

# **Old River Water Company Water Conservation Plan**

Old River Water Company  
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This water conservation plan is submitted by Old River Water Company (ORWC). The purpose of the water conservation plan is to continue to encourage a more efficient use of water by ORWC homeowners and comply with Nevada Revised Statutes 540.121 through 540.151.

ORWC has no plans for new development in the near future. The current configuration would need to be significantly enhanced to support any more connections outside of the existing lots to provide the current level of service efficiency.

Watering restrictions, ie. limiting by day or time of day, will be used if serious drought conditions are encountered.

### **NRS 540.121**

ORWC is a non-profit corporation registered with the state of Nevada. The water system supplies water to the residents of two subdivisions, one off Rice Road and the other off Wade Lane, both just north of the city of Fallon.

ORWC owns and operates a community groundwater system using two wells. The raw water is obtained via 2 (two) wells on the property located at approximately 1250 Rice Road. Well #3 has 3 (three) submersible pumps of varying HP and GPM ratings, Well #2 has two (two) submersible pumps of varying HP and GPM ratings. These 5 (five) pumps are individually supplied electrical power via individual control panels. The pumps on/off cycles are controlled by pressure switches. Each pump can be segregated or integrated from/into the system electrically by control panels and mechanically by valves within the manifold piping system. Pumps are engaged when water pressure drops to approximately 48 PSI and disengage at approximately 68-70 PSI; two pumps are always engaged electrically and mechanically in case of a single pump failure. All 5 (five) pumps have an integrated 40 (forty) micron sand strainer in line prior to water entry into expansion tank.

There are currently no provisions for emergency power or back-up water supply.

The manifold system supplies water to a 2500 gallon air over water expansion tank which assists in maintaining system pressure head and holds water temporarily until needed within the delivery system. The system splits via valves after the expansion tank to the 2 (two) neighborhoods supplied.

The delivery system is entirely composed of NSF 61 approved schedule forty (SCH40) Poly-Vinyl Chloride (PVC) piping in six (6"), four (4"), two (2") inch mains and three-quarter (3/4") inch service connector piping. All customer connections are metered by 5/8"-3/4" compound, displacement type meters of varying manufacturer and materials. All meters installed or exchanged since 2010 are of plastic construction. As meters are exchanged in the future, only plastic meters will be used to avoid possible metallic contamination IAW future legislative and regulatory requirements. Meters are read manually. Segregation valves within the system are gate valves of bronze construction.

Old River Water Company is a member of the Churchill/Fallon Volunteer Fire Department, in that, the Fire Department has permission to draw water in an emergency to refill their pumper or mule trucks as required. A spud is installed in the outgoing manifold for their use. Members of the Department have been trained on the procedures for drawing this water without causing a cross-connect contamination.

Currently the water system services 109 houses. This number could fluctuate slightly depending on families buying or selling homes and temporary vacancies.

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

- ORWC will increase public awareness of the limited supply of water in Nevada and the need to conserve water.
- ORWC will provide water conservation tips and updates to members via its website.
- ORWC will encourage the reduction in lawn sizes for those homeowners with lawns.
- ORWC 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.)
- ORWC will continue to discourage the “wasting of water,”
- ORWC has updated its emergency response plan, including a current list of emergency contact information, equipment available for emergencies, etc.
- ORWC will periodically review and evaluate water conservation measures and incentives for effectiveness and determine if revisions or continuations to the programs need to be made.
- All connections now in the ORWC service area are currently on water meters. Meters are read quarterly and changed out as needed.
- ORWC has a three-tiered pricing structure for water to encourage water conservation. This will be monitored for effectiveness. Increases will be made if necessary.
- ORWC will update the water conservation plan every five years (as required by NRS 540.131.4.c.)

### **NRS 540.131**

The draft Water Conservation Plan will be placed for comment on the ORWC website and will be available in the office. Each customer of ORWC will get the opportunity to submit written views and recommendations on the plan. ORWC will review all comments and make any revisions it deems necessary.

ORWC 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 service area may view this plan after contacting the president or keeper of the records. Pertinent comments are welcomed.

ORWC will update this water conservation plan at least every five years (in order to comply with

State requirements). The next update to the plan will need to be completed in 2024.

