

March 12, 2014

Elk Point Country Club

Water Conservation Plan

March 12, 2014

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Prepared for:

**Elk Point Country Club
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Introduction

The water supply in Nevada is a precious commodity and plays an important role in determining Nevada's future. Nevada is the one of the driest states in the nation as well as one of the fastest growing ones. Nevada's future, both from an economic and a quality of life view, depends heavily upon the wise management of the water supply.

Groundwater, in general, provides about 40 percent of the total water supply used in Nevada. In some areas, groundwater provides the entire water supply. Groundwater usage may vary considerably from year-to-year as it is sometimes pumped to supplement surface water sources.

Water use in Nevada can be classified as:

- Domestic (household, both indoor and outdoor) – Met by public supply or private supply (e.g. wells).
- Commercial (businesses) – Met by public supply or private supply (e.g. non-community systems).
- Industrial (manufacturing/construction) – Met by public supply or private supply (e.g. non-community systems).
- Thermoelectric (electric/fossil fuel/geothermal power generation) – Met by public supply in a minor fraction.
- Mining (mining processes) – Supply source varies widely from operation to operation and is dependent upon the mineral being recovered and the recovery process employed.
- Irrigation (land use) – Met by self-supplied or supplied by irrigation companies or districts.
- Livestock (farm needs) – Supply source varies.

While all classifications of water usages have shown an increase over the years, it has historically been irrigation water use which has accounted for the majority of the water use in Nevada.

It has been estimated that the domestic water use accounts for less than 15 percent of the water used in Nevada, but this is expected to rise to nearly 25 percent as the population increases (based upon existing water use patterns and conservation measures). It is expected that Nevada's population will become increasingly concentrated in its primary urban areas of Las Vegas (Clark County), Reno/Sparks (Washoe County) and Carson City, with varied spillover effects on neighboring counties.

It is vitally important that all residents understand the fundamental science of water, how it is managed in the state, and the issues affecting its management. Water education must become a priority and must include education of children as they are our future.

Because Nevada does not have a comprehensive state-wide conservation program, it is reliant upon the individual water suppliers for developing their own conservation programs. In 1991,

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Nevada enacted a law requiring adoption of conservations plans by water suppliers. Minimum standards for plumbing fixtures were adopted in 1991 (Assembly Bill 359) by Nevada and in 1992 minimum flow standards for plumbing fixtures were adopted by the federal government (National Energy and Policy Conservation Act).

Conservation is an essential part of ensuring adequate water supply as it is no longer feasible to develop new sources. It has proven to be a cost-effective way to reduce demands and/or to extend a given water supply. It can easily be pursued by all water users regardless of the water system type. Key to evaluating the program's effectiveness is the water use measurement (through meters and other measurement devices). Various conservation measures can be put into place and the achievement of the goals set with these measures is vital to combating the expected increase in water usage.

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Statutory Requirements

This water conservation plan was prepared for **Elk Point Country Club** in accordance with Nevada Revised Statute (NRS) 540. As outlined in NRS 540.141, the provisions of this plan must include:

- a. Public Education
- b. Conservation Measures
- c. Water Management
- d. Contingency Plan
- e. Schedule
- f. Evaluation Measurements
- g. Conservation Estimates

In addition to the provisions of the water conservation plan, listed above, NRS 540.141 also requires a rate analysis to be performed and included with the submittal.

This plan is being submitted to the Nevada Department of Conservation and Natural Resources (DCNR), Division of Water Resources (DWR) for review and approval prior to its adoption by **Elk Point Country Club** as required by NRS 540.131.

This plan is available for inspection during normal business hours at **462 Center St, Elk Point Country Club, NV, 89448**.

The original Water Conservation Plan for **Elk Point Country Club** was developed on **March 12, 2014** and is the first water conservation plan.

In accordance with NRS 540.131, this plan will be reviewed from time-to-time to reflect changes and must be updated every five (5) years to comply with NRS 540.131 and NRS 540.141. The next update of this plan is to be on, or before, **March 12, 2019**.

