



# Pahrump Utility Company Inc. Water Conservation Plan



As of November 2012

**Table of Contents**

Purpose..... 3

Conservation Measures..... 3

    Landscapes ..... 3

    Turf Restrictions ..... 3

    Water Application..... 3

    Watering Restrictions..... 4

    Additional Watering Restrictions ..... 4

    Low Flow Fixtures..... 4

Nye County Water Conservation Standards (17.04.740)..... 4

Enforcement..... 7

Feasibility of Charging Variable Rates to Encourage Conservation ..... 8

Water Management..... 8

    Leak Identification Procedures ..... 8

    Reuse..... 9

Contingency Plan for Drought Conditions ..... 9

Estimate of Amount of Water Saved by Plan ..... 10

Public Education ..... 12

    Increase Public Awareness of Need to Conserve Water..... 12

    Encourage reduction in the size of lawn and use of plants that are adapted to arid and semi arid climates ..... 13

Measures to Evaluate Effectiveness of Plan ..... 13

Schedule for Conservation Plan..... 13

Procedure for Interested Person to Submit Recommendation or Views..... 13

    Plan Available for Inspection at PUCI’s Office ..... 13

    Plan May Be Revised To Reflect the Changing Needs and Conditions of the Service Area and Will Be Updated Every Five Years..... 13

Conclusion ..... 14

## Purpose

It is very important that Pahrump Utility Company, Inc. (PUCI), as a water provider, implement water conservation to help preserve our most important natural resource, our underground water supply. This Conservation Plan will provide everyone within PUCI's service territory with a stepping stone to protecting our underground water source.

## Conservation Measures

Pahrump Utility Company Inc.'s Water Conservation Requirements are set up to help promote the preservation of the underground aquifer. PUCI's water conservation requirements are listed below.

### Landscapes

- All plants and landscapes must be:
  - Drought Tolerant
  - Desert Friendly
  - Water Conscious
  - On Pahrump Utility Company Inc.'s (PUCI's) Approved List (See Appendix A for approved list)

### Turf Restrictions

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

### 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 Pahrump Utility Company, Inc. 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 lines.
- 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.

### **Watering Restrictions**

- From November 1 through February watering is limited to only one day a week.
- From September 1 through October and March 1 through April watering is limited to only three days a week.
- From May 1 through August watering is limited to any day of the week.

### **Additional Watering Restrictions**

- From May 1 until Oct. 1, 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 reseeded landscapes daily for up to 30 days is allowed once per calendar year.
- Drip watering is permitted any day of the week, as long as it does not exceed the number of assigned watering days for that season.
- Assigned watering groups are mandatory for all customers. Using sprinklers on days other than those assigned is considered water waste and may result in a water waste fee.
- In the summer, watering restrictions allow landscape watering any day of the week through August. PUCI recommends watering four days per week and increasing the schedule only if the landscape needs more water.

For lawns, use the cycle and soak method for sprinkler watering. On assigned watering days, water in three 4-minute cycles, with about an hour between each cycle if using pop-up sprinklers. Water for about 12 minutes each watering cycle if using rotating sprinkler heads.

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

Common Areas over 2 acres may apply for a waiver to certain restriction.

### **Low Flow Fixtures**

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

## **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 listed 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 groundwater 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 section 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 twenty four (24) 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 stormwater 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 irrigated with at least fifty percent (50%) 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)*

*[http://sterlingcodifiers.com/codebook/index.php?book\\_id=648&section\\_id=705489](http://sterlingcodifiers.com/codebook/index.php?book_id=648&section_id=705489)*

## **Enforcement**

- Pahrump Utility Company, Inc. will enforce all conservation and watering requirements for developments within its service territory.
- Pahrump Utility Company, Inc. requires Developers to place PUCI's water conservation measures in its CC&R's and Design Guidelines.
- The Board of Directors of the Home Owner Associations for each Development shall be responsible for enforcing all conservation and watering requirements that are in the Design Guidelines and CC&R's.
- 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**

PUCI has researched the feasibility of charging variable rates to encourage conservation. In order for PUCI to charge a variable rate, it applied to the Public Utilities Commission of Nevada (PUCN). Hearings were conducted to allow public comment. The PUCN researched the Utility's financial records to verify that a change in the rate would be acceptable. The variable rates were approved; higher rates are set for water usage that reflects use in excess of what is normal for drought tolerant landscaping. This variable rate is comparable to the variable rates that the other water utilities in the Pahrump Valley charge.

