

*a. The area of turf within a residential subdivision shall not exceed ten percent (10%) of the total landscaped area of the common open space within the development. The addition of usable grass turf areas may increase the total landscaped area of the common open space within the development to no more than thirty percent (30%). Individual residential lots within a subdivision shall conform to the requirements outlined below.*

*(1) "Usable grass turf" shall be defined as an area that is appropriately sized and situated and is available for recreational activities.*

*b. The use of grass turf in individual residential use lot landscaping is limited to ten percent (10%) of the gross lot area.*

*c. When the residential lot contains an aerobic type septic system requiring grass turf irrigation to make use of the output reclaimed water, the ten percent (10%) limit may be exceeded to meet the turf area recommended by the engineer certifying the septic installation.*

*d. The maximum allowable amount of grass turf on parcels 1.25 acres or larger is five thousand five hundred (5,500) square feet.*

*e. Livestock pastures are exempt from grass turf restrictions.*

*f. Grass turf in multi-family housing development is regulated in this section. (Ord. 376, 2009; Ord. 308, 2005; Ord. 285, 2004)*

## **Enforcement**

- To the extent not preempted or reserved by any power vested in any government or governmental agency, DUI, shall have the right to enforce all conservation and watering requirements for developments within its service territory.
- Commencing on the date of this document, DUI shall require developers to place DUI's water conservation measures, or measures that are equally or more restrictive than DUI's water conservation measures, in their respective CC&R's and Design Guidelines.
- Nye County, by statute NRS 450.141(6), can adopt ordinances to enforce the Conservation Plan and establish fines for the violation of the ordinances. Nye County can also hire employees to enforce the provisions of the plan.
- The Nye County Ordinance has the following enforcement provisions and penalties currently in effect.

### 17.04.070: ENFORCEMENT AND PENALTIES:

*A. Any person, firm or corporation who, after fourteen (14) days of receiving written notification of violation of any of the provision(s) of this chapter, knowingly continues to violate said provision(s) of this chapter is guilty of a misdemeanor.*

*B. Each such person is guilty of a separate offense for each and every day or portion thereof during which violation of any of the provisions of this chapter is committed, continued or permitted.*

*C. Upon conviction of any violation of this chapter, such person(s) shall be punished by a fine of not more than one thousand dollars (\$1,000.00) or by imprisonment for not more than six (6) months in the Nye County jail, or by both such fine and imprisonment.*

*D. Any building or structure hereafter set up, erected, built, moved or maintained or any use of property hereafter contrary to the provisions of this chapter shall be, and the same is declared to be, unlawful and a public nuisance, and the county may immediately commence action or actions, proceeding or proceedings, for the abatement thereof in a manner provided by law and shall take such other steps and shall apply to such court or*

*courts as may have jurisdiction to grant such relief as will abate or remove such building, structure or use and restrain and enjoin any person from setting up, erecting, building, moving and maintaining any such building or structure, or using any property contrary to the provisions of this chapter. (Ord. 285, 2004)*

## **Feasibility of Charging Variable Rates to Encourage Conservation**

DUI utilizes a tiered rate structure that went into effect in 2008 for its commodity charge whereby customers are charged a higher rate per thousand gallons used at certain thresholds. If the current rates are not as effective as desired, additional or more aggressive variable rates may be explored to encourage conservation. For DUI to charge a variable rate, it must apply to the Public Utilities Commission of Nevada (PUCN). Hearings must be conducted to allow public comment. The PUCN will research DUI's financial records to verify that a change in the rate will be acceptable. At the time that DUI applies for a rate case, DUI may consider implementing a variable rate. If variable rates are approved, higher rates may be set for water usage that reflects use in excess of what is normal for drought tolerant landscaping. To the extent possible, this variable rate will be congruent with existing or proposed variable rates of the other water utilities in the Pahrump valley.

## **Water Management**

### **Leak Identification Procedures**

DUI regularly inspects infrastructure for leaks and inaccurate meters. DUI employees drive the service territory inspecting the service area for any leaks or abnormalities. DUI also asks all of its customers to immediately report any water leaks.

When DUI reads meters, DUI looks for abnormalities in water use. If there seems to be an abnormality, then DUI compares water use for that month to previous years to verify that there is not a large change in water use. If there is a large change in water use, then DUI will re-read the meter to verify the initial meter reading was accurate. DUI also will inspect the property from the street to see if there has been a change in landscaping or evidence of a new pool or other improvements that would cause a change in water use. If it is apparent that the meter has failed, DUI will replace the meter. If the meter has not failed, DUI may contact the customer to discuss the increased use to determine if a leak is present.

