

# The Primadonna Company, LLC

Water Conservation Plan

June 2013



PRIMM VALLEY RESORT & CASINO



BUILDING A BETTER WORLD

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## INTRODUCTION

This water conservation plan (Plan) is specific to The Primadonna Company, LLC., Primm Valley Resort and Casinos, Whiskey Pete's Hotel and Casino, and Buffalo Bills Resort and Casino (collectively the Property), located at 31900 Las Vegas Blvd. South, Primm, Nevada. The Property is on the border of Nevada and California in Ivanpah Valley and at the southernmost extent of the Spring Mountains and located in portions of sections 8, 9, and 10, Township 27 South, Range 59 East, MDM in Clark County and in portions of sections 8 and 17, Township 17 North, Range 15 East, SBM in San Bernardino County, California.

The Plan described herein was prepared by MWH Americas, Inc. on behalf of the Property operator, The Primadonna Company, LLC, and the Property owners, Primm South Real Estate Company and The Primadonna Company, LLC.

## PROPERTY and WATER USE BACKGROUND

The Property's water system serves Buffalo Bill's Resort and Casino, Primm Valley Resort and Casino, and Whiskey Pete's Hotel and Casino; the Fashion Outlets of Las Vegas; an employee apartment complex; an employee RV park; a convenience store and several businesses including four (4) out-of-hotel fast food restaurants and three (3) gas stations, two (2) with a travel center. Treated effluent from these facilities is discharged to four (4) rapid infiltration basins (RIBs) and to NV Energy, Inc.'s, Walter M. Higgins III Generating Station (Higgins) for makeup water purposes. Undeveloped Property land is intermittently used for off road race activities.

Eleven Nevada Division of Water Resources (NDWR) water rights, for a combined duty of 751 acre-feet annually (afa) of consumptive use, are permitted for Property use. The water supply for Property operations is pumped out of the ground, primarily provided by six (6) wells located in California and Nevada. Groundwater diversion data for the Property in the 2012 water year indicated a total groundwater diversion of 919 acre-feet and a consumptive use of 599 acre-feet. This use amount is well within NDWR's consumptive use permit conditions for the Property.

Water conservation has been and remains an integral part the Property's water operations through groundwater recharge of treated effluent by way of the RIBs and Higgins use of treated effluent for their makeup water needs.

Historic occupancy and development trends indicate that Property water use fluctuates from year to year. Various sectors of the Property are pursuing an increase in occupancy and expanding development opportunities as they arise. However, when planning and implementing current and future activities, water demands will be provided by available permitted water resources with water use and water conservation taken into consideration.

This Plan includes conservation goals and measures, water use profiles, and examples of educational approaches and should be used as a guide for water conservation planning and implementation.

## **PUBLIC NOTIFICATION**

This plan is compliant with Nevada Revised Statutes (NRS) Sections 540.121 through 540.151 and is available for public inspection during office hours at the following location:

**The Primadonna Company, LLC**  
**Director of Facilities**  
**31900 Las Vegas Blvd. South**  
**Primm, Nevada 89019**  
**702-679-5605**

Public comments about this plan are encouraged. Written comments may be sent to the address above.

## **SECTION 1 – CONSERVATION PROGRAM GOALS**

The following goals have been selected to begin building conservation awareness. As customers and employees become more conservation minded and realize the benefits of conservation practices.

### **1.1 Establish a Conservation Budget**

Currently there are no funds set aside for conservation purposes. The Property's revenue varies from month to month and annually, therefore the budget will not be fixed or substantial.

### **1.2 Create a Conservation Education Program**

Expanding on the existing education program will be the first step toward water conservation. Conservation materials may be included in the employee apartment complex, on the employee notification board, and in the engineering and landscape offices. Water conservation fliers may be developed and made available to hotel guests. The property also has an employee RV park that is not in operation at the time of this report. If, in the future the employee RV park becomes operational, conservation materials may be provided to those who reside at that location.

After evaluating the success of these initial steps, the program will be adjusted in order to maximize efforts and minimize expense.

### **1.3 Create Water Aware Personnel**

The Property does not have personnel or procedures in place to monitor water waste on a full time basis. However, there is value in training hotel, casino, restaurant, and gas station employees in conservation practices and techniques so that waste can be minimized and prevented. As outlined in the appendices, employees should be involved in water conservation efforts.

