



Organizations for Rural Quality

of Nevada County

Western Nevada County Water

Western Nevada County is blessed with a large and diverse hydrologic system divided into the Yuba River and Bear River basins. These basins supply surface water for both consumptive and environmental purposes and are dependent on winter rain and snowfall. The Sierra snowpack in Central Nevada County's high country is the primary source of water for both watersheds. The Western County is also rich with an extensive network of perennial (year around) and intermittent (seasonal) creeks and streams as well as lakes and manmade ditches and reservoirs.

Precipitation and surface waters contribute to the ground water supply, but the supply is variable and generally unreliable as a permanent source for domestic and irrigation use. Truckee in the Eastern County can confidently rely on the one million-acre feet of water in the Martis Valley Aquifer for its use, but the Western County lacks a defined regional aquifer. Ground water is plentiful, shallow and of good quality in some scattered areas of the Western County, but in many areas it is either unavailable or unreliable in quantity and/or quality. The upper western Sierra slope is dominated by a granitic structure that only yields ground water if wells intercept intermittent fractures. The lower foothills in the westerly and southerly portion of the County have various geologic structure and varying ground water elevations making well productivity highly unpredictable and often unreliable. In some areas, ground water is enhanced by percolating streams and by leaking manmade ditches owned by the Western County's domestic and irrigation water suppliers. Sixty percent of existing homes in Nevada County rely on ground water wells.

The Nevada Irrigation District (covering 200,000 acres in Western Nevada County) is the primary purveyor of treated domestic and raw irrigation water in the Western County. Water is delivered through 300 miles of pipeline and some 400 miles of ditches. The infrastructures were originally constructed during the gold mining period for gold recovery and it was later extended for agriculture. The District's total storage in 10 reservoirs is 250,280-acre feet with water also diverted from the middle Yuba River and Canyon Creek watersheds into the South Yuba watershed at Spaulding Reservoir. The District sells raw water to Nevada City during periods of peak demand, and Grass Valley purchases raw water from the NID on a year round basis. Both cities treat the raw water to State drinking water standards.

The District also provides treated water for domestic consumption to Cascade Shores, Sherwood Forest on Old Auburn Road, Lake of the Pines, Alta Sierra, Lake Wildwood and Penn Valley. Treated water is also provided to other outlying areas including the Glenbrook Basin and portions of Banner Mountain. The District currently provides about 17,000 residences with treated water.

The 1270-acre Washington County Water District serves some 130 connections with filtered and chlorinated water in the small community of Washington. The San Juan Ridge County Water District serves around 30 irrigation customers with raw water from Shady Creek stored in the 93-acre feet Pine Grove Reservoir.

There is little information available on the quantity and quality of wells on private property in the Western County. Officials of the Nevada County Department of Environmental Health have long expressed concern about the long-term impact of septic systems on the chemical and bacterial constituents in the ground water, in particular the accumulation and effect of nitrates. As somewhat of a precaution, since 1980 County regulations require new lots intended to be served by public water and a septic tank/leach field to contain at least one and one-half acres. For new parcels proposed to be served by a well and septic tank/leach field, the minimum parcel size is three acres. An even larger minimum parcel size or residential density may be required depending on current zoning.

All new wells are required to receive a permit from the County Department of Environmental Health, but no agency keeps track of which wells are in use and their productivity and water quality. Policy 11.3A in the 1995 Nevada County General Plan requires that, "The County shall provide for a comprehensive and organized system of well log data. Such data shall be generalized as necessary to protect confidentiality of individual wells. This information will be utilized by decision makers to assist in the making of land use decisions." Although almost 10 years have passed since the policy was adopted, the County has made no effort to develop a system that would aid the public, Planning Commission and Board of Supervisors in understanding Western County ground water.

When the County's 1995 General Plan was adopted, the Environmental Impact Report on the Plan recommended that the County undertake a ground water study to assess ground water supplies, quality, demand and use. The study would have helped the County understand when proposed new development could be expected to cause overdraft of ground water supplies to the detriment of existing residents, or when piped and treated water should be extended to serve any new development. The County rejected the EIR's recommendation and adopted the yet-to-be implemented Policy 11.3A instead.

There are almost 100,000 people in Nevada County today. If every property owner develops to the extent allowed by current zoning, the County's build-out populations could reach 233,000 people. Since about one-half of the existing and planned homes will rely on ground water, the County appears to be gambling irresponsibly on the capabilities of the mysterious ground water system. The situation is particularly worrisome when it is apparent that many areas within the sprawling Nevada Irrigation District have little hope of getting piped and treated water if wells begin to fail.

To protect the quality of its raw water system, and to avoid water losses and property damage, the Nevada Irrigation District has adopted policies regarding encasement of portions of its 400-mile long ditch system. Because the relationship between leaking ditches and the ambient ground water system is not understood, ditch encasement could also affect existing and future ground water wells.

Nevada City's limited growth potential doesn't warrant concerns about the capabilities of its domestic water system to serve future growth. Grass Valley's 1999 General Plan, however, provides for significant amounts of residential, commercial and industrial growth despite significant adverse environmental effect warnings in the Plan's Environmental Impact Report including a statement that projected growth will potentially strain local water distribution systems and create demand for expanded services and facilities. The EIR on the 1995 County General Plan concluded that buildout of the proposed plan land uses and associated population growth will result in unavoidable impacts on the County's ground water resources because the availability of ground water supplies is not known. Benjamin Franklin said, "When the well's dry, we know the worth of water." Local government should heed the warning.