### **High Pressure Management**

Water system design criteria require that a pressure of 20 to 100 psi be maintained at the customer's connection. Excessive pressure may increase the possibility of main breaks or accelerate the development of leaks on DUI and customer facilities. Excessive pressure results in more water delivered through the tap since flow rate is proportional to pressure – which can result in forms of water waste such as sprinkler overspray, faucet splashing and higher leakage flow rates.

DUI's water delivery system contains automated mechanisms to ensure system pressures are maintained. Should excessive pressures be identified – whether by periodic inspection of

system pressure gauges or after investigation of customer inquiries, DUI will immediately takes the necessary measures to ensure that proper system pressures are restored.

## **Reuse**

DUI currently uses rapid infiltration basins (RIBs) to replenish the aquifer with effluent water.

## **Contingency Plan for Drought Conditions**

As recommended within the State of Nevada's Drought Response Plan and required per NRS § 704.6622, water utility companies must include a contingency plan for drought conditions that ensures a supply of potable water to their customers. DUI's contingency plan is as follows:

### Drought

A condition in which the combination of many complex factors acting and interacting with the environment results in water supplies not being replenished normally. For purposes of this Plan, a "drought" occurs when existing water supplies cannot meet established demands for a period of time.

### No Drought

A condition where no DUI drought declaration is in effect. Turf and landscape restrictions apply as outlined on page 1 of the Water Conservation Plan.

### Drought Watch

A first-level drought declaration of DUI is based upon current or projected reductions in the community's renewable water supply.

During drought watch conditions:

- (a) Single-family and multi-family developments are prohibited from installing new turf in common areas of residential neighborhoods. This restriction shall not apply to turf area to be installed in public parks or privately owned and maintained parks, including required usable open space in residential developments, provided that such turf area has no dimension of less than ten feet.
- (b) The installation of new turf in non-residential developments is prohibited, unless specifically permitted by the approval of a land use application or permit for construction. Any new turf permitted shall be limited to no more than fifty percent (50%) of the turf that would be permitted under non-drought conditions. This restriction shall not apply to schools or to public or private parks.

### Drought Alert

A second-level drought declaration of DUI is based upon current or projected reductions in the community's renewable water supply. During drought alert conditions:

- (a) No new turf may be installed in residential front yards. In single-family residential development, the installation of new turf shall not exceed fifty percent (50%) of the gross area of the side and rear yard (up to a maximum of five thousand square feet). No turf area may be installed in the side or rear yard if any dimension thereof is less than ten feet.
- (b) The restrictions applicable to nonresidential development during drought watch conditions shall apply during drought alert conditions as well.

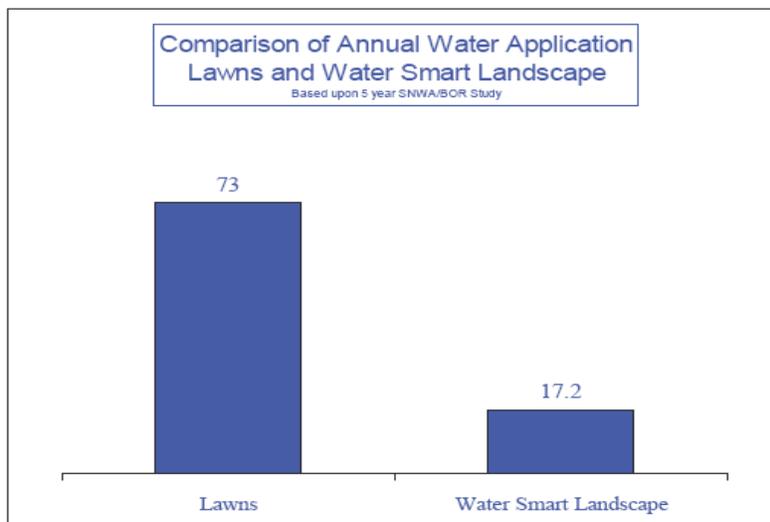
### Drought Emergency

A third-level drought declaration of DUI is based upon current or projected reductions in the community's renewable water supply.

During drought emergency conditions:

- (a) No new turf may be installed without a waiver.
- (b) DUI will prohibit watering of turf until the declaration is lifted.
- (c) The restrictions applicable during drought alert conditions shall also apply during drought alert conditions.

## **Estimate of Amount of Water Saved by Plan**



- Based upon the information obtained from SNWA above, DUI estimates significant water conservation by following this Water Conservation Plan.