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System Description

Elk Point Country Club is a privately owned water system and has a current water operation permit, NV0000271 **Elk Point Country Club** serves water to 87 service connections, 6 of which are permanent residential customers, and 81 of which are connections to vacation homes in its service area in **Zephyr Cove**, which is located in **Douglas County**. The service area boundaries are **Elk Point Ave and Lakeview, within Elk Point Country Club** and covers approximately **12 acres**. The service area's terrain is **hilly, sloping to Lake Tahoe**.

The estimated population served in 2013 was a hundred customers. **Elk Point Country Club** estimates that its customer base will not increase in the coming years due to complete build out within the country club.

The water supply is from groundwater well sources, which is located within the **Lake Tahoe Basin**, in the Truckee River Region Basin. There are a total of **2 groundwater wells** supplying the system and one 265,000 gallon storage tank. Each of these is identified in the tables below (Table 1 and Table 2). **Prior to entry into the system and the storage tank, the water is treated for Uranium removal at the systems water treatment plant.**

Table 1 – Source of Supply

Well No.	Depth (feet)	Production (gpm)
1	155 ft.	150 gpm
2	50 ft.	150 gpm

Table 2 – Storage Tanks

Tank No.	Volume (gallons)
1	265,000 gallons

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Elk Point Country Club has been granted water rights in the total amount of **89.966 AF** per year from the groundwater sources and 55 AF per year from surface water. The current water rights are listed in the table below (Table 3).

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Table 3 – Water Rights

Permit No.	Well No. & Name	Rate of Diversion (max, CFS)	Annual Use (MGA)
5546	Well #1	.75	*6MGA
6211	Well #2	.25	

*Wells 1 & 2 operate simultaneously and flow through a single flow meter; however, it is possible to operate each of the groundwater wells independently of each other.

Water is **pumped from the groundwater wells**; water is then treated through the systems water treatment plant for Uranium removal, then pumped to the 265,000 gallon storage tank, and then distributed to the customers through **8” C900 water mains and 1” and ¾” service lateral connections made out plastic and galvanized pipe.**

Elk Point Country Club requires, at a minimum, a **Grade 1 Water Distribution and Grade 1 Water Treatment** operator.

The plant operator is required to perform **daily, weekly, monthly, and annual** monitoring and testing of water quality. **Elk Point Country Club does not** currently have any outstanding water quality issues.

The last sanitary survey performed by the Nevada Department of Environmental Protection (NDEP) was completed in December 2013 and shows **zero** deficiencies with the system.

Residential customers are billed annually through there homeowners association dues for the operation and maintenance of the system.

Wastewater collected from the service area is handled by Douglas County

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Plan Provisions

In accordance with NRS 540.131, this plan will be reviewed from time-to-time to reflect changes and must be updated every five (5) years to comply with NRS 540.131 and NRS 540.141. The next update of this plan is to be on, or before, **March 12, 2019.**

Elk Point Country Club will appoint a staff member to oversee the conservation efforts and this staff member will be responsible for implementation of conservation programs, monitoring of water use, and will review /revise the conservation plan when needed.

In an effort to promote voluntary conservation and aid in Nevada's future, **Elk Point Country Club** will enact the voluntary conservation measures found in the *Conservation Measures* section. When more stringent measures are needed, **Elk Point Country Club** will enact the measures found in the *Contingency Measures* section. All measures can be found in Appendix A.

As required by NRS 540.141, the water conservation plan must include the following provisions:

- a. Public Education
- b. Conservation Measures
- c. Water Management
- d. Contingency Plan
- e. Schedule
- f. Evaluation Measures
- g. Conservation Estimates

Each provision is discussed below.

Public Education

Public education is a key for cooperation with conservation efforts, so funding for public education is crucial. **Elk Point Country Club** recognizes this and **will** establish a conservation education program and corresponding budget

It is the goal of **Elk Point Country Club** to increase public awareness to conserve water, encourage reduction in lawn sizes, encourage the use of climate-appropriate plants, encourage the use of drip irrigation, and encourage conscious decisions for water use.