### **1.4 Draft and Implement a Landscape Plan**

Landscape water usage is much higher in the summer than the winter due to landscape watering needs. For this reason, a landscaping plan is a fundamental part of an effective water conservation plan. A landscape plan will regulate both new landscapes and the replacement of existing landscapes as necessary. The intent of the plan is not to limit landscape options, but to help optimize the efficiency of landscape water use.

## 1.5 Conservation Plan Implementation Schedule

The conservation measures in this plan will be implemented according to the following schedule in Table 1.1:

**Table 1.1- Plan Implementation Schedule**

<b>Activity</b>	<b>October, 2013</b>	<b>October, 2014</b>
<b>Conservation Education Program</b>	<b>Implement</b>	<b>Review</b>
<b>Landscape Adjustment</b>	<b>Implement</b>	<b>Review</b>
<b>Create Water Aware Personnel</b>	<b>Implement</b>	<b>Review</b>

The annual water production and use audit will help determine if the schedule requires adjusting or whether it is necessary to implement additional measures.

## 1.6 Plan Metrics

In order to verify the conservation effect of the measures included in this plan, periodic (at least annual) system audits will be performed. Pumping and meter records will be compared to see if water use has decreased. Gallons used per month will also be audited and compared with past records to determine if efforts have yielded a reduction in usage.

## 1.7 Conservation Plan Review

This plan will be reviewed and revised every five (5) years. Plan adoption and revision will conform to NRS 540.131 (2) and (4). Per these sections any interested person shall have the opportunity, "including, but not limited to, any private or public entity that supplies water for municipal, industrial or domestic purposes, to submit written views and recommendations in the plan." Any revisions will be made available for inspection.

## SECTION 2 – WATER USE PROFILE AND FORECAST

This section details the production and usage rates of the Property, including: water rights, existing supply sources, water use, and water use forecasts.

### 2.1 Water Rights

Eleven NDWR water rights permits (permits) are associated with the Property. The permit numbers are: 50808, 51870, 51871, 51872, 51873, 52087, 52088, 52686, 52687, 63594, and 68945 for a combined duty of 751 afa of consumptive use. Subsequent to water use by Property businesses and customers, water is discharged to the Property's onsite wastewater treatment facility. Treated wastewater effluent is discharged into RIBs for groundwater basin recharge and a portion of this effluent is diverted to Higgins for makeup water requirements. Permit number 68917 is permitted for the Property's treated wastewater effluent and a secondary use permit, number 68917-S01, is permitted for makeup water requirements at Higgins.

The Property obtains recharge credits from groundwater basin recharge via the RIBs. Estimates of the amount of water recharged are based on a NDWR formula that consists of subtracting evaporation losses from RIB inflow (1.56%) and the amount of water credited as recharge to the aquifer is calculated to be 90 percent of the total volume of water discharged to the RIBs less evaporation.

Consumptive use is calculated from the amount of water diverted from the Property's groundwater production wells less the amount of water recharged (after applying the NDWR recharge credit formula) to the groundwater basin via the RIBs (Figure 2.1).