## **Public Education**

To promote public awareness, DUI distributes its Water Conservation Requirements to all new customers and developers. Developers are also required in their annexation agreement to implement CC&R's and design guidelines that adopt DUI's water conservation measures. Currently the Southern Nevada Water Authority (SNWA) has a vast amount of information on water conservation and DUI recommends that its customers visit [www.snwa.com](http://www.snwa.com).

### **Increase Public Awareness of Need to Conserve Water**

- DUI is committed to increasing public awareness of the need to conserve water. DUI has participated in Nye County's ad hoc water committee meetings to address water conservation needs in the Pahrump Valley.
- The Water Conservation Plan will be available in DUI's office upon receiving final approval from the various agencies involved.

### **Encourage Reduction in the Size of Lawn and Use of Plants that are Adapted to Arid and Semi-Arid Climates**

- DUI has adopted water conservation measures that not only encourages reduction in lawn size but also restricts water use in the developments and by its customers in its service territory.

## **Measures to Evaluate Effectiveness of Plan**

Customers are provided with their actual monthly usage on their billing statement. DUI monitors customer water usage as an ongoing effort. The results will be analyzed and comparison figures generated for residences subject to water saving measures versus residences with no such measures.

## **Schedule for Conservation Plan**

If approved by the Nevada Division of Water Resources (NDWR), this Plan will be implemented within 90 days of approval. DUI shall review its conservation measures and Water Conservation Plan annually to evaluate if additional conservation measures are needed. The Plan shall be updated every five (5) years to comply with NRS 540.

## **Procedure for Interested Person to Submit Recommendation or Views**

Nye County Planning and the Nye County Board of County Commissioners will be provided with the Plan and encouraged to submit recommendations to DUI. Developers who are annexed into DUI's service territory will be provided with DUI's Plan and also encouraged to submit recommendations to DUI.

DUI's Plan will be available for inspection at DUI's office in Pahrump, Nevada during office hours once final approval is received by the jurisdictional regulatory agencies.

## **Conclusion**

To reduce water consumption, the conservation measures set forth in this Plan should be followed. By following the Plan, our underground water resources can be more efficiently used and the underground aquifer preserved for generations to come.

## Appendix A. Approved Plant List

### Recommended for the Pahrump Area by the Nevada Division of Forestry

<u>Common Name</u>	<u>Botanical Name</u>
<b>SHRUBS</b>	
D Apache Plume	<i>Fallugia paradoxa</i>
D Caragana "Pygmy"	<i>Caragana arborescens</i>
D Caragana	<i>Caragana arborescens</i>
Euonymus	<i>Euonymus japonica</i>
D Feathery Cassia	<i>Cassia artemusoides</i>
Globe Mallow	<i>Sphaeralcea ambogia</i>
Honeysuckle	<i>Lonicera tatarica</i>
D Indian Rice Grass	<i>Achnatherum hymenoides</i>
Lilac	<i>Syringa vulgaris</i>
D Myrtle	<i>Myrtus communis 'compacta'</i>
Nanking Cherry	<i>Prunus tomentosa</i>
D Sand Cherry	<i>Prunus besseyi</i>
D Woods Rose	<i>Rosa woodsii</i>
<b>DESERT TREES</b>	
*D Blue Palo Verde	<i>Cercidium floridum</i>
D Cat Claw Acacia	<i>Acacia greggii</i>
D Chaste Tree	<i>Vitex agnus-castus</i>
*D Chilean Mesquite	<i>Prosopis speciosa</i>
Desert/Wash Willow	<i>Chilopsis linearis</i>
D Honey Mesquite	<i>Prosopis juliflora</i>
*D Mexican Palo Verde	<i>Parkinsonia aculeate</i>
D Screw Bean Mesquite	<i>Prosopis pubescens</i>
D Sweet Acacia	<i>Acacia smallii</i>
Yellow Bird of Paradise	<i>Caesalpinia gilliesii</i>
<b>OTHER TREES</b>	
Aleppo Pine	<i>Pinus halepensis</i>
Arizona Ash	<i>Fraxinus velutina</i>
D Arizona Cypress	<i>Cupressus arizonica</i>
D Black Locust	<i>Robina pseudoacaia</i>
D True Chinese Elm	<i>Ulmus parvifolia</i>
* Chir Pine	<i>Pinus roxburghii</i>
Desert Olive	<i>Forestiera neomexicana</i>
Eldarica Pine (Mondell)	<i>Pinus eldarica</i>
* Eucalyptus	<i>Eucalyptus microtheca</i>
Honey Locust	<i>Gleditsia triacanthos</i>
Italian Cypress	<i>Cupressus sempervirens</i>
Mimosa	<i>Albizia julibrissin</i>
D Russian Olive	<i>Eleagnus angustifolia</i>
She-Oak	<i>Casuarina equisetifolia</i>
Siberian Crabapple	<i>Malus bacatta</i>