The conservation education program includes education materials such as bill inserts, pamphlets, flyers, and posters. New customers will be provided these materials when service is established, while existing customers will receive these materials periodically through bill inserts or direct mail. Educational pamphlets will be provided to all customers upon request and should include

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an explanation of all costs involved in supplying drinking water and demonstrate how the water conservation practices will provide water users with long-term savings. Education materials should also encourage reduction of lawn sizes, use of drip irrigation, use of climate-appropriate plants, and conservation tips and techniques (see Appendix B).

Further educational information may be obtained at the Douglas County website:
www.douglascountynv.gov/documentcenter.

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Conservation Measures

In an effort to promote conservation and voluntarily conserve water, **Elk Point Country Club** is adopting water-use regulations to promote water conservation during non-emergency situations. These regulations include the following non-essential water use:

- 1) Use of water through any connection when **Elk Point Country Club** has notified the customer in writing to repair a broken or defective plumbing, sprinkler, watering or irrigation system and the customer has failed to make such repairs within 5 days after receipt of such notice.
- 2) Use of water which results in flooding or run-off in gutters, waterways, patios, driveway, or streets.
- 3) Use of water for washing aircraft, cars, buses, boats, trailers or other vehicles without a positive shut-off nozzle on the outlet end of the hose.
- 4) Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off or waste.
- 5) Use of water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
- 6) Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
- 7) Use of water for more than minimal landscaping in connection with any new construction.
- 8) Use of water for watering outside plants and turf areas using a hand-held hose without a positive shut-off valve.

In the event these conservation measures are insufficient to control the water shortage, **Elk Point Country Club** may wish to implement the mandatory measures discussed in the *Contingency Plan* section below.

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In the event these conservation measures are insufficient to control the water shortage, **Elk Point Country Club** may wish to implement the mandatory measures discussed in the *Contingency Plan* section below.

Elk Point Country Club also promotes the development of water conserving principles into the planning, development, and management of new landscape projects such as public parks, building grounds, and golf course. Customers are encouraged to consult with the local nursery or perform an internet search on the availability of water conservation plants and how to renovate existing landscapes. Customers are also encouraged to evaluate irrigation management systems using metering, timing, and water sensing devices.

At present, it is not viable to offer any water conservation incentives.

Water Management

Elk Point Country Club monitors its water levels at its tank sites daily.

Working relationships with other local water purveyors are maintained to ensure adequate water supplies are available.

Elk Point Country Club actively monitors unaccounted for water losses daily, weekly, monthly, quarterly, and annually. Production versus daily, weekly, monthly, quarterly, and annual historical comparisons allows the determination of unaccounted for water losses. Current-to-historical comparisons are examined and evaluation methods are examined to locate leaks, if significant differences are found. **Elk Point Country Club** does not monitor unaccounted for water losses through water meters because customers are not metered and there is no comparison to be made between production and customer usage. The **Elk Point Country Club** does not plan to install individual water meters on each of its customers to allow it to monitor production versus usage figures.

Elk Point Country Club does not have a formal leak detection program. **However if daily monitoring of the system, a water leak detection investigation will be conducted.** All large leaks are repaired immediately and small leaks (less than 1 gallon per minute) are repaired within a reasonable time frame.

Elk Point Country Club has a formal well head protection program where both are located within secured wellhouses, properly vented and screened, with little or no possible entry points to the well heads.

If the well production meter is not registering, then the well production meter will be replaced.

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A capital improvement plan is in place, is currently being funded through homeowner association dues, and there are plans to replace distribution lines at their anticipated useful life.

Elk Point Country Club does not have a system for reusing of effluent.

Douglas County has adopted a Plumbing Water Conservation Ordinance which applies to structures which are renovated as well as all new construction. This ordinance is furnished to local suppliers and contractors. The **Douglas County Building Dept.** checks new construction, renovation, and expansions within Douglas County to ensure compliance with this ordinance.

Contingency Plan

The objective of the contingency plan would be to manage the available resources to ensure continued supply of potable water during periods of drought or extended drought.