## **Water Management**

### ***Leak Identification Procedures***

PUCI currently inspects the infrastructure on a regular basis for leaks and inaccurate meters. PUCI employees drive the service territory inspecting the service area for any leaks or abnormalities. It also asks all of its customers to report any water leaks to PUCI immediately.

When PUCI reads meters, PUCI looks for abnormalities in water use. If there seems to be an abnormality then PUCI 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, PUCI will reread the meter to verify the initial meter read was accurate. PUCI also will inspect the property, from the street, and see if there is a change in landscape, evidence of a new pool or other improvement, that would cause a change in water use. If it is apparent that the meter has failed, PUCI will replace the meter. If the meter has not failed, PUCI may contact the customer to discuss the increased use to determine if a leak is present.

## ***Reuse***

PUCI currently uses Rapid Infiltration Basins (RIBs) to replenish the aquifer with effluent water. In the future PUCI may use effluent to irrigate turf for parks, schools, golf courses or other public facilities if those types of facilities are built within its service territory and reuse would be efficient.

## **Contingency Plan for Drought Conditions**

### 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 drought declaration of PUCI is in effect

### Drought Watch

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

During drought watch conditions:

- (a) Single-family and multifamily 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 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 PUCI 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 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) During the months of May through August, the planting of cool-season grasses (i.e. tall fescue or rye grass) is prohibited. The planting of warm-season grasses (i.e. bermuda and zoysia) is permitted.
- (c) The restrictions applicable to nonresidential development during drought watch conditions shall apply during drought alert conditions as well.

#### Drought Critical

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

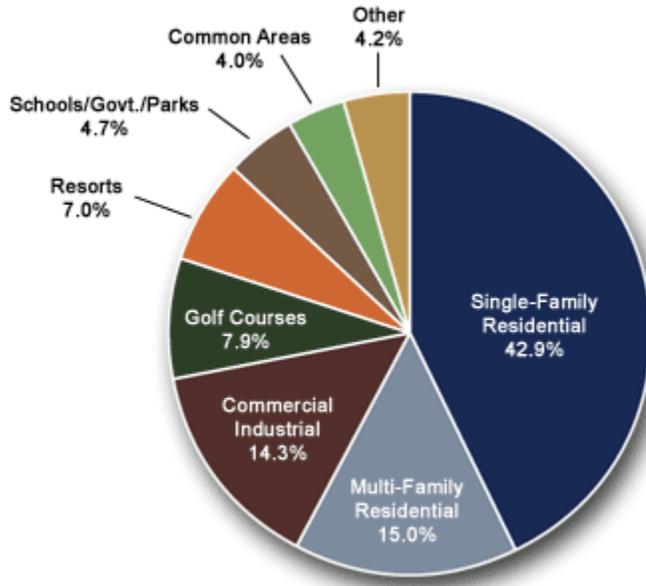
During drought critical conditions:

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

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

- Residential water customers use 57.9 percent of Southern Nevada's drinking water.