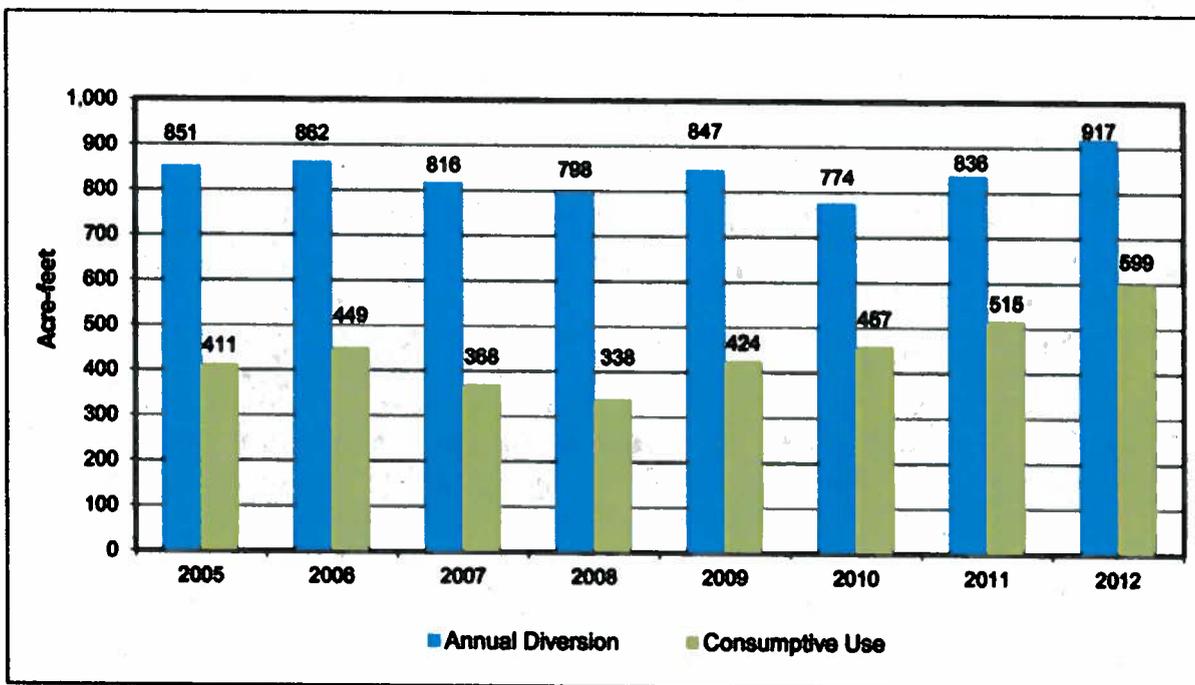
### 2.2 Supply Sources and Production

There are six wells associated with the Property, two (2) wells are located in California and four (4) wells are located in Nevada. The water supply for Property's businesses and customers is provided by two (2) wells, designated as WP-5 and WP-6. These two (2) wells are located in California approximately three (3) miles from the Nevada-California border and Primm, Nevada. At the time of this report, plans to drill a replacement well WP-5A and abandon WP-5 are in the bidding phase.

Wells WP-1A and WP-2 supply water as required to Property operations and to Higgins for supplemental purposes. Wells WP-3 and WP-4 are located adjacent to Higgins and are used for their water needs. At the time of this report, WP-3 is inactive.

### 2.3 Well Production Storage

Five (5) water storage tanks that are fed by chlorinated well water provide for all Property water needs. The storage tanks have capacities of: 1,000,000; 500,000; 320,000; 280,000; and 130,000 gallons.



**Figure 2.1 – The Primadonna Company, LLC, Primm Nevada Annual Groundwater Diversion and Consumptive Use 2005 - 2012**

## 2.4 Water Use and Metering

Water users on the Property consist of Buffalo Bill’s Resort and Casino, Primm Valley Resort and Casino, and Whiskey Pete’s Hotel and Casinos; the Fashion Outlets of Las Vegas; the employee apartment complex; the employees’ RV park; and several businesses including four (4) out-of-hotel fast food restaurants, a convenience store and three (3) gas stations, two (2) with a travel center under construction at the time of this report. Water is also consumed by landscape irrigation, off road race course dust suppression, trucker showers, maintaining the hotel’s pools, restrooms, water features, laundry facilities and restaurant needs.

Totalizing water use meters are installed throughout the Property and meter readings are recorded on the first of each month. The following locations have totalizing water use meters: each of the five (5) production wells in use, the two (2) resorts and casinos (Primm Valley and Buffalo Bill’s), the Fashion Outlets of Las Vegas, the employees’ apartment complex and RV Park, the four (4) out-of-hotel fast food restaurants, and the convenience store. Two (2) totalizing meters meter the employee apartment complex and employee RV Park. There are no individual meters on the apartments or RV spaces.

## 2.5 Customer Usage

Water use metering allows for baseline information on customer water usage on the Property. Data is available for total groundwater withdrawal volumes (Figure 2.1) versus the hotel casinos, employee apartment complex and RV Park occupancy. Results from 2005 through 2012 indicate an average water use of 238 gallons/capita/day (gpcd) (Table 2.1).