\* **Not Recommended for all areas of Pahrump**  
**D Drought Tolerant**

## Appendix A. Approved Plant List (Cont.)

### Other Plant Species Recommended for Southern Nevada

<u>Common Name</u>	<u>Botanical Name</u>
Acacia	<i>Acacia Redolens</i>
Acacia, Mugla	<i>Acacia aneura</i>
Acacia, Shoestring	<i>Acacia stenophylla</i>
Acacia, Twisted	<i>Acacia schaffneri</i>
Acacia, White Thorn	<i>Acacia constricta</i>
Ash, Arizona	<i>Fraxinus velutina</i>
Ash, Littleleaf	<i>Fraxinus greggii</i>
Bottle Tree	<i>Brachychiton populneus</i>
Chitalpa	<i>X Chitalpa tashkentensis</i>
Coolibah Tree	<i>Eucalyptus microtheca</i>
Deer Grass	<i>Muhlenbergia</i> Var.
Dwarf Coyote Bush	<i>Baccharis Centennial</i>
Elderberry, Mexican	<i>Sambucus nigra ssp. cerulea</i>
Elm, Lacebark	<i>Ulmus parvifolia</i>
Feathery Cassia	<i>Cassia wislezini</i>
Firethorn	<i>Pyracantha coccinea</i>
Goldenrain Tree	<i>Koelreuteria paniculata</i>
Heavenly Bamboo	<i>Nandina Domestica</i>
Kidneywood	<i>Eysenhardtia orthocarpa</i>
Laurel, Bay	<i>Laura nobilis</i>
Lemon Bottlebrush	<i>Callistemon citrinus</i>
Locust, 'Purple Robe'	<i>Robinia x ambigua 'Purple Robe'</i>
Japanese Pagoda Tree	<i>Sophora japonica</i>
Oak, Chinquapin	<i>Quercus muehlenbergia</i>
Oak, Cork	<i>Quercus suber</i>
Oak, Escarpment	<i>Quercus fusiformis</i>
Oak, Holly	<i>Quercus ilex</i>
Oak, Texas Red	<i>Quercus buckleyi (texana)</i>
Palo Verde, Foothill	<i>Parkinsonia microphylla</i>
Pine, Mondel (Afghan Pine)	<i>Pinus eldarica</i>
Pine, Stone	<i>Pinus pinea</i>
Pistache, Chinese	<i>Pistacia chinensis</i>
Red Bird of Paradise	<i>Caesalpinia pulcherrima</i>
Redbud, Eastern	<i>Cercis canadensis</i>
Redbud, Western	<i>Cercis occidentalis</i>
Red Yucca	<i>Hesperaloe Parvifolia</i>
Strawberry Tree	<i>Arbutus unedo</i>
Sumac, African	<i>Rhus lancea</i>
Texas Ebony	<i>Ebanopsis ebano (Pithecellobium)</i>
Texas Mountain Laurel	<i>Sophora secundiflora</i>
Texas Olive	<i>Cordia boissieri</i>
Texas Ranger	<i>Leucophyllum frutescens</i>
Texas Umbrella (Chinaberry)	<i>Melia azedarachs</i>
Western Hackberry	<i>Celtis reticulata</i>
Xylosma	<i>Xylsoma congestum</i>
Yew Pine	<i>Podocarpus macrophyllus</i>

**Appendix A. Approved Plant List (Cont.)**

**Palms**

<b><u>Common Name</u></b>	<b><u>Botanical Name</u></b>
Mediterranean Fan Palm	<i>Chamaerops humilis</i>
Mexican Blue Palm	<i>Brahea armata</i>
Mexican Fan Palm	<i>Washingtonia robusta</i>
Pindo Palm	<i>Cocos australis</i>
Queen Palm	<i>Cocos plumosa</i>
Sago Cycad	<i>Cycas revoluta</i>
Windmill Palm	<i>Trachycarpus fortunei</i>

**Palm trees are limited to a total of 5 palms per residential unit.**

**It is strictly prohibited to plant or grow any plant species that are on Nevada's Noxious Weeds List.**

- See *Nevada Revised Statute Chapter 555* for more detail.

**Plants not on this list must be pre-approved by DUI.**