It is envisioned that voluntary conservation will be sufficient to ensure an adequate supply of water and reduce water usage. However, if a sustained drought (lack of precipitation) is encountered, it may be necessary to implement mandatory restrictions in order to ensure an adequate supply of water to meet essential needs.

Elk Point Country Club plans for drought response would be three (3) stages of drought response: (1) warning stage, (2) alert stage, and (3) emergency stage. The stages are describes as follows:

In Stage 1, the warning stage, **Elk Point Country Club** would increase monitoring of its water supplies and would begin creating public awareness of the water supply situation and the need to conserve. Conservation measures at this stage would be voluntary. Retrofit kits (low-flow faucet aerators, low-flow showerheads, leak detection tables, and replacement flapper valves) can be made available, or at cost, and can be actively distributed, if needed.

In Stage 2, the alert stage, **Elk Point Country Club** would call for wide-based community support to achieve conservation, limit the use of fire hydrants to fire protection uses (by requiring effluent for construction and dust control purposes), implement water use restrictions, and impose penalties for ignoring the restrictions. Conservation measures at this stage would be mandatory and violations would incur fines.

In Stage 3, the emergency stage, **Elk Point Country Club** would declare a drought and water shortage emergency, would enforce water use restrictions, impose fines for violations, and impose higher fees for water usage. Media relations would be activated in order to inform the customers and monetary assistance may need to be secured in an effort to mitigate the effects of the drought (e.g. federal funding assistance). Conservation measures at this stage would be mandatory, violations would incur fines, and over-use would be penalized by higher rates.

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When a drought is declared over, voluntary conservation measures (see *Conservation Measures* section) will be reinstated and water supplies would continue to be monitored.

Schedule

All of the provisions listed **are not** currently in place; however through adoption and approval of the water conservation plan, Elk Point Country Club is actively working to achieve conservation results/

Evaluation Measurements

Because individual customers are not currently metered, it is impossible to determine the effectiveness of each plan element on an individual customer basis. However, **Elk Point Country Club** can evaluate the effectiveness of each plan element from the perspective of the whole system. In that regard, as a plan element is activated (e.g. mailing literature or declaring a drought stage), production figures will be compared to same-month historical data to estimate the plan element's effectiveness. This information will be utilized as a basis for any future water conservation plan revision and plan elements.

If there is a decrease in production as a result of a particular measure/incentive, that measure/incentive can be expanded or improved upon, if possible. If it is discovered that a particular measure/incentive is ineffective, it will be discontinued and a new one can then be implemented to take its place.

As a plan element is activated (e.g. mailing literature or declaring a drought stage), production figures will be compared to same-month historical data to estimate the plan element's effectiveness. This information will be utilized as a basis for any future water conservation plan revision and plan elements.

Usage amounts measured will include summer use, average use per connection, and per capita use. If there is a decrease in usage as a result of a particular measure/incentive, that measure/incentive can be expanded or improved upon, if possible. If it is discovered that a particular measure/incentive is ineffective, it will be discontinued and a new one can then be implemented to take its place.

In addition to changes resulting from audits, updates, and modifications to conservation measures/incentives there will be changes made to meet changing conditions (e.g. customer growth and demand, changing use, new technologies, etc.).

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Conservation Estimates

During the Stage 1 phase of the conservation plan, it is estimated that conservation measures could be expected to provide a **10-20 %** reduction in water use.

During the Stage 2 phase of the conservation plan, it is estimated that conservation measures could be expected to provide a **10-20 %** reduction in water use.

During the Stage 3 phase of the conservation plan, it is estimated that conservation measures could be expected to provide a **15-30%** reduction in water use.

The estimated water savings for various end-user efforts can be found in Appendix C.

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Appendices

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**APPENDIX A
CONSERVATION MEASURES**

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Stage 1 – Warning Stage

1. **Elk Point Country Club** would increase monitoring of water supplies.
2. **Elk Point Country Club** would begin creating public awareness of the water supply situation and the need to conserve.
3. **Elk Point Country Club** would inform customers of voluntary conservation measures (non-essential water uses, listed below).
4. **Elk Point Country Club** would provide customers with retrofit kits either at cost or free.