This per capita value is viewed only as a baseline for future water usage comparisons. The calculation for the per capita value is represented below. The annual average occupancy is the percent of occupancy for the three hotel casinos hotel rooms. One and seven tenths (1.7) represents the number of guests per hotel room and 600 represents the number of residents in the apartment complex and RV Park.

$$\frac{\text{(Annual Ground Water Diversion converted to gallons / day)}}{\text{(hotel rooms x average annual occupancy) } \times 1.7 + 600}$$

There are a number of water uses per customer and employee that are not included in Table 2.1 as the number of customers and employees using various services is unknown, such as, non-hotel customer casino and facilities, the Fashion Outlets of Las Vegas, gas stations, the four (4) fast food restaurants, and the convenience store. Therefore, per capita water use represented in Table 2.1 is viewed as much higher than actual per capita water use if a complete data set were available.

**Table 2.1 – Annual Per Capita Water Use Average**

Year	Water Use (gpcd)	Occupancy (people / day)
2005	218	3,480
2006	236	3,256
2007	227	3,216
2008	241	3,954
2009	250	3,030
2010	254	2,721
2011	243	3,076
2012	235	3,478
<b>Average</b>	<b>238</b>	<b>3,151</b>

Note: Annual per capita water use average for the three hotels and the employee apartment complex and RV Park. Results do not include all businesses and customers that use the Property.

## 2.6 Water Demand Forecast

Future water requirements may include adding water efficient truck washing facilities, the Fashion Outlets of Las Vegas seeking expansion of opportunities to increase occupancy, and the hotel casinos are seeking to increase hotel occupancy and use. In addition there is a potential that undeveloped land within the Property boundary could be developed in the future.

To date Higgins has not used their full permitted duty of secondary water from the Properties' wastewater treatment facility. As such, there is the potential that Higgins could use their full permitted duty.

Based on historic trends of Property expansion, additional water use demands are foreseen, however the timeline is unknown.

## 2.7 Estimated Amount of Water Conserved Due to Measures

Domestic per capita water use per day, for Nevada ranges from 206 gpcd for self-supplied sources (individual wells) to 189 gpcd for public water supply sources (U.S. Geological Survey, Estimated Water Use 2005). By establishing conservation measures, the member agencies of the Southern Nevada Water Authority (SNWA) have reduced use from 350 gpcd in 1990 to 250 gpcd in 2008. In 2009 SNWA set its goal to 199 gpcd by 2035. Although these gpcd values are not specific to commercial use they can serve as a guideline for water conservation on the Property.

Currently the 2005-2012 average gpcd use is 238 gallons (Table 2.1). This value is above the Nevada GPCD data however, it is helpful for planning purposes. Although as mentioned in section 2.5, there are a number of unaccounted businesses and customers not included in the per capita data, a baseline of use has been established. Reducing this baseline per capita use by 5%-10% would be an initial goal of the Property by applying this Plan's water conservation measures. Additional reduction in water use should be evaluated after a 5%-10% reduction is achieved.

## **SECTION 3 – CONSERVATION INCENTIVES**

### **3.1 Water Rates**

The only water use that is metered and assigned a water rate is for the Fashion Outlets of Las Vegas and the four (4) out-of-hotel fast food restaurants. The feasibility of charging variable rates for excessive water may be pursued during contract renewal with each metered user.

Employee apartment complex and employee RV Park occupants pay a flat rate for utilities and there are no individual water meters per residence or RV space. Other water uses, i.e., hotels, casinos, restaurants, gas stations, landscaping, etc. that are metered have no assigned water rate structure as they are part of the Property operations.

Individual site meters are necessary to monitor water use, but individual meters are not economically feasible at this time. Water conservation incentives should rely upon educational fliers, literature, and personal contact.

### **3.2 Published Literature**

The Environmental Protection Agency (EPA) has water conservation guidelines, publications, information on water efficient devices, etc. that can be viewed at the web site addresses: [http://www.epa.gov/watersense/about\\_us/index.html](http://www.epa.gov/watersense/about_us/index.html) and <http://water.epa.gov/infrastructure/sustain/waterefficiency.cfm>. Applicable information within these sites can be selected and made available to employees and customers.

