

**CARSON RIVER ESTATES
HOMEOWNERS ASSOCIATION
WATER CONSERVATION PLAN**



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Carson River Estates Homeowners Association
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This water conservation plan is submitted by Carson River Estates Homeowners Association (CREHA). The purpose of the water conservation plan is to continue to encourage a more efficient use of water by CREHO homeowners and comply with Nevada Revised Statutes 540.121 through 540.151.

NRS 540.121

Carson River Estates Water System is owned and operated by Carson River Estates Homeowners Association, a non-profit corporation registered with the state of Nevada. The water system supplies water to the residents of Carson River Estates, a subdivision one mile north of the city of Fallon.

The water system consists of three wells, one hydro-pneumatic tank, one fire hydrant, and approximately one mile of pipes and a system of six isolation valves of various sizes. The wells and service connections are metered. There are thirty-four service connections with two lots empty that could eventually require a connection.

The three wells are identified as Wells #1, #2, and #3. A pump house with the controls for the system is located at the same site as Well #1. Wells 1 and 2 each pump at a rate of thirty-nine gallons per minute. Well 3 pumps at a rate of forty-seven gallons per minute. All three wells pump to a two thousand gallon, horizontally mounted, hydro-pneumatic water storage tank located inside the pump house.

There is a propane-powered generator that automatically starts when there is a power loss, providing power to the pumps.

Currently the water system services approximately 77 people. This number could fluctuate slightly depending on families buying or selling their homes. There are only two lots left in the subdivision that are empty, so any kind of large growth is impossible.

Carson River Estates Homeowners Association is working with the State of Nevada to meet the current safe drinking standards. It is expected that this will be accomplished within the next year or two.

The primary water conservation goals for CREHA are listed below. These goals involve ongoing efforts that will improve the abilities of CREHA to manage available water and reduce the amount of water waste.

- CREHA will increase public awareness of the limited supply of water in Nevada and the need to conserve water.
- CREHA will send out water conservation tips and updates to members via email.
- CREHA will encourage the reduction in lawn sizes for those homeowners with lawns.
- CREHA will attempt to reduce water waste and reduce consumption by 5% by the year 2014.

- CREHA will continue to maintain accurate water pumping and usage records in order to identify and reduce water leakages and inaccuracies in the water system (distribution lines, water meters, etc.)
- CREHA will continue to discourage the “wasting of water,”
- CREHA has just updated its emergency response plan, including a drought plan and a current list of emergency contact information, equipment available for emergencies, etc.
- CREHA will periodically review and evaluate water conservation measures and incentives for effectiveness and determine if revisions or continuations to the programs will be made.
- All connections now in the CREHA service area are currently on water meters. Meters will be changed out on a scheduled basis.
- CREHA just began a three-tiered pricing structure for water to encourage water conservation. This will be monitored for effectiveness. Increases will be made if necessary.
- CREHA will update the water conservation plan every five years (as required by NRS 540.131.4.c.)

NRS 540.131

Each member of CREHA will be sent the Conservation Plan. Everyone will get the opportunity to submit written views and recommendations on the plan. CREHA will review all comments and make any revisions it deems necessary.

CREHA will keep this water conservation plan in the home of the president of the association or the home of the keeper of the records. Members of the association may view this plan after contacting the president or keeper of the records. Any comments they have are welcomed.

CREHA will update this water conservation plan at least every 5 years (in order to comply with State requirements). The next update to the plan will need to be completed in 2014.

This water conservation plan is intended solely for use within the CREHA service area boundaries and does not include a joint effort with any additional water suppliers.

Due to the small size of the system, CREHA does not currently have personnel, procedures, or finances in place to monitor water waste full time. Officers and workers are all volunteers. CREHA does not have the financial capability of hiring employees for the sole purpose of water conservation, so CREHA will continue educating homeowners in order for the conservation and drought sections in this plan to be effective.

NRS 540.141

A key objective of this plan is to increase public awareness of the limited supply of water in Nevada and the need to conserve water. A successful educational program provides information to the homeowners that help to motivate water users in their efforts to conserve water.

CREHA will provide its homeowners with educational materials and resources including home and landscape guides, mailers, and links to conservation websites. Example water conservation brochures and pamphlets will be sent via email, mail, or hand delivered to members of CREHA.