Non-essential water uses are:

- 1) Use of water through any connection when **Elk Point Country Club** has notified the customer in writing to repair a broken or defective plumbing, sprinkler, watering or irrigation system and the customer has failed to make such repairs within 5 days after receipt of such notice.
- 2) Use of water which results in flooding or run-off in gutters, waterways, patios, driveway, or streets.
- 3) Use of water for washing aircraft, cars, buses, boats, trailers or other vehicles without a positive shut-off nozzle on the outlet end of the hose.
- 4) Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off or waste.
- 5) Use of water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
- 6) Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
- 7) Use of water for more than minimal landscaping in connection with any new construction.
- 8) Use of water for watering outside plants and turf areas using a hand-held hose without a positive shut-off valve.

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Stage 2 – Alert Stage

1. **Elk Point Country Club** would set conservation goals and call for wide-based community support to achieve those goals.
2. **Elk Point Country Club** would inform customers of mandatory conservation measures (non-essential water uses, listed in Stage 1 are now mandatory).
3. **Elk Point Country Club** would inform customers of penalties if mandatory conservation measures are not observed (penalties are listed below).
4. **Elk Point Country Club** would inform customers of mandatory conservation water fees.
5. **Elk Point Country Club** limit the use of fire hydrants to fire protection uses only.
6. **Elk Point Country Club** would provide customers with retrofit kits either at cost or free.

Penalties for violation of mandatory conservation measures are:

- 1st violation – written warning.
- 2nd violation – **\$To be established by Board of Directors**
- 3rd violation – **\$ To be established by Board of Directors**
- 4th violation – turn-off of water services.

Offenses for separate water use restriction violations will each start at the warning stage (1st violation) and the penalties for the offenses are in addition to the regular rate schedule charges.

Stage 2 water rates would include an additional monthly water usage fee of **\$[[To be established by Board of Directors]]**, or other such fee as deemed necessary.

A flow restrictor can be installed if the customer is non-responsive after the 1st violation. The flow restrictor shall not restrict water delivery by greater than 50% of normal flow. The flow restrictor may be removed only by the utility, only after a **To be established by Board of Directors** -day period has elapsed and only upon payment of the appropriate removal charge of:

Connection Size

Removal Charge

3/4-inch to 1-inch

\$[To be established by Board of Directors]]

If, after the removal of the flow restrictor, any non-essential or unauthorized use of water shall continue, another flow restrictor may be installed and shall remain in place until water supply conditions warrant its removal and the appropriate charge for removal has been paid.

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Stage 3 – Emergency Stage

1. **Elk Point Country Club** would declare a drought and water shortage emergency and use media relations to supplement efforts to keep customers informed.
2. **Elk Point Country Club** would set rationing benchmarks for each customer class.
3. **Elk Point Country Club** would inform customers of prohibited water uses (non-essential water uses, listed in Stage 1 are now prohibited).
4. **Elk Point Country Club** would inform customers of penalties if prohibited measures are not observed (penalties are listed below).
5. **Elk Point Country Club** would inform customers of rationing water fees.
6. **Elk Point Country Club** would limit the use of fire hydrants to fire protection uses only.
7. **Elk Point Country Club** would provide customers with retrofit kits either at cost or free.
8. **Elk Point Country Club** would seek monetary assistance in an effort to mitigate the drought (e.g. federal funding).

Penalties for violation of prohibited water use measures are:

1st violation – written warning.

2nd violation – \$[[To be established by Board of Directors]]

3rd violation – turn-off of water services.

Offenses for separate water use restriction violations will each start at the warning stage (1st violation) and the penalties for the offenses are in addition to the regular rate schedule charges.

Connection Size

Removal Charge

3/4-inch to 1-inch

\$[[To be established by Board of Directors]]

If, after the removal of the flow restrictor, any non-essential or unauthorized use of water shall continue, another flow restrictor may be installed and shall remain in place until water supply conditions warrant its removal and the appropriate charge for removal has been paid.