## SECTION 4 – CONSERVATION MEASURES

### 4.1 Plumbing Standards

The most recent federal plumbing standards are included in Table 4.1. These standards are applicable to all water systems and are included here as an example of conservation goals. Table 4.1 shows the different plumbing fixtures available that meet the federal standards and offers the Property alternatives that maximize conservation efforts.

**TABLE 4.1 - Federal Plumbing Standards**

Fixtures	FEDERAL ENERGY POLICY ACT (FEPA)	
	Manufacture	Effective Date
Shower Heads	2.5 gpm	1/1/1992
Lavatory Faucets	2.5 gpm	1/1/1992
Sink Faucets	2.5 gpm	1/1/1992
Metering Faucets	0.25 gal/cycle <sup>a</sup>	1/1/1992
Toilets	1.6 gpf	1/1/1992
Flushometer Toilets Valves	1.6 gpf	1/1/1992

Notes:

Source: EPA Smart Sense Database

gpm = gallons per minute

gpf = gallons per flush

<sup>a</sup> 0.25 gallons/cycle (pertains to maximum water delivery per cycle)

### 4.2 Property System Conservation Measures

Conservation measures implemented by the Property will consist of managing water use in an effective way that reduces water consumption. One such measure would be to periodically inspect the Property's system for water leaks and complete needed repairs.

#### 4.2.1 Water Watcher Procedures

Management and employees should be trained in recognizing wasteful water use recognition and implement conservation measures, such as: 1) notifying the Facilities Director when water waste occurs or water conservation measures can be improved, 2) learning how to turn on or off a valve in the event of a broken pipe, 3) distributing educational materials and discussing with customers and other employees the importance of water conservation, and 4) notifying the Facilities Director should customers water waste be observed.

## **4.2.2 Wastewater Effluent Recycling**

Wastewater generated from the Property is discharged to the Property's onsite wastewater treatment facility. Treated wastewater effluent is discharged into RIBs for groundwater basin recharge and a portion of this effluent is diverted to Higgins for makeup water requirements. The Property obtains recharge credits from groundwater basin recharge via the RIBs. Maintaining and inspecting the totalizing meters, the treatment facility, the RIBs, and Higgins makeup water system on a monthly basis will assure that water waste is minimized and eliminated.

## **4.3 Water Users Conservation Measures**

### **4.3.1 Drought & Reduced Pumping Measures**

All water supplied to the Property comes from groundwater sources. Because of this it is difficult to determine the effect of a drought year on the groundwater system and the consequences of a drought may not be detected in the water table until several years after the drought. To assist with detecting water-level changes associated with groundwater withdrawal, quarterly water-level measurements for existing wells should be collected and evaluated on an annual basis. These measurements will assist with determining the availability of water for current and subsequent year's uses. This analysis should be completed in the early spring before the summer use season.

Events that trigger reduced pumping or a water emergency include interruption of water service by infrastructure failure, a natural disaster, restrictions imposed by a governing body to impose drought conservation.

**Table 4.2 -Overall Property Drought Conservation and Reduced Pumping Measures**

<b>Phase</b>	<b>Planning Measure</b>	<b>Outreach Measure</b>	<b>Action</b>
Conservation	Maintain Existing Usage	Encourage conservation through educational efforts. Use personnel to communicate drought information, warn of potential for additional measures associated with reduced pumping and a water emergency.	Institute intensive leak reduction program. Reduce the percent of unaccounted for water. Increase notification.
Reduced Pumping	10-30%	Property owner appeal to customers for water use reductions.	Limit water use for flushing, public fountains, and public facility landscape irrigation.
Water Emergency	30% or more	Explain details of emergency.	Reduces per Tables 4.3, 4.4, 4.5, 4.6, 4.7, & 4.8.