Water usage is much higher in the summer than in the winter. Of the 34 homes, six have no lawn, 4 have a small lawn in the front yard with none in back, and several have minimal lawn. Of those who do have front and back lawns, CREHA will encourage the reduction of the size of lawns and encourage the use of Xeriscaping methods and drought tolerant/native plants.

Homeowners will be reminded and encouraged to use water saving devices in their homes such as low flow toilets and shower heads, water efficient clothes and dish washers, etc.

CREHA instituted a meter-update program this year, starting with the replacement of the oldest meters. CREHA hopes that none of the meters is older than five years once this program is completed and which will then be ongoing.

CREHA compares water meter readings from the three wells to the amount of water billed to its homeowners. Currently the difference between non-billable water and pumped water is less than 8%, but because two customers water meters were non-operable and could not be read, it is believed the actual percentage is lower.

Each CREHA home site has its own septic system, so use of recycled wastewater is not a consideration. Increasing the reuse of effluent is not applicable unless individual homeowners choose to reroute gray water waste outdoors to plants and lawn.

CREHA will continue to monitor for any signs of high pressure in the system. Because of the design of the system with the three low pressure pumps set at different levels, and the 2000 gallon hydro-pneumatic water storage tank this has not been a problem.

CREHA updated its Emergency Response Plan in 2009 which included a short contingency plan for drought conditions. This plan is expanded here. All water supplied by CREHA comes from fairly deep 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.

In extreme instances, where a well can no longer provide the needed water, CREHA will consider options such as restricting water usage until the problem can be solved, increasing the depth of the existing wells, developing a new well site, and/or aggressively finding a new water source, etc.

NRS 540.151

Conservation education in CREHA has been ongoing. There have been reminders at homeowners' meetings, and newsletters and emails have been sent throughout the year. Schedules for watering, even numbered houses on even day, etc. have been in place. This will become more rigorous and more detailed information and directives will continue to be sent to homeowners.

CREHA will assess the effectiveness of its plan once it has gone through another summer cycle. It will compare the total usage of water with the previous year's to see if less water was used and determine if the plan is working.

By implementing the steps described in this plan CREHA anticipates some savings of water. An amount based solely on the education of the homeowners is difficult to estimate because of variables out of our control such as different numbers of family members at the houses at one time, etc.

During the winter months, water usage is normal in most households. The summer irrigation season is where the savings in water will become the most obvious. Some homeowners use no water for irrigation or very little while some use way too much. Because CREHA is such a small water system, just the change in one or two homeowners' usage patterns during the summer would make a big difference.

Conservation can be achieved through an increase in the homeowners becoming further educated and continually reminded of the value of conserving water. It's very difficult to determine the level of individual participation in educational conservation programs but an estimate of a savings of 1 gpcpd for about 80 people would result in a savings of 29,200 gallons per year.

A reduction in water usage of just 5% in the 10 houses with the highest summer usage would result in a yearly savings of 242,000 gallons. CREHA will concentrate on this area of education.

Using these figures, CREHA estimates that between 3 and 10 gallons per capita per day could be saved depending on consumer participation.

CREHA instituted a plan to charge variable rates which took effect June 2009. The plan is as follows:

Monthly Assessment: This fiscal year \$30 of each \$55 monthly bill is the Carson River Estates assessment. Everyone pays this regardless of water usage. In FY2010, \$7.50 is being set aside from each payment to put in the reserve fund. The remaining \$22.50 is

used for water system operating expenses or other services required to support the water system.

Water Charges: Each homeowner is charged \$.0008 per gallon of water used under 400,000 gallons, each homeowner is charged \$.001 per gallon for water used between 400,000 gallon and 600,000, and each homeowner is charged \$.0015 per gallon of water used over 600,000 gallons.

There is a possibility that CREHA may be hooked up the Churchill County Water System. If this happens, the rate structure will increase by double or triple. If CREHA is not hooked up to the county, the rate structure will continue to increase in order to keep up with maintenance and operating costs as well as enlarging the Reserve Fund.

CREHA expects that any increase in water usage rates will result in conservation measures taking place. There was a slight decrease in usage during the 2008-2009 fiscal year as the homeowners were aware that the price would increase. Billable water delivery dropped from a four-year average of 12,757, 072 gallons to 10,600,670 gallons. This may not be indicative of any future water savings based on tiered pricing.

SUMMARY

CREHA is strongly committed to water conservation. It will continue to educate its homeowners and encourage water savings, especially during the summer irrigation season with more drought tolerant plants, reduction of lawn areas, and more xeriscaping.