If any customer seeks a variance from the provisions of Stage 3, then that customer shall notify **Elk Point Country Club** in writing, explaining in detail the reason for such a variation. **Elk Point Country Club** shall respond to each request.

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**APPENDIX B
PUBLIC EDUCATION MATERIALS**

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There are several publications available for use at U.S. EPA website for general distribution (currently located at <http://epa.gov/watersense/pubs/index.htm#ideas>). These publications include such topics as:

- Simple Steps to Save Water,
- Ideas for Residences,
- Ideas for Commercial,
- Using Water Wisely In the Home,
- Outdoor Water Use in the US,
- Toilet Flush Facts,
- Watering Can Be Efficient,
- Irrigation Timers for the Homeowner, and
- Water Efficient Landscaping,

These publications can be utilized until **Elk Point Country Club** develops system-specific publications.

There are also numerous website that provide tips for conserving water. One of these is: <http://www.wateruseitwisely.com/100-ways-to-conserve/index.php>. Customers can be directed to this website for tips to conserve water.

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Specific tips for landscaping that can be provided to the customers are listed below. During drought conditions outdoor watering restrictions may be imposed, and therefore some of the following tips will not apply.

Tips for Landscaping

Watering:

- Detect and repair all leaks in irrigation systems.
- Use properly treated wastewater for irrigation where available.
- Water the lawn or garden during the coolest part of the day (early morning is best). Do not water on windy days.
- Water trees and shrubs, which have deep root systems, longer and less frequently than shallow-rooted plants which require smaller amounts of water more often. Check with the local nursery for advice on the amount and frequency of watering needed in your area.
- Set sprinklers to water the lawn or garden only—not the street or sidewalk.
- Use soaker hoses and trickle irrigation systems.
- Install moisture sensors on sprinkler systems.

Planting:

- Have your soil tested for nutrient content and add organic matter if needed. Good soil absorbs and retains water better.
- Minimize turf areas and use native grasses.
- Use native plants in your landscape—they require less care and water than ornamental varieties.
- Add compost or peat moss to soil to improve its water-holding capacity.

Maintaining:

- Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and cut down on weed growth.
- Remove thatch and aerate turf to encourage movement of water to the root zone.
- Raise your lawn mower cutting height to cut grass no shorter than three inches—longer grass blades encourages deeper roots, help shade soil, cut down on evaporation, and inhibit weed growth.
- Minimize or eliminate fertilizing which requires additional watering, and promotes new growth which will also need additional watering.

Ornamental Water Features:

- Do not install or use ornamental water features unless they recycle the water. Use signs to indicate that water is recycled. Do not operate during a drought.

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APPENDIX C
END-USER WATER SAVINGS

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Here are just a few of the end-user water savings that could be realized:

Leaky Faucets

Issue: Leaky faucets that drip at the rate of one drip per second can waste more than 3,000 gallons of water each year.

Fix: If you're unsure whether you have a leak, read your water meter before and after a two-hour period when no water is being used. If the meter does not read exactly the same, you probably have a leak.

Leaky Toilets

Issue: A leaky toilet can waste about 200 gallons of water every day.

Fix: To tell if your toilet has a leak, place a drop of food coloring in the tank; if the color shows in the bowl without flushing, you have a leak.

Showering

Issue: A full bath tub requires about 70 gallons of water, while taking a five-minute shower uses 10 to 25 gallons.

Fix: If you take a bath, stopper the drain immediately and adjust the temperature as you fill the tub.

Brushing Teeth Wisely

Issue: The average bathroom faucet flows at a rate of two gallons per minute.

Fix: Turning off the tap while brushing your teeth in the morning and at bedtime can save up to 8 gallons of water per day, which equals 240 gallons a month!

Watering Wisely

Issue: The typical single-family suburban household uses at least 30 percent of their water outdoors for irrigation. Some experts estimate that more than 50 percent of landscape water use goes to waste due to evaporation or runoff caused by overwatering.