Beyond Table 4.2 conservation and reduced pumping measures, water customers and Property employees should be expected to employ special conservation measures during times of drought. Special drought conservation measures for water conservation have been divided into the following categories and are outlined in the following drought measure tables:

- Table 4.3 Fountains and Water Features
- Table 4.4 Landscape Irrigation
- Table 4.5 Hotel Swimming Pools
- Table 4.6 RV, Vehicle, Truck Washing
- Table 4.7 Replacement Vegetation Types
- Table 4.8 Additional Drought Measures

**Table 4.3 - Drought Conservation and Reduced Pumping Measures for Fountains and Water Feature**

Phase	Planning Measure	Outreach Measure and Action
Conservation	Maintain Existing Usage	Encourage conservation through educational efforts.
Reduced Pumping	10-30%	Fountains and water features with a surface area of 200 ft <sup>2</sup> or less are allowed. Otherwise, can maintain recirculating water to sustain pumps, pond liners, surface coatings and ancillary equipment. The features may run only between 1 a.m. and 4 a.m. or whenever freezing conditions require system preservation.
Water Emergency	30% or more	Fountains and water features not allowed.

**Table 4.4 - Drought Conservation and Reduced Pumping Measures for Landscape Irrigation**

Phase	Planning Measure	Winter Nov-February	Spring March-April	Summer May - August	Fall Sept. - October
Conservation	Maintain Existing Usage	1 day/week	3 days/week	7 days/week	3 days/week
Reduced Pumping	10-30%	1 day/2 weeks	5 days/2 weeks	6 days/week	5 days/2 weeks
Water Emergency	30% or more	1 day/4 weeks to no watering.	No watering or remove some landscape from irrigation and water 1 day/wk	No watering or remove some landscape from irrigation and water 4 days/wk	No watering or remove some landscape from irrigation and water 1 day/wk

**Note:** In all spring, summer and fall for reduced pumping and water emergency, watering should only be allowed between 7 pm. and 10 am. A cycle and soak water procedure should be implemented such that watering would occur, for example, 3 times per day for 4 minutes rather than 12 minutes once per day. Although, shorter water times may be adequate for specific vegetation conditions.

**Table 4.5- Drought Conservation and Reduced Pumping Measures  
for Hotel Swimming Pools**

<b>Phase</b>	<b>Planning Measure</b>	<b>Outreach Measure and Action</b>
Conservation	Maintain Existing Usage	Encourage conservation through educational efforts.
Reduced Pumping	10-30%	Reduce the use of pools and water slide to daylight hours, add evaporation surface insulation cover to pool.
Water Emergency	30% or more	To be determined.

**Table 4.6 - Drought Conservation Reduced Pumping Measures  
for RV, Vehicle, Truck Washing**

<b>Phase</b>	<b>Planning Measure</b>	<b>Outreach Measure and Action</b>
Conservation	Maintain Existing Usage	Encourage conservation through educational efforts. Washing allowed.
Reduced Pumping	10-30%	Only high-pressure, low-volume sprayer using less than 10 gallons per vehicle and 20 gallons per RV.
Water Emergency	30% or more	Allowed only at a facility where water is discharged into the sanitary sewer and recycled through approved methods.

**Table 4.7- Drought Conservation and Reduced Pumping Measures  
for Replacement Vegetation Types**

<b>Phase</b>	<b>Planning Measure</b>	<b>Outreach Measure and Action</b>
Conservation	Maintain Existing Usage	Encourage conservation through drought tolerant replacement vegetation. Turf and existing vegetation may be replaced.
Reduced Pumping	10-30%	Encourage conservation through drought tolerant replacement vegetation. If maintenance needs require turf or existing vegetation replacement then consider replacement of turf and existing vegetation with drought tolerant vegetation.
Water Emergency	30% or more	Encourage conservation through drought tolerant replacement vegetation. Turf irrigation will be suspended. Some vegetation that is removed may not be replaced.

**Table 4.8 - Additional Drought Conservation and Reduced Pumping Measures**

<b>Phase</b>	<b>Planning Measure</b>	<b>Outreach Measure and Action</b>
Conservation	Maintain Existing Usage	Encourage conservation through educational efforts. Fix all leaking pipes, valves, etc.;
Reduced Pumping	10-30%	Mandatory restrictions on all outside uses by all employees, including landscape irrigation. Add weighted one gallon bottle to all toilets. No drinking water served in restaurant without it being requested by customer.
Water Emergency	30% or more	All outdoor water use severely restricted. No misting systems allowed. Use approved chemical methods for outside construction and off road race activities dust suppression needs. Same as drought watch measures. Additional measures to be determined.