# Annual Water Use in Southern Nevada

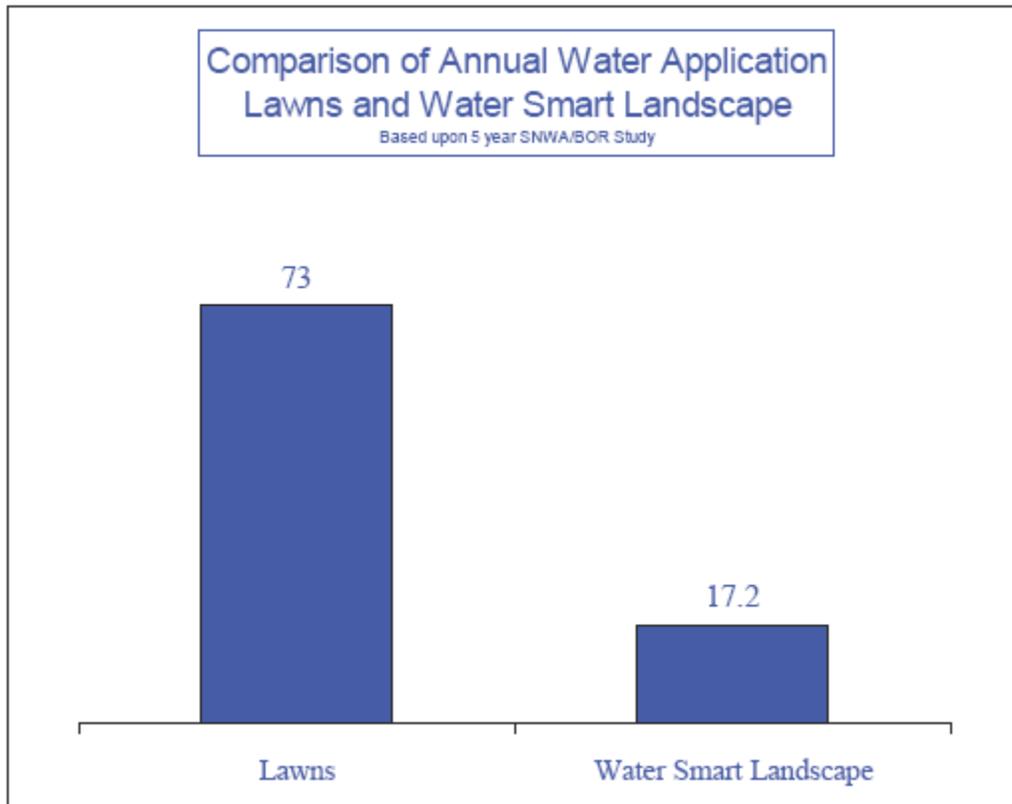


Based upon 2004 municipal metered potable and non-potable water use in the Southern Nevada Water Authority's metered service area.

- Based upon the Southern Nevada Water Authority's research, Residents use 70% of their drinking water outdoors, &
- 20 to 30 percent of the water residents consume is lost to leaks or water waste.

## Total Residential Water Use





- PUCI estimates that by following this water conservation plan a customer could save water consumption by more than 50%.

## Public Education

In order to promote public awareness, PUCI 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 PUCI's water conservation measures. Currently the Southern Nevada Water Authority (SNWA) has a vast amount of information on water conservation and PUCI recommends that its customers visit [www.snwa.com](http://www.snwa.com).

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

- PUCI is committed to increasing public awareness of the need to conserve water. PUCI has participated in Nye County's ad hoc water committee meetings to address water conservation needs in the Pahrump Valley.

### ***Encourage reduction in the size of lawn and use of plants that are adapted to arid and semi arid climates***

- PUCI 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**

In 2007, prior to implementing a Water Conservation Plan, the average residential usage was 311 gallons per day (GPD) per residence or ~127.5 gpd per capita. In 2011, after implementing a Water Conservation Plan and variable rates, the average residential usage drop over 10% to 279 GPD per residence or ~114 gpd per capita. This is a sign that this Conservation Plan has been effective in helping PUCI's customers conserve water. PUCI continues to review and evaluate the average monthly consumption by its customers each year to determine if the conservation plan is promoting a reduction in average usage.

## **Schedule for Conservation Plan**

If approved by the Nevada Division of Water Resources (NDWR), this plan will be implemented within 90 days of approval. It will be updated every five years.

## **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 PUCI. Developers who are annexed into PUCI's service territory will be provided with PUCI's conservation plan and also encouraged to submit recommendations to PUCI.

### ***Plan Available for Inspection at PUCI's Office***

- PUCI's conservation plan is available for inspection at PUCI's office in Pahrump, Nevada during office hours.

### ***Plan May Be Revised To Reflect the Changing Needs and Conditions of the Service Area and Will Be Updated Every Five Years***

- PUCI will review annually its conservation measures and conservation plan to see if additional conservation measures are needed. The plan will be updated every five years to comply with NRS 540.

## **Conclusion**

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

## Appendix A

Recommended for the Pahrump Area by the Division of Forestry		
	<u>Common Name</u>	<u>Botanical Name</u>
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>
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	Screw Bean Mesquite	<i>Prosopis pubescens</i>
	Yellow Bird of Paradise	<i>Caesalpinia gilliesii</i>
	Aleppo Pine	<i>Pinis 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>
	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>
*	Eucalyptus	<i>Eucalyptus microtheca</i>
*D	Blue Palo Verde	<i>Cercidium floridum</i>
*D	Mexican Palo Verde	<i>Parkinsonia aculeate</i>
D	Sweet Acacia	<i>Acacia Smallii</i>

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

## Appendix A (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>
	<i>Ebanopsis ebano</i>
Texas Ebony	( <i>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 azedarach</i>
Western Hackberry	<i>Celtis reticulata</i>
Xylosma	<i>Xylsoma congestum</i>
Yew Pine	<i>Podocarpus macrophyllus</i>

## Appendix A (Cont.)

### Palms

<u>Common Name</u>	<u>Botanical Name</u>
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 NRS 555 for more detail

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