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

Due to the small size of the system, ORWC does not currently have personnel, procedures, or finances in place to monitor water waste full time. Officers and workers are all volunteers except for the Watermaster and a general employee, both are part-time. ORWC does not have the financial capability of hiring employees for the sole purpose of water conservation, so ORWC 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.

ORWC will continue to provide its homeowners with educational materials and resources including home and landscape guides, mailers, and links to conservation websites. Water conservation information are sent via mail, email or hand delivered to members of ORWC.

Water usage is much higher in the summer than in the winter. Of the 109 homes most have minimal lawn. Of those who do have front and back lawns, ORWC will encourage the reduction of the size of lawns and encourage the use of 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.

ORWC compares water meter readings from the two wells to the amount of water billed to its members. In 2013, 30,834,000 gallons were pumped with 22,751,000 gallons billed. In 2018, 18,205,900 gallons were pumped with 16,917,428 gallons billed. This is significantly better since the back flushing of the sand filters has been changed to manual operation from continuous and conservation efforts appear to be working well. The company is still seeking to find the causes of the difference between pumped and billed. We have had help in searching for leaks from Rural Water experts and found none. Some of the loss happens when meters fail and are replaced. This is one area ORWC will seek to improve.

Each ORWC 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.

ORWC will continue to monitor for any signs of high pressure in the system. Because of the design of the system with the five pumps engaging at 48 psi and disengaging at 68-70 psi this has not been a problem. The 2500 gallon expansion tank also assists in maintaining proper system pressure.

All water supplied by ORWC 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, ORWC 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 ORWC has been ongoing. There have been reminders at annual meetings and some information on the website. This will become more rigorous and more detailed information and directives will continue to be sent to homeowners.

ORWC 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 to see if less water was used and determine if the plan is working. In 2013, 30,834,000 gallons were pumped with 22,751,000 gallons billed. In 2018, 18,205,900 gallons were pumped with 16,917,428 gallons billed. This is significantly better and conservation efforts appear to be working well.

By implementing the steps described in this plan ORWC 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, number of homes occupied and weather conditions.

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 ORWC 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 one gallon per person per day for about 250 people would result in a savings of 91,250 gallons per year.

ORWC rates are progressive to encourage conservation. The ORWC rates are as follows:

- 1) Basic minimum charge per quarter per occupied household --\$222.00 for 90,000 gallons [30,000 gallons/month] (Multi-Pure carbon filter).
  - This includes a \$36.00/per quarter charge for arsenic remediation (POU filter system).
  - If the homeowner has a reverse osmosis (RO) system, then the rate is \$186.00 per quarter for the same water usage.
- 2) If the customer exceeds 30,000 gallons/month, the ORWC adds an increase fee which is layered according to increased usage.

- For monthly usage between 30,000 to 35,000 gallons, the rate increase is \$2.00/1000 gallons
  - For monthly usage between 35,000 to 40,000 gallons, the rate increase is \$4.00/1000 gallons
  - For monthly usage above 40,000 gallons, the rate increases to \$8.00/1000 gallons
- 3) All homes are metered and are read quarterly and billed quarterly. The July 1<sup>st</sup> and January 1<sup>st</sup> readings are the “makeup” bills.

For example:

If your reading is 37,000 gallons per month between July and January your water bill would be calculated:

Basic quarterly charge for 180,000 gallons (with MultiPure system)	\$222.00
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Overage charge from January to July:

30,000 to 35,000 gallons	\$2.00/1000 x 5000 =	\$10.00
35,000 to 37,000 gallons	\$4.00/1000 x 2000 =	<u>\$ 8.00</u>
Total monthly overage charge:		\$18.00

Since this reading is over a six-month period, the overage is:

\$18.00 x 6 months = \$108.00

And the total 6 month bill is:

\$108.00 + \$222.00 = \$330

The current rate structure appears to be sufficient to keep up with maintenance and operating costs as well as slightly increasing the capital improvement funds. In the past rate structure increases have resulted in some decrease in usage. This may not be indicative of any future water savings based on tiered pricing.

Sometime in the future, there is a possibility that ORWC may be connected to the Churchill County Water System. If this happens, the rate structure will increase significantly.

## SUMMARY

ORWC 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 and reduction of lawn areas.