Appendix A contains a list of conservation measures that can be implemented by employees and customers.

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## **APPENDIX A – CONSERVATION MEASURES**

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Water conservation measures are presented below for reference and to be actively used to promote conservation. Included below are water conservation measures specific to the overall Property, landscaping, customers, and employees.

### **A. PROPERTY CONSERVATION MEASURES**

#### **A.1 Property Wide Internal Water Audit**

The water audit should be completed to target all of the Property's water system. The following elements should be part of an effective audit:

- 1) Evaluation of fixtures and appliances
- 2) Check for needed repairs and leaks
- 3) Evaluation of landscape
- 4) Evaluation of outdoor water use
- 5) Evaluate efficiency measures
- 6) Educate customers and employees using available fliers

#### **A.2 Hardware/Equipment Measures**

The following is a list of devices/practices that will reduce water consumption on the Property. New technology may allow for increases in water savings devices.

---

<b>Measure</b>	<b>Description</b>
<b>Bathroom/Kitchen Fixtures</b>	
Low flow toilets	1.6 gallons per flush
Toilet retrofit devices	Bladders (bags), dams, early close flappers, other hardware and adjustments
Toilet Leak repairs	Includes detection (dye tabs) and replacement of worn parts
Low-volume shower heads	2.5 gallons per minute at 80 psi
Shower retrofit devices	Includes temporary cutoff valves and restrictors
Low-volume faucets	2.5 gallons per minute at 80 psi
Faucet retrofit devices	Includes aerators, activation sensors, self-closing meter valves
Faucet maintenance	Includes washer replacement, repacking, tightening and cleaning aerators
Water pressure reduction	Only needed if system pressure exceeds what's required
<b>High Efficiency Appliances</b>	
Clothes washers	27 gallons per load
Dish washer	4.5 gallons per load

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## APPENDIX B – LANDSCAPE CONSERVATION MEASURES

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### B. LANDSCAPE CONSERVATION MEASURES

#### B.1 Landscape Water Audits

Landscape water audits should be conducted on irrigation systems. The following elements should be part of an effective audit:

- 1) Estimation of outdoor use based on meter records
- 2) Check for needed repairs and leaks
- 3) Evaluation of landscape (size, soil, amount of turf, types of plants)
- 4) Evaluation of irrigation system (timers, use of drip, precipitation amounts)
- 5) Efficiency recommendations
- 6) Educate staff

Xeriscape is a method of landscaping that employs low-water use plants, turf, ground covers, shrubs and trees. It includes careful planning, soil analysis, and irrigation system design. Replacement landscaping should consider different types of xeriscape vegetation.

#### B.2 Hardware/Equipment Measures

Landscape hardware measures consist of two basic groups:

- 1) Landscape materials and
- 2) Irrigation equipment.

The following is a list of landscape materials and irrigation equipment and how they should be used to support water conservation principles.

---

<b>Measure</b>	<b>Description</b>
<b><u>Landscape Materials</u></b>	
Trees, plants and grass should be well suited to climate and altitude and be drought tolerant	
Organic Mulch	Grass clippings, leaves, wood chips, bark, pine needles. Organic mulches help to retain soil moisture and keep ground cool around plants.
Inorganic Mulch	Boulders, gravel, pavers, decomposed granite and stepping stones. Inorganic mulches are generally more for decorative purposes but they reduce the amount of trees, plants and turf, thereby conserving water.
Compost	Made of manure or biosolids and wood, straw, grass and leaves. Helps plants stay healthy and retains moisture in the soil.
<b><u>Irrigation Equipment</u></b>	
Valves	Should be sized to meet requirements and checked periodically for leaks
Sprinkler heads	Should match water volume requirements of area being irrigated
Sprinkler nozzles	Should have proper arc of coverage and proper trajectory
Irrigation controllers	Should have required number of stations, programs and starts. Also rain delays and sensor terminals.

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## APPENDIX C – CUSTOMERS, LANDSCAPE, AND EMPLOYEE MEASURES

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### C. CUSTOMERS, LANDSCAPE, and EMPLOYEE MEASURES

Water conservation measures below are specific to educating customers, landscape management and management personnel, and Property employees. Each of these measures should be distributed as described.

