

The Common Sense Courier Newsletter

September 10, 2025

Vital Topic: New Ranchos Water Study Predicts Troubling Decline for the County's Aquifer.

"The results show declining groundwater levels under all scenarios, even if pumping rates and temperatures stay the same."

A new water study commissioned by the Gardnerville Ranchos General Improvement District (GRGID) shows that the aquifer under the Carson Valley will decline under current growth projections. The GRGID spent \$300,000 with hydrology consultants, Desert Research Institute, (DRI), in Reno, Nevada for the study. The GRGID spent an additional \$300,000 to drill a series of monitoring wells in order to validate well data. This is the most comprehensive water study ever done in the Valley.

In Carson Valley, groundwater is the most important premier water source that supports homes, businesses, and agriculture. Our aquifer is recharged by two rivers, the East Carson and the West Carson, and by runoff from the Pinenuts mountains and the Sierras. However, increased groundwater use over recent decades has led to lower groundwater levels across the valley, especially in the Gardnerville Ranchos area. These lower groundwater levels raise concerns about the long-term availability of groundwater and highlight the need for careful water resource planning.

The study developed a groundwater flow model to assess the future availability of groundwater resources in the Gardnerville Ranchos area of Carson Valley. The purpose of this model is to help the Gardnerville Ranchos General Improvement District (GRGID) evaluate the groundwater system response to population and temperature changes to inform water management decisions.

Using historical groundwater level and pumping data, and data from aquifer tests conducted during this study, the model was designed to:

- Explain how groundwater moves within the Gardnerville Ranchos area and the broader southern Carson Valley;
- Estimate future changes in groundwater levels under different climate and water demand scenarios; and
- Evaluate if the Gardnerville Ranchos well network can meet future water demands.

The model examined monthly groundwater conditions from 1965 to 2023 and projected future conditions from 2024 to 2043. The projections included scenarios with different rates of increased groundwater pumping (0.2% and 1.5% per year) and temperature (0.1°F and 0.2°F per year). These scenarios provide a range of potential future outcomes related to population growth and warmer temperatures.

Under the assumption over the next 20 years (2024 through 2043) that there is **no change** in average temperature and no change in water usage, the model predicts that there will be up to a 10-foot drop in the aquifer level. Under other assumptions of temperature and water usage over the next 20 years, the study tested two assumptions:

Assumption One (best case scenario): .2 to .4 degree Fahrenheit increase in annual temperature and a .2% annual increase in water usage, and

Assumption Two (worst case scenario): .2 to .4 degree Fahrenheit increase in annual temperature and a 1.5% annual increase in water usage.

Under Assumption One, the aquifer will drop 10.8 to 11.6 feet.

Under Assumption Two, the aquifer will drop 13 to 20 feet.

Changes over the last 20 years both valley-wide and in the Ranchos showed a decrease in the aquifer depth. *This discovery disputes the assumption that the annual recharge to the aquifer is less than the annual discharge.* Douglas County's aquifer is becoming depleted over time. And importantly, housing developments on the edges of the aquifer—in Fish Springs, Ruhenstroth, and Saratoga Springs—will experience the most serious challenges because the aquifer is at a shallower depth in these locations. Since the aquifer is the valley's only source for drinkable water, a decrease of water in the aquifer must limit our county's residential growth.

The key conclusions from these predictions are:

- 1) The aquifer is dropping across the valley under all scenarios;
- 2) Our 1996 master plan did not contemplate a drop in the aquifer over time when it determined sustainable residential growth levels; and
- 3) Our master plan zoning should be revised to match our aquifer depth limitations.

Importantly, Douglas County is required to develop a comprehensive water compliance plan as mandated by the State of Nevada by 2029. It is crucial that this Ranchos study be used as a blueprint to design and carry out a countywide study in order to guide growth responsibly in the Valley and comply with State requirements.

If you would like to review the complete study, you can find it here. [DRI Water Study](#)

About *The Common Sense Courier*

The Common Sense Courier newsletter is published monthly by the Common Sense Coalition, a 501(c)(3) educational nonprofit in Douglas County, Nevada. The Common Sense Coalition is a group of Douglas County Nevada residents who are interested in growth issues, water issues, prudent financial management of Douglas County, and the quality of our schools. We attend the monthly meetings of the Board of County Commissioners, the Planning Commission, and the School Board and create a free monthly newsletter that offers common sense insights on the key issues discussed at these meetings and how your elected representatives voted. Our goal is to provide useful information on important issues to an educated citizenry who is interested in the governance of our county. You can find out more at www.commonensedc.com