Fix: Drip irrigation systems use between 20 to 50 percent less water than conventional in-ground sprinkler systems. They are also much more efficient than conventional sprinklers because no water is lost to wind, runoff, and evaporation. If the in-ground system uses 100,000 gallons annually, you could potentially save more than 200,000 gallons over the lifetime of a drip irrigation system should you choose to install it. That adds up to savings of at least \$1,150!

Washing Wisely

Issue: The average washing machine uses about 41 gallons of water per load.

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Fix: High-efficiency washing machines use less than 28 gallons of water per load. To achieve even greater savings, wash only full loads of laundry or use the appropriate load size selection on the washing machine.

Flushing Wisely

Issue: If your toilet is from 1992 or earlier, you probably have an inefficient model that uses at least 3.5 gallons per flush.

Fix: New and improved high-efficiency models use less than 1.3 gallons per flush—that's at least 60 percent less than their older, less efficient counterparts. Compared to a 3.5 gallons per flush toilet, a WaterSense labeled toilet could save a family of four more than \$90 annually on their water bill, and \$2,000 over the lifetime of the toilet.

Dish Washing Wisely

Issue: Running dishwasher partial full and pre-rinsing dishes before loading the dishwasher.

Fix: Run the dishwasher only when it's full and use the rinse-and-hold dishwasher feature until you're ready to run a full load. Pre-rinsing dishes does not improve cleaning and skipping this step can save you as much as 20 gallons per load, or 6,500 gallons per year. New water-saver dishwashers use only about 4 gallons per wash.

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Elk Point Country Club Water System Conservation Plan

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Estimated water savings from EPA Water Conservation Guidelines 1998 (Appendix B, Table B-1):

Type	Estimated Usage (gpcpd)	Conservation Usage (gpcpd)	Savings (gpcpd)	Savings (%)
Toilet	18.3	10.4	7.9	43 %
Clothes Washers	14.9	10.5	4.4	30 %
Showers	12.2	10.0	2.2	18 %
Faucets	10.3	10.0	.3	3 %
Leaks	6.6	1.5	5.1	77 %

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Benchmarks from selected conservation measures from EPA Water Conservation Guidelines 1998 (Appendix B, Table B-4):

Category	Measure	Reduction of End Use (% or gpcpd)
Universal metering	Connection metering	20 %
	Sub metering	20 – 40 %
Costing and pricing	10% increase in residential prices	2 – 4 %
	10% increase in non-residential prices	5 – 8 %
	Increasing-block rate	5 %
Information and education	Public education and behavior changes	2 – 5 %
End-use audits	General industrial water conservation	10 – 20 %
	Outdoor residential use	5 – 10 %
	Large landscape water audit	10 – 20 %
Retrofits	Toilet tank displacement devices (for toilets using > 3.5 gallons/flush)	2 – 3 gpcpd
	Toilet retrofit	8 – 14 gpcpd
	Showerhead retrofit (aerator)	4 gpcpd
	Faucet retrofit (aerator)	5 gpcpd
	Fixture leak repair	0.5 gpcpd
	Governmental building (indoors)	5 %
Pressure management	Pressure reduction, system	3 – 6 % of total production
	Pressure-reducing valves, residential	5 – 30%
Outdoor water use efficiency	Low water-use plants	7.5 %
	Lawn watering guides	15 – 20 %
	Large landscape management	10 – 25%
	Irrigation timer	10 gpcpd
Replacements and promotions	Toilet replacement, residential	16 – 20 gpcpd
	Toilet replacement, commercial	16 – 20 gpcpd
	Showerhead replacement	8.1 gpcpd
	Faucet replacement	6.4 gpcpd
	Clothes washers, residential	4 – 12 gpcpd
	Dishwashers, residential	1 gpcpd
	Hot water demand units	10 gpcpd
Water-use regulation	Landscape requirements for new developments	10 – 20 % in sector
	Greywater reuse, residential	20 – 30 gpcpd