#### C.1 Customer Conservation Flier

A water conservation flier should be developed and made available to customers of the hotel. Shown below is an example such a flier.

### ENVIRONMENTAL AWARENESS IS IMPORTANT TO US

Dear Guest:

Every day millions of gallons of water are used to serve our guests.

Please consider:

- Reducing the amount of water used for bathing and brushing your teeth
- Reuse wash towels and linens when convenient

***Thank you for Helping us Conserve the Earth's Vital Resources.***

## **C.2 Property Landscape and Open Water Tips**

These guidelines should be used by landscape personnel in an effort to conserve water. This flier should be posted in the Engineering and Landscape Department offices.

### **PLEASE HELP US CONSERVE WATER BY OBSERVING THE FOLLOWING WATER SAVING TIPS**

- 1) Adjust sprinkler systems to keep water on landscaping and off of sidewalks, buildings, streets, etc.
- 2) Avoid planting turf on inclines and in isolated areas that are difficult to water.
- 3) Plant during the spring or fall when the watering requirements are lower.
- 4) Water late in the evening to early in the morning (7 pm to 10 am) when temperatures are lower to minimize evaporation.
- 5) Use more frequent, shorter watering intervals to reduce runoff and allow for better absorption every time you water.
- 6) Leave grass longer when mowed, as longer grass shades root systems and holds soil moisture better than a closely clipped lawn.
- 7) Use a sprinkler for large areas of grass and water by hand elsewhere to eliminate unnecessary watering.
- 8) Install a rain shut-off device on your automatic sprinklers to eliminate unnecessary watering.
- 9) Periodically check sprinkler system for leaks and keep the heads in good shape.
- 10) Don't water landscaping on windy days.
- 11) Group plants by watering needs to maximize the benefits of watering time.
- 12) Regularly weed landscaping, as weeds compete with desirable plants for nutrients, light and water.
- 13) Use a layer of organic mulch around plants to reduce evaporation.
- 14) Apply the minimum amount of fertilizer as it increases water consumption requirements.
- 15) Aerate turf so water will reach the roots instead of running off the surface.
- 16) Check the pools and water feature for leaks if there is an automatic refilling device.
- 17) Use a commercial car wash that recycles water.
- 18) Reuse water from backwashing the pool on landscaping, if the water is not over chlorinated.

### **C.3 Property Water Conservation Tips**

These guidelines should be posted on the employee's notification boards and employee apartment complex and RV Park in an effort to conserve water.

#### **PLEASE HELP US CONSERVE WATER BY OBSERVING THE FOLLOWING WATER SAVING TIPS**

- 1) When washing dishes by hand, don't let the water run while rinsing. Fill one sink with wash water and the other with rinse water.
- 2) Evaporative coolers require a seasonal maintenance checkup. For more efficient cooling, check evaporative coolers annually.
- 3) Run washing machines and dishwashers only when they are full.
- 4) Keep a pitcher of water in the refrigerator instead of running the tap for a cold drink so no water goes down the drain.
- 5) Use a broom instead of a hose to clean the driveways, sidewalks, parking lots, and common areas.
- 6) If Property showers can fill a one gallon bucket in less than 20 seconds, replace it with a more efficient showerhead.
- 7) Turn faucets off tightly after use and check all faucets and fixtures for leaks.
- 8) When purchasing a new appliance, look for ones with adjustable cycle and load sizes and low-volume/flow features.
- 9) Test toilet leakage by putting food coloring in the toilet tank and if it seeps into the toilet bowl there is a leak.
- 10) Don't use running water to thaw food.
- 11) Soak pots and pans instead of running water over them to remove stains.
- 12) Locate the master water shutoff valve to save water and prevent water damage in case of a broken pipe.
- 13) Make sure there are aerators on all faucets.
- 14) Consider installing an instant water heater on kitchen sinks to reduce the amount of water run until it gets hot.
- 15) Winterize outdoor spigots to prevent pipes from bursting or freezing.
- 16) Insulate hot water pipes to reduce the amount of water run to reach the desired temperature. Install covers on pools and spas and check for leaks around pumps.
- 17) Reuse towels to reduce laundering requirements.

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